

PHILIPPINE SCIENCE AND TECHNOLOGY ABSTRACTS

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DEPARTMENT OF SCIENCE AND TECHNOLOGY

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ABOUT THE COVER

The cover is inspired by a honeycomb structure, which reflects the content of PSTA. Apart from the common knowledge that a honeycomb represents bees' house, this structure is also referred to other scientific and technological studies such as in Archaeology, Architecture, Computer Science, Genetics, Geology, Information and Communications Technology, Mathematics, and Physics. Similarly, the PSTA encompasses a variety of S&T disciplines and is consolidated into one sourcebook.

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PHILIPPINE SCIENCE AND TECHNOLOGY ABSTRACTS

DECEMBER 2023

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PHILIPPINE SCIENCE AND TECHNOLOGY ABSTRACTS

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Color Test Kit for Detecting Organophosphate and Carbamate Pesticides by Using Esterase Extract from Honey Bees

Udomsap Jaitham, Sumed Yadoung, Anurak Wongta, Bajaree Chuttong, Khanchai Danmek, and Surat Hongsibsong

Organophosphates (OPs) and carbamates (CMs) are two classes of pesticides that are widely used in agriculture, public health, and home pest control. Both OPs and CMs work by inhibiting the activity of acetylcholinesterase, an enzyme that breaks down the neurotransmitter acetylcholine. Analytical methods used for the detection of OPs and CMs can be costly, as they often require specialized equipment and experienced analysts. Therefore, it is necessary to develop low-cost, quick, and simple analytical techniques for OPs and CMs detection. This study developed a method for detecting OPs and CMs using esterase enzymes from honey bee heads and a colorimetric technique. The limits of detection (LODs) for OPs include dicrovos, mevinphos, azinophos-methyl, and chlorpyrifos with values of 0.005, 0.001, 0.02, and 0.02 mg/kg, respectively, and the LODs for CMs are carbaryl, ethiofencarb, oxamyl, and fenobucarb with values of 0.0008, 0.03, 0.01, and 0.09 mg/kg, respectively. Comparisons between the developed method and the GC-FPD showed no difference in detecting OPs and CMs residues in fruits and vegetables. This developed method can detect OPs and CMs residues in fruits and vegetables, which will help reduce costs and facilitate easy verification.

Keywords: *enzyme, fruit and vegetables, honey bee, pesticide*

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Comparative Assessment on Rubber Farming in Agusan Del Sur Before and during the Covid-19 Pandemic

Manuel T. Tabada Jr., Rodel L. Oclaret, Fernando L. Marzo Jr., and Beverly T. Omambing

The business closures, production halting, and disrupted mobility of products during the COVID-19 pandemic have slowed down the economy globally. In the rubber industry, the ANRPC projected a decline in natural rubber production and consumption, citing the “turbulent” impact of the pandemic. This study was conducted to seek facts on the situation of the rubber industry in the province of Agusan del Sur since there was limited information on its status during the pandemic. Using a descriptive method to validate the rejoinder from the respondents of 200 rubber farmers, the results revealed that the majority have small-scale production in less than a hectare. The study showed that there was a decrease in the selling price of the rubber, increased cost of acetic acid and fertilizers causing less application of fertilizers per tree, and a reduction of employed tappers. These factors contributed to the significant drop in rubber farming net income.

Keywords: *COVID-19, rubber production, marketing practices, rubber industry*

NRCP Research Journal, Volume No. 22 Issue No. 1, 133-146
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Distribution, Accumulation, and Risk Assessment of Pb and Cd in the Tea Plant Leaves, Black Tea, and Soil from Different Tea Plantations in Lahijan, Iran

Azadeh Rashidimehr, Zahra Mosavvari, Parisa Ziarati, and Soheyl Eskandari

Since heavy metals (HM) exist in the soil due to industrial activity and the usage of pesticides and fertilizers, monitoring the content of these pollutants is very significant. The current research aimed to determine the concentrations of cadmium (Cd) and lead (Pb) in the tea plant leaves, black tea, and soil and look for their correlations. Twenty-seven (27) samples were divided into three groups of tea plant leaves, black tea, and soil from the same tea plantations originating from Lahijan, Iran. The concentrations of Pb and Cd in samples were determined using a flame atomic absorption spectrophotometer. After that, some analyses were conducted to find the correlation between the content of Pb and Cd in tea plant leaves, black tea, and soil, and their health risks were evaluated. In leaves, black tea, and soil, the mean contents for Cd were 0.001, 0.044, and 0.044 ppm, whereas those for Pb were 0.501, 0.939, and 2.093 ppm, respectively. The results showed that Cd and Pb concentration means in tea plant leaves, black tea, and soil samples were lower than the guidelines recommended by EU, WHO, and national Iranian standards ($P < 0.05$). The values of the non-carcinogenic hazard quotients (HQ) and the hazard index (HI) were below 1, indicating that these two HMs will not adversely affect consumers' health through the oral pathway of drinking tea. However, more attention should be paid to monitoring the content of HMs in soil. This research recommends that soil Pb contamination should be managed to ensure safe tea production in the study area. An effective management strategy appears necessary to ensure the quality and safety of tea plantations, as well as to reduce the risk of the accumulation of HMs in tea.

Keywords: *carcinogenicity, hazard index (HI), health hazard, heavy metal, non-carcinogenic hazard quotients (HQ)*

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Effect of *Leuconostoc mesenteroides* and *Saccharomyces cerevisiae* Fermentation on the Pasting Properties of Sweet Potato (*Ipomoea batatas*) Flour

Neti Yuliana, Siti Nurdjanah, Arifia Zulaika Andaningrum, and Floirendo P. Flores

The modification effect of fermentation on the pasting properties of flours enhances their potential as functional ingredients in product development. As such, the fermentation of sweet potato (SP) may alter its pasting properties and thus enhance its application for new food product development. The aim of this study was to determine the effect of starter culture and fermentation time variations on the pasting profile and amylose content of SP flour. The starters used were *Leuconostoc mesenteroides*, *Saccharomyces cerevisiae*, and a paired culture of *Leuconostoc mesenteroides* and *Saccharomyces cerevisiae* with a fermentation time of 24, 48, 72, and 96 h. Results obtained showed that fermentation starter variation had a significant effect ($p < 0.01$) on some pasting properties and amylose content of the SP. The highest peak viscosity of 1204 Brabender units (BU) was obtained from samples fermented with the paired culture of *Leuconostoc mesenteroides* and *Saccharomyces cerevisiae*. Based on these results, fermented SP flour possesses the potential to be applied to products that require a thickening property.

Keywords: *fermented sweet potato flour, Leuconostoc meseneroides, pasting properties, Saccharomyces cerevisiae*

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Genome-wide Analysis of Drought-related Genes of “Alphonso” and “Tommy Atkins” Mango (*Mangifera indica* L.) Cultivars

Karl Vincent J. Jose, Bryan C. Bontor, Cris Q. Cortaga, Darlon V. Lantican, and Eureka Teresa M. Ocampo

Mango (*Mangifera indica* L.) is one of the most popular fruit crops grown and traded globally. Mango can withstand seasonal drought periods, especially during flowering. However, prolonged drought stress can cause the weakening of the plant and may encourage injuries and diseases caused by abiotic and biotic factors. With the availability of the mango genome, genomic studies related to drought adaptation of mango can now be extensively explored. In this study, genomewide drought-related genes (DRGs) of mango were analyzed using the whole genome sequences (WGS) of “Alphonso” and “Tommy Atkins” cultivars (PRJNA487154 and PRJNA450143, respectively). A total of 261 and 257 DRGs were identified in the genome of “Alphonso” and “Tommy Atkins,” respectively, using BLASTP. Approximately 50% of these genes are involved in both molecular and physiological adaptations of mango to drought. Among the drought stress genes, the ABC transporter gene *ABCG40* had the highest number of homologs in mango, followed by calcium-dependent protein kinase genes *ZmCPK4*, *CPK21*, and *CDPK7*, as well as the plasma membrane proton ATPase *OST2*. Gene ontology (GO) analysis of the DRGs revealed that protein binding, ATP binding, and mRNA binding are the most common molecular functions, whereas the predominant biological process of these DRGs is related to their response to water deprivation. Phylogenetic analysis showed that the drought-related proteins in “Alphonso” and “Tommy Atkins” are broadly clustered into seven and six major clades, respectively. This study, to date, offers the most comprehensive information on the genome-wide DRGs of the mango, which can strengthen marker-assisted breeding programs for drought tolerance in mango and other related fruit trees, as well as the future incorporation of favorable alleles toward improving the overall agronomic characteristics of this Philippine important fruit crop.

Keywords: *drought-related genes, gene mining, mango*

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Identity and Phenotypic Variability of a Passion Fruit Cultivar in Lucban, Quezon Province, Philippines

Jeric A. Presas, Krizz Audrie D. Trinidad, Nic Oswald M. Borines, and Wilfredo B. Barrera Jr.

The passion fruit cultivar in Lucban, Quezon, Philippines is poorly described. To address this knowledge gap, this study characterized the phenotypic features and variability that exists in the plantation of passion fruit in Lucban. A total of 68 morpho-agronomic descriptors (32 quantitative and 36 qualitative) were used for the characterization. The results showed that the distinguishing characteristics of the cultivar were light green branch color, long and wide leaf with trilobate division and nectaries on the petiole, campanulate hypanthium, wavy corona filament, nectaries on the sepal, white color of the perianth and corona ring filaments with deep purple color at the base, and yellow peel and pulp color. Based on these characteristics, this study confirmed that the identity of the passion fruit cultivar is *Passiflora edulis* f. *flavicarpa* Degener. Some notable variants were observed – including purplish green branches, scarce anthocyanin on the reproductive parts, and fruit with oval fruit shape and lenticels arranged in a striated pattern. The scaled principal component analysis identified nine principal components (PCs) that explain at least 80% of the total variation in quantitative characters, whereas three PCs explain about 78% of the total variation in qualitative characters. Further characterization using molecular markers could be done to

supplement the results of this study. Nevertheless, the results are significant for reintroduction, pre-breeding, and *ex situ* conservation of passion fruit germplasm.

Keywords: *descriptors, genetic diversity, germplasm conservation, morpho-agronomic characteristics, Passiflora edulis f. flavicarpa, planting material*

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0007

Influence of Planting Date and Planting Distance on Population Density of Onion Armyworm

Christine Joy S. Manalili, Jasper Neil R. Mandac, Catherine Joy Garcia, Paula Blanca G. Aquino, Milagros S. Diaz, John Dave C. Aquino, and Marilyn G. Patricio

Onion is an important crop in the province of Nueva Ecija, Philippines. Currently, its production is being constrained by onion armyworm (OAW; *Spodoptera exigua*). The impact of planting dates and distance on the infestation of OAW was studied across two productions. The aim is to evaluate the influence of different combinations of planting dates (November, December, and January) and row spacing [5 cm x 10 cm, 8 cm x 10 cm, 10 cm x 10 cm, and farmer's practice or *waray* (6–10 cm x 6–10 cm)] on the damage and population density of OAW. The count of observed OAW larvae from the earliest month (November) and during the month of the usual production period (November–December) was negligible to minimal. However, a significant increase in the OAW population during late planting (January). In terms of leaf damage caused by the OAW feeding, November, December, and January planting had an increasing percentage as the OAW population also increased. There was an increase in bulb diameter as the row spacing widens (10 cm x 10 cm), as well as an increase in the number of marketable bulb onions when it is narrow (5 cm x 10 cm). This study showed that planting dates and distances should be one of the major considerations in onion production and insect pest management.

Keywords: *onion, planting date, planting distance, Spodoptera exigua*

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0008

Naratibo ng Lubi sa Ating Gunita: Ang Industriya ng Niyog sa Panitikan at Kasaysayang Pilipino, 1940-2018

Romeo Palustre Peña

Pag-aambag sa pagsasakaysayan ng industriya ng niyog sa Pilipinas ang pangunahing layunin ng pag-aaral na ito. Gumamit ng pamamaraang pangkasaysayan (historiograpiya) at pamamaraang pampanitikan (tekstuwal, kontekstuwal, subtekstuwal at intertekstuwal) sa pagsusuri ng mga akda upang masapul ang layunin na madalumat ang mga paggunita sa industriya ng niyog sa mga naratibong pangkasaysayan at pampanitikan at matukoy ang gamit nito sa paghubog ng kakanyahan, karangalan at kaakuhan o pagkamamamayan ng mga magniniyog sa Pilipinas. Mula sa isinagawang pagsusuri sa mga naging paggunita sa niyog sa mga naratibong mula sa oral na panitikan at sa mga naratibong pangkasaysayan at pampanitikan mula taong 1940 hanggang 2018, natuklasan sa pag-aaral na ito ang mga ideya at kaalaman na maaaring maging tungtungan sa pagpapatatag ng industriya ng niyog sa hinaharap. Gayundin, nasiyasat at naitampok sa pag-aaral na ito ang halaga ng mga

maglulukad/magniniyog/magkokopra sa Pilipinas, partikular na nadukal ang kanilang malaking gampanin sa pagpapayabong ng niyog bilang puno ng buhay at ang gampanin nila sa pagpapaunlad ng industriya ng niyog na maituturing na kadluan ng yaman ng ating bansa.

Keywords: *Industriya ng Niyog, Niyog/Lubi, Oral na Panitikan, Naratibo, Agrikultura, Bondoc Peninsula*

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0009

**Two New Species of Darkling Beetles of the Genus *Gauromaia* Pascoe, 1866
(Coleoptera: Tenebrionidae: Cnodalonini) from Central and Southern Mindanao with
Updated Species Geographic Distribution and a Key to Species of the Philippine fauna**
Milton Norman D. Medina, Rizalyn B. Cudera, Jhonnell P. Villegas, and Analyn A. Cabras

Two new species of *Gauromaia* from Mindanao Island Philippines are described and illustrated: *G. dorsu* Medina & Cabras sp. nov. and *G. purpurea* Medina & Cabras sp. nov. In total, seven species of the genus are distributed in the Philippine archipelago, five of which are known on Mindanao Island. An updated key to the species in the Philippines and species distribution is also included.

Keywords: *Beetles, Cnodalonini, Darkling, Novel species, Taxonomy, Philippines*

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0010

**Role of Farmers' Training on Improving Pesticide Management and Food Safety in
Conventional Cabbage and Eggplant Production**
*John Julius P. Manuben, Jasper A. Sarmiento, Eric Jhon D. Cruza, Allan Adrian B. Galaoa, and Cristina
M. Bajet*

Pesticides pose a serious risk to the environment and public health when used in crop production in an unsafe and indiscriminate manner. Moreover, there is a preconceived notion that conventionally grown crops are not as safe as organic crops due to the presence of pesticide residues. To address this, an intervention that focused on farmers' training on proper pesticide management was conducted. Two farmer clusters were organized separately, and pesticide usage and practices were monitored and evaluated. The results of the evaluation indicated a significant decline in the usage of pesticides not registered for cabbage and eggplant production. Residue analysis for major insecticide groups (organochlorines, organophosphates, and pyrethroids) of the harvested crops showed that 100% of the eggplant samples (n = 20) and 80% of the cabbage samples (n = 20) had non-detectable pesticide residues (< 0.01 mg/kg). The cabbage samples with detectable residues are found to be compliant with the currently established CODEX and ASEAN maximum residue limits for the indicated pesticides. Overall, this suggests that training and monitoring activities conducted to strengthen the knowledge and adherence to pesticide safety practices resulted in safe conventional vegetable production. It is recommended that farmers' training and other extension activities be conducted periodically to promote the judicious use of pesticides for food safety.

Keywords: *Training, Pesticide management, Pesticide residues, Food safety, Conventional*

Variation in *Lycopene Epsilon-Cyclase* Gene in Selected Tomato Genotypes Revealed by EcoTILLING and Sequencing

Gardoce, Roanne R. , Guevarra, Precious R., Galvez, Hayd

Selected tomato genotypes with contrasting fruit colors of orange and red were investigated for sequence-level variations of candidate genes involved in lycopene cyclization. Sequence-specific markers for tomato lycopene beta-cyclase (3) and *lycopene epsilon-cyclase* (1) genes were designed and used to screen for putative single nucleotide polymorphisms (SNPs) through EcoType Targeted Induced Local Lesions IN Genome (EcoTILLING) and Sanger sequencing. Despite being regarded as among the evolutionarily conserved genes in the carotenoid biosynthetic pathway of tomato, four homozygous and heterozygous SNPs were identified in *lycopene epsilon-cyclase* gene at the upstream of Exon 1 (1 SNP) and the intronic region between Exons 1 and 2 (3 SNPs) based on multiple sequence alignment of the processing tomato hybrid 'Ilocos Red' and table type inbred 'Hawaii7996'. These SNPs may have a regulatory association with variations in tomato carotenoid metabolism. Interestingly, no sequence difference was found between FLA456 and 'Super Apollo' despite being characterized by orange and red fruit colors, respectively. The results support prior studies suggesting that *lycopene cyclase* genes are transcriptionally controlled as evidenced by their highly conserved sequences. The SNPs characterized in this study at the promoter and intronic regions of *lycopene epsilon-cyclase* are starting loci to investigate further the genetic control of this gene in regulating carotenoid metabolism and products that result in varying tomato fruit phenotypes. **(Author's abstract)**

Keywords: *Carotenoid genes, EcoTILLING, Lycopene epsilon-cyclase, SNP, Tomato, Agriculture*

ARCHITECTURE

Architectural Environment Modification for Alleviation of Allergic Sensitization to Air Pollutants in the Urban Indoor Environment

Tiotuico, Elke Sim

An increase in prevalence of allergic asthma, allergic rhinitis, and atopic dermatitis is observed in the urbanized regions of Asia due to changes in ambient air quality and environment. Urban environmental pollutant exposure in low to middle-income countries such as the Philippines are significantly affected by air pollution due to urban emissions, furthering exacerbation of allergic symptoms. 69% of the Philippines' ambient air pollution in 2016 is attributed to traffic emissions according to the DENR, 90% of which is concentrated in the country's urban capital Metro Manila. Existing studies on clinically advised environment modification for the alleviation of allergic symptoms majorly revolve around the suppression of air pollutants using mechanical air filtering and home behavioral and sanitation interventions — showing a lack of research on whether similar results can be achieved through spatial intervention in a

naturally ventilated indoor environment which is characteristic of economically accessible tropical climate dwellings. This study aims to design spatial elements that provide a novel means for allergic symptom alleviation that can naturally suppress environmental allergy triggers that take the form of common urban air pollutants (PM2.5, PM10, TVOCs, carbon emissions) from entering the indoor environment; namely an air filtering building façade and a cross-ventilated space plan. Field measurements for air quality in an existing standard-sized urban structure were determined using an air quality detector, whose results were input in a 3D computerized model modified with the proposed design elements. The study model was tested for natural airflow and pollutant filtration performance using CFD simulations. Improved passive airflow and pollutant suppression was observed in the simulation of the proposed design elements seeing a consistent 95.64% decrease of all pollutants within the indoor space and qualitative improvement in air velocity magnitude due to broader air distribution. **(Author's abstract)**

Keywords: *Indoor air, Particulate matter, Allergic sensitization, Urban dwellings, CFD, Architecture*

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0013

A Comparison of the Present and Proposed OR Department of Cardinal Santos Medical Center, Using Evidence-Based Design Criteria

Dalmacio, Ronald J

Designing Surgery Departments in the Philippine setting is a challenge for architects. The lack of information on how to validate design elements can lead to calculable consequences determined by the hospital's turnover time and profit. Often, any architect who will explore a way to design these departments would initiate a trial-and-error design process because of the lack of knowledge and information to the needs of both the patients and the staffing—nurses, doctors, office staff, etc.

This design problem is called Design Dilemma by Lauren Thomas (2010). Design Dilemma is experienced whenever a design problem, such as how to design an Operating Department, leads into a paralysis from the analysis due to the complexity of the users involved, as well as the lack of formal experimentation into the relationship between facility design and its effects on the operations. Ultimately, it results to a design qualified by the number of surgery cases served per day. Krupka,& Sandberg (2006) stated that operating room management focuses on reducing wasted time to perform more cases in regular business hours, reduce overtime, or provide a better experience for staff and patients. All of this will be contextualized into Philippine medical facilities which hospital architects in the country need as a guide to newer hospitals in the future. **(Author's abstract)**

Keywords: *Evidence-based design, Healthcare design, Hospital design, Surgical department, Modified-delphi method, Architecture*

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Investigation of the Compressive Strengths of Coconut Shells as Partial Alternative of Coarse Aggregates in Concrete Mix

Manaloto, John Ar

As the infrastructure development continues to thrive in the Philippines, the demand for concrete in the construction industry also grows. Aggregates, being one of the major components of concrete, plays a vital role in construction. The method of extracting these aggregates entails numerous environmental issues such as land degradation, water pollution, and air and dust pollution. The presence of these non-eco-friendly ways of acquiring raw materials of concrete calls for a need to explore and to find suitable material to substitute the natural stone. Alternative materials show increasing potential in concrete mix design strategies and provide new opportunities for a number of design conditions.

This paper introduces the usage of agricultural wastes namely the coconut shell as a substitute to coarse aggregates. Context of concrete mix and how standard design measures are enacted. The research incorporated the crushed coconut shell into the concrete mixture as an aggregate. The physical properties of coconut shells as well as the components of concrete were presented. The compressive strength, slump test, concrete density, and air content were also presented. The slump test and compressive strength test were conducted in accordance with ASTM C143 and ASTM C39 respectively. Results show that workability of concrete is slightly affected at increasing replacement of coconut shells. Integration of coconut shells caused a 24% concrete strength reduction for every 20% coconut shell replacement at 28 days strength. **(Author's abstract)**

Keywords: *Coconut Shell, Agricultural Waste, Concrete Mix, Compressive Strength, Eco-friendly, Sustainable Material, Architecture*

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Manila: City Beautiful Lost? A Historical and Configurational Analysis of Daniel Burnham's Proposed 1905 City Beautiful Plan

Poco, Leandro Nicholas

Metro Manila's contemporary socio-spatial inequities and problems with urbanization are usually traced by popular discourse to the incomplete implementation of Daniel Burnham's City Beautiful masterplan. This unfinished work is further compounded by the poorly managed post-war reconstruction and haphazard growth of the city into a metropolitan region after independence from the United States. This study reviews the relevant historical timeframes that define the typo-morphological stages of Manila's spatial development. These stages then become the basis for this study's use of quantitative spatial network analytical methods under space syntax theory. This methodology is used to understand the Burnham Plan's spatial network vis-à-vis the city's prior conditions, and the succeeding post-(non) implementation effects of the Burnham Plan on its eventual expansion outside of the original city limits. This uncovers the underlying spatial configuration of the Burnham Plan's spatial network, showing how the intent to create a civic core does the opposite and leads to the shifting of spatial network centralities away from the civic spaces proposed by Burnham, and how it creates new latent socio-spatial enclaves in the city. This foreshadows the fragmentation of Metro Manila's broader spatial network centralities as it grows out of its city limits. This study calls the critical attention of Philippine planning and architecture to add quantitative nuance to the contemporary discourse on Burnham's City Beautiful Plan for

Manila, hopefully to move on from it, and forward to the use of similar quantitative methods in not just researching about, but in planning and designing Philippine Cities. **(Author's abstract)**

Keywords: *Space Syntax, Daniel Burnham, William Parsons City Beautiful, Manila, Intramuros, Enclaves, Encomienda, Hacienda, Reducciones, Architecture*

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0016

Reverberation Time of University of Mindanao Matina Campus Classrooms: A Basis for Acoustic Environment Enhancement

Quinto, Jr., Ilumin

The quality of the learning environment in classrooms depends on various factors. Building acoustics would be one of these factors. The two most important issues as regards this learning environment are excessive background noise and reverberation. They both interfere with the ability of the students to hear, listen, and understand what is spoken. It can lead to an overall reduction in the level of learning. The research focused on reverberation time or RT60. Standards presuppose that the acceptable range is 0.4 to 0.6 seconds. One second would be the maximum acceptable limit. The study was conducted at the University of Mindanao, Matina Campus. This university is known for its open admission. This open admission means that all types of students are admitted with all the various levels of preparedness. It was interesting to note that in the 2015 study of that university, most of its new students are considered not ready. The acoustic environment can exacerbate the learning development of most of the students. This descriptive survey research used multistage sampling. The instrument used in determining the RT60 was an Android App called Reverberation Time Pro, installed on the ASUS Z00LD smartphone. Only eleven percent of classrooms are compliant. The features of these compliant classrooms served as a guide for enhancing the 89% that are not. **(Author's abstract)**

Keywords: *Acoustics, Reverberation time, RT60, Lecture rooms, Speech intelligibility, Architecture*

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0017

Wellbeing in Future Urban Landscapes in the City of Manila

Mical, Thomas E., Villanueva, Cecilia

Wellbeing in future urban landscapes are distributed and connected green spaces intertwined with architecture and urbanism as networks and lattices of urban biodiversity. Wellbeing and spirituality in the Filipino culture relates to the calm and peace that can be found in natural surroundings and access to basic needs.

This study aims to forge partnerships with major stakeholders, identify best practices and consult with experts on possible

wellbeing interventions in Manila's future landscape. Furthermore, this study intends to utilize existing community resources to design grassroots innovations for wellbeing in the current and future tense. A series of focused group discussions and community meetings links collaborative efforts in engaging the different stakeholders in the study area.

Results show that a linked green infrastructure is best achieved from a bottom-up initiative reinforced by technical experts in showcasing grassroots best practices that sustain programs on wellbeing in future landscapes. Devolving leadership at the barangay level strengthens cooperation of public, private and other agencies. Information and communication technology is vital in maintaining linkages during this time of multiple disruptions. An openness to multi-sectoral collaboration and extending technical expertise to communities are deeply rooted in the Filipinos "bayanihan" spirit. **(Author's abstract)**

Keywords: Wellbeing, Future, Urban, Landscapes, Architecture

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BIOLOGY

0018

Application of *Aglao E Unhas* Compound from *Aglaophenia cupressina* Lamoureaux against *Colletotrichum gloeosporioides* on Strawberry and *Aspergillus niger* on Mango *Mustopa, Apon Zaenal, Gani, Fuad, Tuwo, Mustika, Manguntungi, Baso, Litaay, Magdalena, Laga, Amran, Johannes, Eva, Vanggy, Leggina R*

This study aimed to extract and characterize the main bioactive compound of *Aglaophenia cupressina* Lamoureaux using UV, IR, and NMR spectroscopy. This compound was then tested *in vitro* using the agar diffusion method at a concentration of 15, 30, and 45 ppm against two fungi isolated from the spoiled strawberry and mango. The efficacy of *Aglao E Unhas* was tested in fully ripe strawberries and mangoes. The number of fungi that grew during storage was counted using the standard plate count method. The results of the isolation of hydroid *A.cupressina* yielded the pure compound *Aglao E Unhas* derivative of alkaloids, which is a new compound, in the form of white crystals, melting point at 55–56 °C, which has 15 carbon atoms and 39 hydrogen atoms, one NH group in a heterocyclic ring. *Aglao E Unhas* at 45 ppm has antifungal properties against *Colletotrichum gloeosporioides* and *Aspergillus niger*. The largest inhibition zone against *Colletotrichum gloeosporioides* was 18.20 mm at 48 h and increased to 18.70 mm at 72 h of incubation. The inhibition zone against *Aspergillus niger* at 48 hours of incubation resulted in 17.35 mm and 72 h of incubation increased to 18.00 mm. **(Author's abstract)**

Keywords: *Aglao E Unhas*, *Aglaophenia cupressina* Lamoureaux, Antifungal, Bioactivity, Fresh-cut fruits, Hydroid, Biology

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NP

0019

Bacterial and Fungal Community Profiling of Karst Ecosystem in Basey, Samar, Philippines Using Shotgun Metagenomic Approach

Balolong, Marilen P. , Querubin, Florabelle D. , Lara, Zachary B. , Bosito, Eula Francia M. , Villarama, Kristiann Gabriele D.M. , Geronimo, Edmerson B. , Ong, John Dan

The Philippines has an abundance of karst or forest over limestone landscapes, but only a small percentage of them have been studied and protected. Although the flora and fauna of karst forests are diverse and unique, little is known about the microflora that inhabits this ecosystem. The taxonomic and functional composition of bacteria and fungi in soil samples from three locations within three karst forest zones in Basey, Samar, Philippines were analyzed using Illumina shotgun metagenome sequencing. Proteobacteria and Actinobacteria bacterial sequences were most prevalent in the karst soil, followed by those of the Firmicutes, Acidobacteria, Chloroflexi, Planctomycetes, Cyanobacteria, Verrucomicrobia, Bacteroidetes, and Deinococcus-Thermus. The most abundant fungal sequences belonged to Ascomycota, followed by Basidiomycota. An average of 33 million predicted protein features was detected across all sites. Enzyme pathways for nitrogen and sulfur metabolism, and several carbon fixation pathways, appeared nearly complete. To our knowledge, this is the first report to provide baseline information on the microbial community and their possible roles in karst forest ecosystem health in the Philippines, which may lead to identifying new microbes with specialized metabolism and promoting biodiversity conservation of karst forests in the Philippines. Furthermore, correlation analysis with plant diversity will reveal plant-microbe interaction leading to the understanding of the adaptation, abundance, survival, and diversity of microorganisms and plants. **(Author's abstract)**

Keywords: *Functional diversity, Karst, MG-RAST, Microbial diversity, Philippines, Shotgun metagenomic sequencing, Biology*

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0020

Bioactive Compounds from Hot Spring and Volcanic Microorganisms

Villarubia, Mariel Rose , Miranda, Kevin Jace , Maglangit, Fleurdeliz, Dalman, Dani

Antimicrobial resistance (AMR) is a threatening global health challenge with an estimated annual death toll of 10 million by 2050 if unabated. Therefore, there is a mounting urgency to find new sources of clinical candidates for the development of drugs that are effective against drug-resistant infections and cancer. Hot springs and volcanic environments represent valuable sources of novel natural products (NPs) – including polyketides, alkaloids, and peptides – yet largely untapped and understudied. Microbes from these niches have been found to develop unique defenses to thrive in extreme temperatures and harsh conditions, leading to the biosynthesis of novel molecules with unique chemical architectures and remarkable biological activities. The present review surveys the bioactive NPs from hot springs and volcanic microbes from 2006–2022, highlighting their chemical structures and biological potential. Notably, the compounds ohmyungsamycin A, dicitrinone B, and terrein displayed more potent cytotoxic effects on several cancer cell lines compared to the current chemotherapy drugs, indicating a promising potential for drug development. The continued exploration of extreme microbes will undoubtedly bring many discoveries of bioactive molecules potentially valuable for biotechnological or pharmaceutical applications. **(Author's abstract)**

Keywords: *Biological activity, Drug discovery, Hot springs, Microorganisms, Natural products, Volcanic environments, Biology*

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Biodiversity Conservation in Mining Landscapes: Mining is an important sector of the Philippine economy, but it often results in negative impacts on biodiversity. To mitigate these impacts, it is crucial to assess biodiversity in mining areas and integrate

Pampolina, Nelson M. , Daipan, Bernard Peter O., Tinio, Crusty

Mining is an important sector of the Philippine economy, but it often results in negative impacts on biodiversity. To mitigate these impacts, it is crucial to assess biodiversity in mining areas and integrate conservation efforts into mining operations. As part of the national policy guidelines on biodiversity compliance for mining companies, this study has conducted a systematic review to examine the various biodiversity assessment methods, tools, sampling designs, diversity parameters, values, and indices used in the Philippines' mining sites. Search engines and research databases were utilized in identifying diversity assessment-related research. Based on the eligibility criteria, only 25 of the 100 papers downloaded and two project terminal reports were eligible and considered in the review. It was found that authors commonly used transect line and quadrat methods for floral studies and transect line, mist netting, point count, and opportunistic sampling for faunal studies. Species abundance, relative abundance, dominance, frequency, relative frequency, density, relative density, percent cover, and importance value were the most frequently assessed biodiversity parameters, whereas the Shannon-Wiener diversity index, Simpson index, species richness, and evenness were the most commonly used indices. Endemism, economic importance, invasiveness, and conservation status were additional factors evaluated. Overall, this review provides an overview of the various biodiversity assessment methods used in the country's mining areas and offers guidance for future assessments in other mining landscapes. The limited number of studies related to biodiversity assessment in mining areas in the Philippines over the last decade highlights the urgent need for more research in this field. (Author's abstract)

Keywords: *Biology, Biodiversity, Conservation, Mining area, Mineral production sharing agreement*

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Bioprospecting of *Limosilactobacillus fermentum* strain MH 2.3 for Anti-diabetic Properties: from Biochemical to Molecular Docking Approaches

Fenylestari, Gita , Handoko, Vanggy, Leggina Rezzy , Djamaludin, Heder , Manguntungi, Baso , Whatin, Ulfa Febiana, Kusuma, Ali B

Diabetes mellitus is a metabolic disorder characterized by an increase in blood glucose beyond normal limits or hyperglycemia due to abnormalities in metabolic processes due to insulin deficiency. Acarbose is now widely used as a drug for people with diabetes mellitus. However, the use of acarbose can cause negative effects in the form of flatulence, diarrhea, and hypoglycemia. Alpha-glucosidase enzyme inhibitors are needed to treat diabetes. Lactic acid bacteria act as inhibitors of alpha-glucosidase activity. This study aimed to determine the presence of specialized metabolites with antidiabetic compounds harvested from *Limosilactobacillus fermentum* MH 2.3 culture filtrate using biochemical and molecular docking analyses. The use of molecular docking aims to predict ligand bonds and target proteins, which focuses on energy affinity and bond interactions. The results of alpha-glucosidase inhibition assay and molecular docking indicated that *L. fermentum* MH 2.3 is a prospective "gold mine" in search of novel anti-diabetic compounds. The highest antidiabetic activity, inhibition value of 551.2%, was obtained from the undiluted crude extract of *L. fermentum* strain MH 2.3 culture following the incubation at 37 °C for 72 h. Tert-butyl 3-(1H-tetrazol-5-yl) piperidine-1-carboxylate and benzylmaleimide were found to be the best ligand candidates, as they inhibits the alpha-glucoside activities by forming hydrogen interactions at the

leucine residues (734A), similar residues found in its the native ligand. These results are supported by the respective lowest binding energy score of -4.5 kcal/mol when compared with the acarbose as the positive control. The docking was validated by estimating the RMSD values. This finding substantiates the evidence that bioprospecting novel bacterial strains provides a greater chance to discover unknown yet potential bioactive molecules for various biomedical purposes, one of which is a drug candidate to treat diabetic mellitus, which now is considered one of the most life-threatening global epidemics. **(Author's abstract)**

Keywords: *Alpha-glucosidase enzyme, Antidiabetic, Limosilactobacillus fermentum strain MH 2.3, Molecular docking, Biology*

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0023

Carbon Storage of Vegetation in the Different Land Uses of Mt. Musuan in Bukidnon, Philippines

Amoroso, Victor B. , Paquit, Joseph C., Polinar, Kleia Dei

Mt. Musuan is a mountain ecosystem that is valued for its biodiversity and ecotourism. In order to further enhance the biodiversity and ecotourism activities, the current status of its land uses and the carbon storage of its vegetation was assessed. Findings have shown four major ecosystems in the area – namely, natural forest, plantation forests, grass-shrubland, and agro-ecosystem – which respectively cover 16% (66 ha), 24% (103 ha), 39% (164 ha), and 20% (85 ha) of the mountain's 425-ha total land area. Trails and physical facilities occupy the remaining 1%. Fifteen (15) land uses were delineated, wherein eight are forest plantations. The largest area was the *G. arborea* plantation that comprised 37% (38.23 ha), whereas the least was the *P. caribaea* plantation that only covers 0.7% (0.73 ha). The summit has an area of about 1800 m², from which around 1000 m² can be used by visitors for sightseeing and camping. The designated viewing area at the very top is much smaller and is estimated only at around 100 m². In terms of vegetation carbon storage, the natural forest stores an estimated 208 Mg C ha⁻¹. For the entire Mt. Musuan, an estimated 25,522 Mg C is stored, 47% (13,657 Mg C) of which is in the natural forest. The data and findings in this study will have potential use in planning. Based on the spatial pattern of the land uses, planners and implementers will be guided on where to put up development projects and investments related to biodiversity and ecotourism development. Effective management of the natural forest to protect its remaining biodiversity and carbon should be done. Accelerated rehabilitation of the grass-shrubland ecosystem should also be done to further enhance the biodiversity and ecotourism potential of the area, as well as its capacity to store carbon. **(Author's abstract)**

Keywords: *Biodiversity and ecotourism development, Land use/ land cover, Mt. Musuan, Vegetation carbon, Biology*

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0024

Ciliate Abundance in Lake Lanao and its Bioindication on Water Quality

Abato, Jamel C. , Ameril, Camar P. , Abamo, Fema M., Disoma, Cyrollah

One-celled ciliated protozoans are characterized by hair-like structures called cilia projecting from cell surfaces. They are known as bioindicators of organic pollution in freshwater systems. Ciliate abundance was utilized to monitor the water quality of Lake Lanao from 2016 to 2018 in littoral and pelagic water zones of Marawi City, Ramain, Balindong, Taraka, and Binidayan, Lanao del Sur, across four different seasons: non-mixing, mixing, dry, and rainy seasons. The results exhibited that the mean abundance of ciliates in the lake fell within the ultra-oligotrophic category indicating that the water quality of Lake Lanao, from all sampled sites, depths, and seasons, is still good, clean, and healthy, and not organically polluted. The ciliate abundance scored significantly lowest in the non-mixing season than the rest of the seasons. Ciliate abundance topped in dry season, but it did not significantly differ from mixing and rainy seasons which also scored higher abundance. Temporal changes influenced ciliate abundance indicative of organic load fluctuations in the lake as the season changed. The use of ciliates as indicators of organic pollution in freshwater systems would serve as baseline data for future monitoring of the lake's water quality. The local government units were informed of the research findings to give basis in strengthening their policies for conserving the healthy conditions of the lake. **(Author's abstract)**

Keywords: *Ciliates, Bioindicators, Lake Lanao, Freshwater ecosystem, Organic pollution, Biology*

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0025

New Distribution Record of Golden-crowned Flying Fox Roost (*Pteropodidae: Acerodon jubatus*) in Timaco Hill, Cotabato City, Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), Philippines

Amino, Zandra C. , Tanabe, Maria Elena N. , Abler, Cathleen Angelie C. , Yabut, Ralph Francis A. , Eril, Sittie Janiffah M. , Flores, Andrie Bon A. , Salvaña, Florence Roy P. , Jumao-as, Cromwel M., Cano-Mangoang, Ch

Flying foxes are among bat species threatened with extinction due to anthropogenic activities. Conservation efforts have been employed to protect flying foxes thus, information on viable roosts is pertinent to their success. A population of an endangered Philippine endemic *Acerodon jubatus*, approximately 250 individuals, was recorded roosting on *Terminalia microcarpa* and *Pterocarpus indicus* Timaco Hill of Barangay Kalanganan II, Cotabato City, Philippines. The Bangsamoro Parliament of Cotabato City has a pending resolution to declare Timaco Hill as a protected area to preserve its biodiversity. However, its Comprehensive Land Use Plan envisioned the area as a potential commercial and ecotourism site. The discovery of *A. jubatus* population in the area can boost ecotourism and increase the economic potential of the local community. However, ecotourism can be a source of disturbance that can potentially affect wildlife. Considering the economic and environmental benefits of ecotourism, it is highly recommended that the Local Government Unit come up with a comprehensive strategic development plan for Timaco Hill to fulfill the goal of ecotourism – to generate revenue from tourism for wildlife conservation and the community's economic development. **(Author's abstract)**

Keywords: *Acerodon jubatus, Cotabato City, Ecotourism, Flying fox, Pteropodidae, Biology*

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0026

Effects of Bio- and Chemical Fertilizers on Growth and Soil Microbial Population of Cacao (*Theobroma cacao* L.) Seedlings

Victoria, Kristel S., Aggangan, Nelly

A comparative study was done to determine the growth, microbial population, and physicochemical properties on UF18 cacao (*Theobroma cacao*) seedlings when treated with chemical fertilizers and biofertilizers, either applied singly or in combination. The experimental design was randomized completely block design with five seedlings per treatment per block. Treatments used were: control, ½ recommended rate of chemical (RRC) fertilizer, RRC, MYKORICH®, MYKOCAP®, ½ RRC + MYKORICH®, ½ RRC + MYKOCAP®, RRC + MYKORICH®, and RRC + MYKOCAP®. MYKORICH® and MYKOCAP® contain 12 species of arbuscular mycorrhizal fungi isolated from stressed environments. The results showed that plant growth and physico-chemical properties were significantly improved by the application of biofertilizer than by chemical fertilizer. MYKORICH® treatment gave the highest spore count and is highly significant ($p < 0.05$) as compared to the other treatments with spore count ranging from 41–115.5/ 50 g soil. In terms of nitrogen-fixing bacteria count, ½ RRC treatment gave the highest ($16.9 \text{ CFU} \times 10^{-5} \text{ g soil}^{-1}$) bacterial count. RRC + MYKORICH® inoculation gave the highest values for most of the soil physico-chemical analysis (pH, P, K, and CEC). The positive response of cacao seedlings to mycorrhizal inoculation with or without chemical fertilizer provides a useful criterion in other agricultural lands throughout the country for crop production and sustainability. (Author's abstract)

Keywords: Arbuscular mycorrhizal fungi, Biofertilizer, Cacao seedlings, Chemical fertilizer, Biology

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0027

Effects of Chitosan Coating on the Postharvest Quality and Antioxidant Properties of Sweet Pepper (*Capsicum annuum* L.)

Bayogan, Emma Ruth V., Alpos, Mar

The development of diseases and decay in vegetables after harvest limits their shelf life and saleability. However, there is an increasing concern with the use of synthetic chemicals as postharvest treatments. Hence, there is a need to develop natural and more sustainable methods for controlling diseases in horticultural crops while maintaining good postharvest quality. The effect of chitosan, a naturally occurring biopesticide, at different concentrations on the physico-chemical attributes and shelf life of “Sweet Cayenne” pepper (*Capsicum annuum* L.) was assessed. Freshly harvested mature green sweet peppers of uniform quality were dipped in different chitosan solutions (0, 0.5, 1.0, and 1.5%) for 3 min and stored at ambient conditions ($26.51 \pm 0.72 \text{ }^\circ\text{C}$ and $79.00 \pm 5.98\% \text{ RH}$) for 15 d. Physico-chemical parameters were evaluated at a 5-d interval. In all treatments, shriveling was significantly delayed with 1.5% chitosan at 10 d after treatment (DAT). Visual quality was better in 1.5% chitosan-treated fruit relative to the control at 10 and 15 DAT by up to 22 and 8%, respectively. The onset of decay was delayed in 1.5% chitosan-treated fruit for up to 4 d as compared to the untreated lot. The total soluble solids content of chitosan-treated fruit was lower than the untreated by up to 40% at 15 DAT, signifying delayed maturation. For the antioxidant properties, chitosan (1.5%) did not prevent the degradation of ascorbic acid and the DPPH scavenging activity but increased the total phenolic content at 15 DAT (by 51% compared to the control). These results suggest that chitosan coating, especially when applied at a higher concentration (1.5%) seems to show potential in preserving the quality and bioactive compounds of sweet peppers. (Author's abstract)

Keywords: Antioxidant quality, *Capsicum annuum*, Shriveling, Surface coating, Visual quality, Biology

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Endophytic Fungal Species Isolated from Mangrove Trees *Rhizophora apiculata*, *Nypa fruticans*, and *Xylocarpus granatum* from Brunei Darussalam

Mohaimin, Abdul Zulâ€™adly, Alias, Muhammad Azib, Abdilllah, Anis Nadiah, Ahmad, Norhayati, Taha, Hussein, Shivanand, Pooja, Mohamad, Nur Azyyati Haziqah, Krishnamoorthy, Sa

An attempt made to isolate the mangrove endophytes from *Rhizophora apiculata*, *Nypa fruticans*, and *Xylocarpus granatum* has shown the presence of about 28 different strains of endophytic fungi belonging to the phyla *Ascomycota*. *Rhizophora apiculata* was found to possess highly diverse endophytic species compared to *Nypa fruticans* and *Xylocarpus granatum*. Furthermore, the leaves of the mangrove trees were found to serve as a rich source of endophytic fungal species compared to other segments studied. Moreover, it was observed that the leaf acted as a major source of endophytic fungi in *Rhizophora apiculata* and *Nypa fruticans*, whereas barks were found to have a high number of species in *Xylocarpus granatum*. **(Author's abstract)**

Keywords: ITS, Mangrove endophytes, *Nypa fruticans*, *Rhizophora apiculata*, *Xylocarpus granatum*, Biology

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NP

Enhanced Growth Performance of *Bauhinia purpurea* L. and Rhizosphere Soil Microbial Communities by Inoculation of Beneficial Microbes

Aggangan, Nelly S., Gestida, E

Bauhinia purpurea (belonging to Family Fabaceae-Leguminosae) is a small to medium-sized deciduous fast-growing tree that is very important in reforestation and agroforestry, and also used as fodder for livestock. This study investigated the influence of mycorrhizal inoculant with varying nitrogen-fixing bacteria (NFB) amendment levels on the growth performance of *B. purpurea*, the buildup of microbial communities in its rhizosphere soil, and root colonization in screenhouse conditions with UV plastic roofing, following a two-factor randomized complete block design. Factor 1 was the type of mycorrhizal inoculants applied on containerized seedlings grown in garden soil: AMF1 (MYKOCAP® or MCAP) and AMF2 (MYKORICH® or MRICH). Factor 2 was the rate of NFB (BioN™) amendment (0 g, 5 g per seedling). At 90 d, MCAP + BioN treated plants were 37% taller than the MRICH + BioN treated ones (34 ± 0.50 cm). Seedlings with MCAP + BioN or MRICH + BioN had higher diameter increment; partitioned biomass from stems, lateral roots, and primary roots; root-shoot ratio; and root colonization than those without BioN and the control. Likewise, the NFB population was 276 and 126%, respectively higher with MCAP + BioN and MRICH + BioN than their counterparts without BioN. Contrarily, partitioned biomass from leaves, roots, and shoots, and the arbuscular mycorrhizal fungi (AMF) spore density were higher with AMF inoculants alone. Spore count was strongly positively correlated with primary root biomass ($p = 0.013$, $r = 0.573$), NFB buildup with height increment ($p = 0.001$, $r = 0.708$), and root colonization with diameter increment ($p = 0.001$, $r = 0.805$), total biomass ($p = 0.023$, $r = 0.532$), stem biomass ($p = 0.001$, $r = 0.692$), shoot biomass ($p = 0.001$, $r = 0.698$), primary root biomass ($p = 0.029$, $r = 0.514$), and root biomass ($p = 0.005$, $r = 0.628$). AMF and NFB symbiosis was inferred to have been developed, thereby promoting overall plant growth with an increased mycorrhizal root infection and NFB buildup, while the increased spore density contributed to enhanced primary root growth. Field verification trials must be conducted to determine the microbial fertilizer's efficacy under abiotic and biotic stresses. **(Author's abstract)**

Keywords: Biomass, Microbial fertilizers, Mycorrhizal inoculation, Root-shoot ratio, Soil degradation, Biology

Ethnobotany and Conservation of Wild Edible Fruits in Sumatra: a Case Study in Pesisir Selatan, West Sumatra, Indonesia

Mukhtar, Erizal, Syamsuardi, Suwardi, Adi Bejo, Nur

Wild edible fruit (WEF) plant species are species that are not cultivated or domesticated but are available in their natural habitat and are an important food source for indigenous communities. In recent times, WEFs have been threatened by various factors – particularly over-exploitation, land-use changes, and biodiversity loss. The aim of the study, therefore, is to investigate the diversity and ethnobotany of WEF species used by indigenous people in West Sumatra, Indonesia. The study was conducted in five villages of Pesisir Selatan district, West Sumatra, Indonesia – namely, IV Koto Mudiek, Sungai Nyalo IV Koto Mudiek, Taratak Tempatih IV Koto Mudiek, IV Koto Hilie, and Taluk Tigo Sakato. The plant materials were collected from the study area, while local knowledge was gathered through semi-structured interviews involving 393 respondents that were selected using random sampling. A total of 75 WEF plants from 30 botanical families were found in the study area. These plants were used for multiple purposes – including food, medicine, construction materials, agricultural tools, fuel wood, and fodder. *Artocarpus integer*, *Baccaurea polyneura*, *Pometia pinnata*, *Baccaurea macrocarpa*, *Bellucia pentamera*, *Mangifera foetida*, *Durio oxleyanus*, *Mangifera odorata*, and *Baccaurea racemosa* were the most popular species for local people in the study area. Loss of traditional knowledge among generations is a major threat to the availability and existence of these species. Indigenous and local knowledge is essential for the use, management, and conservation of WEF plants. (Author's abstract)

Keywords: *Biodiversity, Sumatra, Traditional knowledge, Tropical fruit, Biology*

Evaluation of Blood-feeding Methods for Rearing Dengue Mosquito, *Aedes aegypti* L. (Diptera: Culicidae)

Hila, Abigaile Mia J., Obra, Glenda

Maintaining a mosquito colony for rearing is essential in research, and the rearing of mosquitoes in the laboratory requires blood as a protein source for females to produce eggs. The use of live animals for blood-feeding imposes ethical considerations and entails an additional laboratory for rearing the live animals. In this study, we have established an artificial blood-feeding system for *Aedes aegypti* that took into consideration the effects of four factors on blood-feeding – namely, egg source colony, blood source, age of females, and heating intervals. For the quality control tests, all parameters tested did not significantly differ between colonies after 14 generations. In terms of egg source, more adult females significantly fed from pig blood (PB) colonies (78%) than live mice (LM) colonies. In terms of blood source, more adult females (85%) fed on immobilized LM than in the artificial blood-feeding system with PB as a blood source. In terms of age, 3- and 5-d-old females showed the highest % blood-feeding (75–78%), fecundity, fertility, and recoveries compared to when females were fed very young at 1 d old and quite old at 7 d old. Among the heating intervals tested, re-heating PB every 60 min for 4 h showed the highest % of females fed (66%). All four factors significantly explain the variation in the % blood-feeding

efficiency of female mosquitoes and, therefore, important factors to consider in mosquito colony maintenance. We also conclude that the established artificial blood-feeding system can be used for rearing *Ae. aegypti*. The results of the study may encourage laboratories in other institutes that conduct mosquito colony maintenance to seek inexpensive, effective, and locally-available artificial blood-feeding systems. . (Author's abstract)

Keywords: *Artificial feeder, Blood-sucking, Feeding efficiency, Feeding membrane, Sterile insect technique, Biology*

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0032

Field Observations of Same-sex Non-reproductive Mounts in Adult Male Philippine Long-tailed Macaques (*Macaca fascicularis*)

Meneses, Kelvin Bryle V. , de los Santos, Chenalin C. , Torrefiel, Jay T. , Sabanal, Brian T., Gamalo, Lief Erikso

Non-reproductive sexual behaviors have been reported in many different animal taxa, including non-human primates (NHPs). One of the Philippine NHPs that exhibits non-reproductive sexual behaviors, specifically same-sex sexual behaviors (SSSBs), is the long-tailed macaque (LTM). We observed SSSBs during our ecological and behavioral surveys of wild LTMs in Brgy. New Israel, Makilala, Philippines. We recorded multiple non-reproductive mounts (NRMs) among adult males with two detailed observations of anogenital contacts and ejaculations of the mounters. There are several hypotheses that may explain why these sexual behaviors are displayed by macaques (*e.g.* dominance assertion, social tension reduction, and inaccessibility of females); however, our observations could not be completely explained by these hypotheses due to our limited number of records. We recommend that more thorough research should be conducted to increase our understanding of the possible reasons behind the SSSBs of LTMs. (Author's abstract)

Keywords: *Animal behavior, Male-male mounting, Non-human primate, Philippines, Biology*

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NP

0033

Full Genome and Individual Gene Analysis for Evolutionary Patterns of Locally Circulating Rabies Virus in Davao City

Lagare, Arlene P. , Eng, Ma. Noreen J. , Bacus, Michael G. , Labrador, Christian C. , Buenaventura, Sheryl Grace C. , Marquez, Gloria N. , Murao, Lyre An

Disease surveillance remains a challenge in the Philippines due to its limited resources. Integration of genomic-based surveillance in the National Rabies Control Program provides additional insights into rabies virus (RABV) evolution and transmission dynamics and can, therefore, inform public health decisions. This pilot study used the previously reported 49 RABV sequences in Davao City and some neighboring provinces to evaluate the utility of targeted sequencing as an inexpensive alternative to whole genome sequencing. We applied different tree distance metrics to compare RABV whole genome (WG) and individual RABV genes. Phylogenetic trees reconstructed using IQTree2 and BEAST were used to compare differences in phylogenetic signals, tree topology, and evolutionary patterns. There were no significant differences in the phylogenetic signals of the three major clades

in the trees, with strong support values for sampling variance and underlying variances at the gene and site levels. A comparison of the Bayesian phylogenetic tree of WG and individual genes showed that there were no significant differences in the substitution rate and divergence time. Moreover, patristic distances (PDs) of all individual gene trees were positively correlated and congruent to the RABV WG of identical strains, with correlation values above 99%, which ruled out the possibility of missing out on relevant findings on evolutionary dynamics using only individual genes. Based on the results of our detailed genetic analyses, RNA-dependent RNA polymerase (L) and phosphoprotein (P) segments were identified as the best biomarkers to investigate the evolutionary analysis of locally circulating RABV variants in Davao City due to the close PDs of their trees relative to the WG. Less expensive options such as gene-based surveillance will enable the local government to trace and monitor the actual genetic diversity and spread of the virus, which could lead to the design and implementation of focused strategies. **(Author's abstract)**

Keywords: *Biology, Gene, Genomic surveillance, Rabies, Topology, Whole genome*

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0034

***Gomphonema* Species (Bacillariophyceae) from Marikina River, Rizal (Luzon), Philippines**

Peralta, Elfritzson M. , Ikeya, Tohru , Arguelles, Eldrin DLR. , Inoue, Harue , Ohtsuka, Taisuke , Martinez-Goss, Milagrosa R., Papa, Rey Donne S. , Okuda, No

A floristic study of the diatoms (Bacillariophyceae) along the Marikina River in the eastern part of Metro Manila, Philippines, recorded at least 140 species belonging to 39 genera. Of these genera, one of the greatest number of species was observed in the genus *Gomphonema* (18 species). These species were identified and described under the bright field light microscope. Some species were further observed under the scanning electron microscope. A habitat description of the occurrence of the *Gomphonema* species is given. Twelve (12) out of the 18 species are new records for the country: *G. brasiliense* subsp. *pacificum* Moser, Lange-Bertalot & Metzeltin, *G. chinense* Liu & Kociolek, *G. contraturris* Lange-Bertalot & E.Reichardt, *G. cuneolus* E.Reichardt, *G. exilissimum* (Grunow) Lange-Bertalot & E.Reichardt, *G. insigniforme* E.Reichardt & Lange-Bertalot, *G. javanicum* Hustedt, *G. kobayashii* Kociolek & J.C.Kingston, *G. pseudosphaerophorum* H. Kobayashi, *G. sundaense* E.Reichardt, *G. cf. qingyiensis* L-X Zhang, P. Yu & Q-M You, and *G. vibrio* var. *bohemicum* (Reichelt & Fricke) R. Ross. Hence, this paper reports a total of 44 species of *Gomphonema* from the Philippines, including previous studies from 1937 to date. **(Author's abstract)**

Keywords: *Biraphid and heteropolar diatoms, Gomphonema parvulum, Habitat description, River, Taxonomy, Biology*

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0035

Habitat Preference of *Aedes aegypti* and *Aedes albopictus*: A Case Study on Dengue Endemic Areas of Sumatera, Indonesia

Priawandiputra, Windra , Meidaliantisyah, , Solihin, Dedy D. , Hadi, Upik K. , Atmowidi,Tri , Nurjanah

Aedes aegypti and *Aedes albopictus* (Diptera: Culicidae) are vectors that cause dengue hemorrhagic fever. The cases of this disease have often become an extraordinary event in Bandar Lampung City, Indonesia. Therefore, this study aimed to analyze bioecological factors, *i.e.* habitat preference, larvae density, characteristics of the breeding sites, as well as the morphological and molecular identification of *Ae. aegypti* dan *Ae. albopictus* in dengue-endemic areas of Bandar Lampung. Results showed that the larval density of these vectors in three areas was moderate, and *Ae. aegypti* was found dominant. The Maya index (MI) values of *Ae. aegypti* showed moderate and low categories (87 and 13%), whereas those of *Ae. albopictus* were 91 and 9%, respectively. Seven and 11 characters of *Ae. aegypti* and *Ae. albopictus* has been described, respectively. Additionally, their COI gene sequence (size of 725 bp) similarity values ranged from 98–99%. Data from the study can be used in planning a control strategy and identifying the main priority areas for entomological surveys toward disease epidemic control. **(Author's abstract)**

Keywords: Bioecological, Breeding-sites, Density, Maya-index, Mosquitoes, Biology

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0036

Heavy Metal Concentrations in Mollusks and Crustaceans Harvested from Eastern Samar's Taft River in the Philippine and the Health Risks Posed to Consumers

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Heavy metal (HM) contamination from mining activities poses a health risk to humans who consume mollusks and crustaceans from mine-affected environments. One such example is the Taft River, which receives drainage water and sediments from the Bagacay mines in Samar, Philippines. To assess the accumulation of HM in mollusks and crustaceans and the associated risks to the humans, a comprehensive analysis was conducted on representative specimens, which were gathered from different sections of the river. The concentrations of Cu (97.67 mg kg⁻¹), Ni (29.30 mg kg⁻¹), Pb (0.59 mg kg⁻¹), and Sr (14.67 mg kg⁻¹) in the flesh of “bebe” (*Batissa violacea* Lamarck) were significantly higher than those in “tangili” (*Telescopium telescopium* Linn.), “tuway” (*Mercenaria mercenaria* Linn.), and “sihi” (*Nerita albicilla* Linn.); whereas for crustaceans, the flesh of mud crabs (*Scylla serrata*) contained higher concentrations of As (17.67mg kg⁻¹), Cu (118.67 mg kg⁻¹), Ni (25.79 mg kg⁻¹), Rb (31.33 mg kg⁻¹), Sr (60.67 mg kg⁻¹), and Zn (331.00 mg kg⁻¹) compared with giant freshwater prawns (*Macrobrachium rosenbergii*). The consumption of *T. telescopium*, *N. albicilla*, and *B. violacea* may result in an estimated daily intake (EDI) that is greater than the provisional tolerable daily intake (PTDI) for As [2.03–4.48 µg kg⁻¹ body weight (BW) d⁻¹], while all mollusks may have an EDI for Cr of between 124.59–136.23 48 µg kg⁻¹ BW d⁻¹. This may subsequently lead to a high target hazard quotient (THQ), high hazard index (HI), and high target cancer risk (TCR) for adults. With respect to crustaceans, the consumption of *S. serrata* exceeds the PTDI index for As. Both *S. serrata* and *M. rosenbergii* exceed the PTDI for Cr by 20–21 times, as well as the elevated health risk values of 22.36 and 28.57 48µg kg⁻¹ d⁻¹ for *M. rosenbergii* and *S. serrata*, respectively. Overall, current results indicate that human consumption of the Taft River mollusks and crustaceans may inadvertently lead to an increased intake of As and Cr that could negatively impact human health. **(Author's abstract)**

Keywords: Freshwater clams, Giant freshwater prawns, Health risk assessment, Mudcrabs, Biology

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Isolation of Nanocellulose by Enzymatic Hydrolysis of Bleached *Musa textilis* (Abaca) Pulp

Ramos, Rowena E. , Lapuz, Anniver Ryan P. , Lapuz, Rebecca B. , Delica, Kimberly M. , Balagot, Kim Wilmer M., Domingo, Emmanue

Nanocellulose is commonly isolated from cellulosic materials by chemical methods using strong acids. In this study, the enzymatic method was explored to isolate nanocellulose from commercial bleached S₂ grade *abaca* pulp. It was first disintegrated for 10 min and was subjected to enzyme hydrolysis while incubated with *Bacillus* sp. cellulase for 72 h at 50 °C and 120 revolutions/min. A clear liquid material was obtained after enzymatic hydrolysis after a series of centrifugation and ultrasonication. Results showed that the isolated nanocellulose had an average particle size of 375.9 nm ± 2.9 with a polydisperse index of 0.404 ± 0.059. Transmission electron and atomic force images showed that nanocellulose was longitudinal in size and highly aggregated and agglomerated. Through FTIR analysis, crystallinity indexes (*i.e.* lateral order index, total crystallinity index, and hydrogen bond intensity) of bleached *abaca* pulp and the isolated nanocellulose were compared. Results showed that the enzymatic hydrolysis of bleached *abaca* pulp resulted in higher cellulose crystallinity. Overall, nanocellulose can be isolated using biological methods using *Bacillus* sp. cellulase. These results could be used as a baseline to isolate smaller particle sizes, highly monodisperse, and stable nanocellulose that could be further applied in packaging, papermaking, cosmetics, medicine, and numerous other applications. (Author's abstract)

Keywords: *Abaca pulp, Bacillus sp., Cellulase, Enzymatic hydrolysis, Nanocellulose, Biology*

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Microbiological Water Quality of Lake Lanao Waters

Kabirun, Mariam C. , Amparado, Beverly B., Borosa, Nourshamsi

Studying microbiological water quality of a lake such as Lake Lanao is of primary importance especially when his body of water is used as a source of water for recreation, hygiene, domestic use and especially drinking purposes. Standard Coliform test was used to determine the most probable number of total coliforms and the presence of fecal contamination. Results show that the water samples collected from Lake Lanao from Bank up to 25 meters lakeward from Bacolod-Grande, Tamparan, Taraka, Tugaya, and Wato-Balindong, Lanao del Sur were unfit for drinking due to fecal contamination. Most probable number of these coliforms ranged from an average of 148.97 to 986.80 cells per 100 ml of water during the six sampling periods from June, September, and October 2016 until January, February, and March 2017. Fecal contamination and the presence of indicator bacterium, *Escherichia coli*, were noted in all the five selected sites of Lake Lanao, thus, non-potable water source. Boiling of water and well done cooking of fishery products from Lake Lanao must be done to prevent waterborne infections. (Author's abstract)

Keywords: *Microbial ecology, Water quality, Coliform test, Escherichia coli, Biology*

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NP

Molecular Data and Karyotype Revealed Two Distinct Species of Domesticated Water Buffaloes in the Philippines

Cao, Ernelea P. , Fontanilla, Ian Kendrick C. , Fontanilla, Francis L. , Servo, Emerson R. , Roño, John Gregor A. , Soliven, Nelvie Fatima Jane A. , Cuanang, Aivhie Jhoy E. , Paraguas, Alexander M. , Cailipan, Therese Patricia C., Villamor, Lilia

The six species of the genus *Bubalus* include the lowland and mountain anoa, Asian wild buffalo, tamaraw, swamp buffalo, and riverine buffalo. Few studies were conducted on the matrilineal phylogeny and genetic diversity of *Bubalus* species. In addition, there is controversy regarding the identity of the two domesticated water buffaloes in the Philippines – the introduced riverine and the native swamp buffalo. Thus, this study aimed to determine the genetic distance and phylogenetic relationship of *Bubalus* species using the mitochondrial cytochrome *b* (*cytb*) variation and to re-evaluate the taxonomic species designation of *Bubalus bubalis*. A total of 499 Philippine *cytb* sequences from this study ($n = 179$), as well as other Asian countries ($n = 319$) and *Syncerus caffer* ($n = 1$), from NCBI were included in the analysis. The highest interspecies genetic distance (d) (0.040) was between the tamaraw and lowland anoa, whereas the lowest genetic distance (0.020) was between mountain and lowland anoa. Moreover, the phylogenetic tree indicated 52 haplotypes that delineated three groups, including lowland anoa, mountain anoa, and tamaraw with two domesticated buffaloes. The latter group further separated into three species – tamaraw, riverine, and swamp buffaloes. The analyses of genetic distance, phylogeny, and median-joining network structure based on *cytb* confirmed that the swamp buffaloes from Occidental Mindoro and South Cotabato, Philippines belong to maternal lineage B. Karyotype analysis consistently confirms that riverine buffaloes possess 50 chromosomes, whereas swamp buffaloes have 48 chromosomes, aligning with previous findings. Moreover, the swamp and riverine buffaloes appear to be distinct species, with the swamp buffalo having a closer affinity to the tamaraw than to the riverine buffalo. We, therefore, propose to revive the species assignment of the *Bubalus kerabau* Fitzinger, 1860 as a distinct species to the swamp buffalo. Furthermore, a common maternal ancestry was confirmed between the tamaraw and two domesticated buffaloes – the swamp and riverine. Research findings provided valuable information on understanding and monitoring the matrilineal genetic diversity of the genus *Bubalus* toward conservation and management. (Author's abstract)

Keywords: *Bubalus arnee*, *Bubalus kerabau*, Chromosome, Cytochrome *b*, Tamaraw, Biology

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NP

0040

Molecular Detection and Prevalence of *Toxoplasma gondii* in Ready-to-eat Vegetables and Oysters in Central Luzon, Philippines

Obusan, Marie Christine M. , Villanueva, Ren Mark D. , Paraoan, Cielo E

Toxoplasmosis, a parasitic infection caused by *T. gondii*, may be considered as a neglected disease in the Philippines. Consumption of raw or undercooked cyst-containing meat and accidental ingestion of oocysts excreted in the environment are two of the main routes in acquiring the infection. In the Philippines, there is no comprehensive or updated information on the prevalence of *T. gondii* among human populations and as a food-borne pathogen. We detected *T. gondii* DNA in ready-to-eat (RTE) vegetables and oysters sold in markets in Central Luzon, Philippines using molecular method. Six (10%) out of the 60 collected vegetable samples tested positive through nested PCR amplification of B1 gene. As for the oyster samples, four (9.09%) out of the 44 collected pooled samples were positive for *T. gondii*. Phylogenetic analyses revealed all the DNA sequences retrieved from positive samples clustered with *T. gondii* with a virulent Type 1 genotype (accession no: KX270388). Further studies should be done to identify the exact genotypic profiles of the *T. gondii* detected in the vegetable and oyster samples to infer pathogenicity and possible sources of contamination. Our findings suggest possible transmission patterns of *T. gondii* oocysts as a potential health threat to consumers. (Author's abstract)

Keywords: *B1 gene, Food consumption, Nested PCR, Oocyst, Toxoplasmosis, Biology*

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NP

0041

Molecular Docking Analysis for Screening of Cyclooxygenase-2 Inhibitors from Secondary Metabolite Compounds of *Lactococcus lactis* subsp. *lactis* (Lac3)

Manguntungi, Andi Baso, Firdaus, Moh. Egy Rahman, Umami, Rifqiyah Nur, Mustopa, Apon Zaenal, Cahyani, Rafika Dwi, Arwansyah, Arwan

Inflammatory response plays important roles in both tumorigenesis and carcinogenesis. In this study, secondary metabolite compounds from *Lactococcus lactis* subsp. *lactis* (Lac3) were analyzed by LC-MS and the potential inhibition activity against the COX-2 receptor was screened through molecular docking and molecular dynamics (MD) analysis. Anti-inflammatory agents, mofezolac and ibuprofen, were used as positive control ligands. The result indicates a potential COX-2 inhibitor of 5-[(4-Amino-6-morpholin-4-yl-1,3,5-triazin-2-yl)amino]-2-methylbenzenesulfonate, which has a hydrogen bond on the active site Tyr385 of COX-2 with affinity energy of -9.0 kcal/mol. Moreover, another candidate of COX-2 inhibitor, designated as 3-Indolepropionic acid binds hydrogen on the important residue Ser530 of COX-2, with an affinity energy of -6.9 kcal/mol. To confirm the binding specificity, molecular docking analysis was also performed against COX-1. The binding stability and flexibility were confirmed using MD simulations. In addition, the toxicity and solubility of the potential ligands were predicted according to Lipinski's rules and BOILED-Egg modeling. The 5-[(4-Amino-6-morpholin-4-yl-1,3,5-triazin-2-yl)amino]-2-methylbenzenesulfonate shows the propensity for passive absorption through the gastrointestinal tract, whereas 3-Indolepropionic acid shows a high probability of blood-brain barrier penetration. In conclusion, this study identified potential compounds through molecular docking analysis which can be developed as COX-2 inhibitors. **(Author's abstract)**

Keywords: *Anti-inflammatory, Cyclooxygenase-2 inhibitors, Lactococcus lactis subsp. lactis (Lac3), LC-MS, Molecular docking, Molecular dynamics, Biology*

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NP

0042

Morphological and Molecular Diversity of Traditional Upland Rice (*Oryza sativa* L.) Varieties for Drought Tolerance at Seedling Stage

delacruz, Reggie Y., Baldo, Nenita B., Dalusong, Verna G., Suralta, Roel R., Domingo, Kim-Lee B., Abellera, Jorgen C., Jamago, Jo

Drought is considered the major threat and most damaging abiotic stress for rice production. However, some traditional upland rice varieties (TURVs) may have some forms of tolerance to various stresses compared to new elite varieties. Two experiments were conducted. Experiment 1 to determine the morpho-physiological response, phenotypic diversity, and similarity of 13 TURVs and 2 check varieties to mild drought stress at the seedling stage (Experiment 1 (E1)) and to determine the molecular diversity and genetic similarity of the genotypes using selected simple sequence repeat (SSR) markers (Experiment 2 (E2)). In E1, all TURVs were highly tolerant under mild drought stress for a physiological response. Standardized Shannon-Weaver Diversity Index (H') showed zero to

low phenotypic diversity for qualitative traits. However, the phenotypic diversity of quantitative traits ranged from moderate to high for well-watered conditions, low to high for drought conditions, and moderate to high for re-watered conditions. Cluster analysis through Ward's minimum variance based on pooled phenotypic data grouped the genotypes into three major clusters at 7 Euclidean distances. For E2, polymorphic information content values from 24 polymorphic SSR markers ranged from slightly informative (RM256) to highly informative (RM206), with a mean of 0.61. Nei's gene diversity mean was 0.62 and values varied from 0.26 (RM256) to 0.86 (RM206). Based on Jaccard's similarity coefficient, rice genotypes were grouped into nine minor clusters. The results indicate that TURVs harbor moderate to high allelic diversity and there are potential tolerance genes for mild drought stress that can be utilized in breeding programs for drought-tolerant rice varieties. (**Author's abstract**)

Keywords: *Climate change, Drought, Molecular diversity, Phenotypic diversity, Traditional upland rice, Biology*

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0043

Nanoemulsion of the Mixture of Citronella Grass Distillation Waste and *Piper aduncum* Essential Oil to Control *Spodoptera frugiperda* (Lepidoptera: Noctuidae)
Reflin, Ernís, Gustría, Nelly, Novri, Holeng, Henny Sonia Febrianty, Lina, Eka

Corn production in Indonesia is challenged by the attack of the new invasive pest fall armyworm (*Spodoptera frugiperda*, Lepidoptera: Noctuidae). This pest is known to be resistant to many synthetic insecticides. Botanical insecticide with nanoemulsion formulation is an option to solve this problem because it was relatively eco-friendly, and the various active components delay insect resistance and insect resurgence. The objectives of this research are to determine the characteristics of the nanoemulsion of the mixture of spiked pepper (*Piper aduncum*) and citronella grass distillate waste (*Cymbopogon nardus*) and to test the insecticidal activity of nanoemulsion against *Spodoptera frugiperda*. The nanoemulsion formulation is made with the spontaneous emulsification method. The leaf dipping technique is applied at the nanoemulsion toxicity test on *S. frugiperda* larvae. Then, the nanoemulsion formulation is analyzed with PSA and Zetasizer Nano Malyern to measure the particle size and zeta potential. The result of the research shows that the nanoemulsion of the mixture of citronella grass waste and *P. aduncum* fruit oil has insecticide activity with $LC_{50} = 0.53\%$. Additionally, it causes mortality and developmental delay in *S. frugiperda* larvae. The nanoemulsion particle is 273.1 nm. It has homogeneity and an even distribution. (**Author's abstract**)

Keywords: *Botanical insecticide, Fall armyworm, Integrated pest management, Nanoemulsification, Particle size, Biology*

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0044

People's Knowledge on Invasive Species: The Spread of Buyo-buyo (*Piper Aduncum*) in Marilog District, Davao City, Southern Philippines
Casinillo, Novy Grace, Condino, Melrose P., Dadang, Raquelyn J., Celeste, Bryan Lee D., Amoroso, Victo

This article focuses on the people's knowledge/perception of *Piper aduncum* (*buyobuyo*), an invasive plant species, that continue to spread in Marilog District, Davao City, Southern Philippines. To capture this data, we

utilized a descriptive research design through qualitative methods such as in-depth interviews, focus-group discussions, and field visits to areas which are heavily infested by *Piper aduncum*. Our findings reveal that participants' knowledge of *buyo-buyo* (*Piper aduncum*) comes from their grassroots accounts or personal exposure with *buyo-buyo*. Through constant interaction with *buyo-buyo*, majority of the respondents have observed the detrimental effects of *buyo-buyo* on their farms. But there is still a lack of relevant information regarding the management of invasive species in the area. There were also no control mechanisms on invasive alien plants species (IAPS) in the local communities. Overall, the findings reveal that there is a gap between the local and scientific knowledge on invasive species in general which plays a crucial implication on the biodiversity conservation. Therefore, this article pushes forward on facilitating public awareness in the district and cultivate active participation in the community to achieve a well-informed and sustained biodiversity conservation efforts. **(Author's abstract)**

Keywords: Optimization, Shelf-stable, Custard, Response surface methodology, Heat penetration, Biology

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NP

0045

Phenotypic and Genotypic Characterization of the Virulence Factors and Antimicrobial Resistance of Enterobacteriaceae Isolates Associated with Clinical Mastitis in Dairy Cattle

Perez, Rodney H. , Ancuelo, Am

Mastitis is a prevalent disease in dairy cattle. One of its important etiological agents is the species belonging to the Enterobacteriaceae family. Thus, this study aims to characterize the virulence and multi-drug resistance (MDR) profiles of Enterobacteriaceae strains previously isolated from dairy cattle with clinical mastitis in Region 4-A, Philippines. Results showed that 60% of *Klebsiella pneumoniae* and 100% of the Proteeae tribe (*Proteus* spp., *Providencia* spp., and *Morganella* spp.) exhibited hemolytic activity. Hemolysin-coding gene, viz. hpmA, was suspected to contribute to the hemolytic activity of all *Proteus* spp. Biofilm formation was observed in several isolates and *mrkD*, *ireA*, *ucaA*, *atfA*, and *ureG* genes were expected to be accountable for this virulence trait. All Enterobacteriaceae strains were classified as MDR pathogens. All isolates exhibited resistance to erythromycin, penicillin, clindamycin, and lincomycin. Resistance to streptomycin and tetracycline was also exhibited by a significant number of isolates and the resistance genes (*rrs* and *tetK*) responsible for this resistance were most frequently detected. Only one isolate of *M. morganii* harbored integron-related gene *intI2*. The characterization of these strains has significant health and economic implications. Severe virulence and drug resistance of these strains pose a challenge in the management and treatment of intramammary infections in dairy farms. Being reservoirs of antimicrobial resistance-associated genes, these strains pose a threat to the food chain. **(Author's abstract)**

Keywords: Bovine mastitis, Dairy cattle, Enterobacteriaceae, Virulence, Antimicrobial resistance, Biology

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0046

Phylogenetic Placement of the Philippine Cockatoo *Cacatua haematuropygia* (P.L.S. Muller 1776) Based on a Partial Mitochondrial Genome

Widmann, Dayang L. , WidmannIndira, Peter , Fontanilla, Ian Kendrick C. , Que, Gerard Clin

An 18,493 base pair mitogenome of the Philippine Cockatoo (*Cacatua haematuropygia*) is presented, containing 13 complete protein-coding genes, two rRNAs, 24 tRNAs, two control regions, and two partial duplicate copies of *cytb* and *nd6*. The mitogenome contains two complete copies of tRNA-Leu, tRNA-Ser, tRNA-Thr, and tRNA-Pro. Phylogenetic analysis places the Philippine Cockatoo within the subgenus *Licmetis*, with its closest relatives being the Tanimbar Corella (*Cacatua goffiniana*) and the Western Corella (*Cacatua pastinator*) and all three species being sisters to other white cockatoos in the subgenus *Cacatua*. The gene order and content of the mitogenome are most similar to *C. pastinator*, containing a partial duplication of *cytb*, and whole duplications of the control region and several tRNA genes. However, the total duplication of *nd6* could not be verified. Analysis of the control regions indicates that these are paralogs of each other; both copies contain preserved features such as the Extended Termination Associated Sequences 1 and 2 (ETAS1, ETAS2) and Conserved Sequence Block 1 (CSB1) associated with d-loop or control region replication in mitogenomes. Gene order for the species cannot be verified since the region corresponding to duplicate copies of tRNA-Glu and *nd6* in other cockatoos could not be properly sequenced. (Author's abstract)

Keywords: Philippine Cockatoo, Mitogenome, Gene duplication, Phylogeny, Biology

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(Filipiniana Analytics)
NP

0047

Potential of Indigenous Rhizobacteria as Biocontrol Agents of *Xanthomonas* sp.

Siregar, Bayo A. , Tjahjono, Budi , Puspita, Fifi , Marfungah, Siti, Gafur, A

Bacterial leaf blight (BLB) disease caused by *Xanthomonas* sp. is one of the main diseases of eucalypt plants. The utilization of rhizobacteria to manage diseases in other agricultural ecosystems has been reported. This study aims to select and characterize rhizobacteria from the rhizospheric zones of *Eucalyptus pellita* with antagonistic nature against *Xanthomonas* sp. and to identify isolates that have the best potential as biocontrol agents in the Eucalyptus–*Xanthomonas* pathosystem. The research was conducted in-vitro. The antagonism test was arranged in a completely randomized design with three replications. Characteristics of antagonistic rhizobacteria were examined based on their ability as plant growth-promoting bacteria (PGPR). Identification of potential rhizobacteria was performed based on 16S rRNA sequences. There were 14 isolates showing antagonistic activities against *Xanthomonas* sp. The results showed that the rhizobacteria had significant antagonistic impacts against the pathogen. Characterization of the 14 isolates indicated that all isolates produced siderophores and indole acetic acid (IAA). As many as 13 isolates produced protease, eight isolates were able to dissolve phosphate, and three isolates synthesized hydrogen cyanide (HCN). The isolate with the highest inhibitory effect was isolate RE081, whose activity was classified as very strong. The RE81 isolate also showed the best properties in the HCN test (+++), IAA production (19,29 mg L⁻¹), and the ability to dissolve phosphates. Molecular analysis of the 16S rRNA gene disclosed that RE81 is *Pseudomonas aeruginosa* (100%). (Author's abstract)

Keywords: 16S rRNA gene, Characteristic, Identification, *Pseudomonas aeruginosa*, Biology

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NP

Potential of Red, Brown, and Green Macroalgae from Dato Beach, Majene, Indonesia as Natural Food Preservative

Manguntungi, Baso, Ariandi, Nurdin, Gaby Maulida, Sari, Arlinda Puspita, Mustopa, Apon Za

Macroalgae is one of the natural resources present in Indonesian coastline areas – specifically in Dato Beach, Majene, South Sulawesi. The abundance of macroalgae found in Dato Beach can be utilized in various sectors – including health, cosmetics, and food. The aim of this study was to investigate the secondary metabolites of three types of macroalgae in Dato Beach and their potential to inhibit the growth of pathogenic bacteria in food. The three macroalgae utilized in this study were *Turbinaria decurrens* (brown algae), *Galaxaura rugosa* (red algae), and *Halimeda opuntia* (green algae) representing the three groups of macroalgae based on their dominant pigments. Four types of pathogenic bacteria – namely, *Staphylococcus aureus* and *Bacillus cereus* as Gram-positive bacteria plus *Salmonella typhi* and *Escherichia coli* as Gram-negative bacteria – were collected from the Biology Laboratory at Universitas Sulawesi Barat, as these bacteria are commonly responsible for food spoilage. The study began with a sampling of macroalgae, followed by cleaning and drying, and subsequently extraction using methanol as the solvent. Methanol was chosen as the universal solvent for its ability to extract both polar and nonpolar components. Phytochemical screening was carried out to test for the presence of flavonoids, steroids/terpenoids, and alkaloids, which represent the three groups of secondary metabolites. The antimicrobial test was carried out using the well diffusion method, as a control used 80 ppm of ampicillin. The results of the study indicated that *T. decurrens* contains flavonoids, steroids, and alkaloids, *G. rugosa* contains flavonoids, terpenoids, and alkaloids, whereas *H. opuntia* only contains terpenoids and alkaloids. Furthermore, *G. rugosa* was found to have the best ability to inhibit bacteria, with an inhibition zone ranging from 22–23 mm; in some treatments, the diameter of the inhibition zone was even larger than the positive control. *T. decurrens* was only effective in inhibiting the growth of *S. aureus*, whereas *H. opuntia* demonstrated the potential to inhibit the growth of *S. aureus* and *E. coli*, and for *B. cereus* and *S. typhi*, it could only be inhibited by 100% (1000 µL) extract of the *H. opuntia* extract. (Author's abstract)

Keywords: Antimicrobial, Macroalgae, Majene, Natural preservative, Secondary metabolite, Biology

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New Records of *Podontia quatuordecimpunctata* (L.) (Sineguelas Leaf Beetle) (Chrysomelidae: Galerucinae: Alticini) on *Spondias* spp. (Anacardiaceae) and Its Geographic Distribution in the Philippines

Serquina, Albert A., Alvarez, Flora C., Recuenco, Monalisa O., Gallegos, Madora Abril D., Zulueta, Brian Joseph S., Staines, Charles L., Anabo, Rachel Ann A., Calcetas, Orlando A., Adorada, J

Podontia quatuordecimpunctata (L.) or the “sineguelas” leaf beetle is reported from the Philippines. Red sineguelas (*Spondias purpurea* L.), golden apple or yellow sineguelas (*S. dulcis* Forst.), and hog plum or “libas” [*S. pinnata* (L.f.) Kurz.] are reported as host plants. However, feeding on *S. philippinensis* (Elm.) and *S. mombin* L. (hog plum) are unverified. The current geographic distribution and pest status of *P. quatuordecimpunctata* are presented. (Author's abstract)

Keywords: Flea beetle, Insect pest, Leaf beetle, Sineguelas, Biology

First Report of *Hedychium flavescens* Carey ex Roscoe (Zingiberaceae) in the Philippines

Adriane B. Tobias, , Dargantes, Kent Sean Alan T. , Mendez,

During expeditions in the province of Bukidnon, southern Philippines, populations of *Hedychium flavescens* Carey ex Roscoe – a major plant invader in New Zealand, Hawaii, and La Réunion – were documented. This paper formally reports the presence of *H. flavescens*, an escaped species with invasive potential in the country. The species was recorded in the municipalities of Impasug-ong and Maramag in Bukidnon in 2018 and 2020, respectively. *H. flavescens* is the third species of *Hedychium* in the Philippines, adding to the two previously known species – namely, *H. coronarium* Koenig and *H. philippinense* K.Schum. Information on its distribution, habitat and ecology, phenology, colored photographs, and key to different species of *Hedychium* in the Philippines are provided in this paper. **(Author's abstract)**

Keywords: *H. philippinense, Hedychieae, Invasive species, New record, Terrestrial Hedychium, Biology*

Review on the Use of Arbuscular Mycorrhizal Fungi in Bioremediation of Heavy Metal Contaminated Soils in the Philippines

Trocio, Dominique Ysabel C., Paguntalan, Dian

Heavy metal (HM) contamination is a global issue characterized by high concentrations of HMs beyond safe and tolerable standards. Plants may receive the brunt of their toxicity due to physiological uptake mechanisms and extreme consequences, leading to plant growth and yield impairment, plant parts system translocation, and eventually plant death. The introduction of these HMs into the food web may occur if not treated. Arbuscular mycorrhizal fungi (AMF) treatment can potentially pose as a biological method to reduce HMs in local terrestrial soils. They are popularly known to enhance plant growth and yield and fortify plant resistance to biotic and abiotic stresses. AMF has also been extensively probed to protect plants against the effects of HM toxicity. Through the systematic collection and summarization of multiple reliable scientific articles, this review reports that AMF are capable of alleviating HMs from the soil through various plant-assisted mechanisms. In this study, information on the current status of HM contamination in the country and the role of AMF as a sustainable tool to address this problem is explored. While increasing metal uptake, they are also able to improve plant metal stress tolerance by acting as a buffer, increasing the “dilution effect,” chelating HMs, and sequestering HM ions in their hyphal cells. In the Philippines, there is little knowledge of the status of HM contamination in the soil, but the majority of the studies reported HM contamination in multiple sites. Therefore, there is a need for the implementation of biological solutions such as the use of AMF, as well as further investigation of the outcomes of this innovation in different laboratory and field conditions. **(Author's abstract)**

Keywords: *Arbuscular mycorrhizal fungi, Bioremediation, Soil heavy metal, Biology*

Seaweed Fish Baits in Bulusan, Sorsogon, Philippines

Laza, Benilda O. , Mintu, Cynthia B. , Ruiz, Caesar Franz C. , Olipany, Ruby D. , Bailon, Jinky D. , San Pablo, Mae H. , Himor, John Peter A. , Legarde, Ferlyn G. , Malto, Aireen D. , Belgica, Teresa Haide R. , Calaminos, Franklin P. , Longavela, Mabelle R. , Orgela, Elden G. , Malto, Mark Ariel D. , Dumilag, Richard V., Mendoza, Lynn

Little attention has been directed toward the local use of seaweeds as fish baits despite their relevance to the success of fishing operations. Fish baits represent little more than a subset of the major local use of seaweeds in the Philippines. In Sorsogon, Bulusan has a history of smallscale fishing with three traditional fishing gears – namely, fish pot, hook and line, and long line. In this study, we provide traditional knowledge on the selection of seaweeds as fish baits among fishers in Bulusan. Currently, the traditional fishing practice in the area retains the use of nine seaweed fish bait taxa – namely, *Acanthophora spicifera*, *Euचेuma denticulatum*, *Gracilaria gigas*, *Kappaphycus alvarezii*, *Sargassum polycystum*, *Ulva clathrata*, *Ulva flexuosa*, *Ulva lactuca*, and *Ulva reticulata*. The last four species (collectively known as the ulvoids) were the most familiar seaweed fish baits. Eleven (11) target fish species were identified, being *Naso* and *Siganus* as the most dominant genera. Additional 22 species (17 fishes and five non-fishes) were recognized as incidental catch. We found that critical approaches take part in the continued construction of the contemporary Bulusanon fishing culture, particularly in knowledge about seaweed fish baits. The traditional fishing practice in Bulusan draws our attention to discuss caveats on its possible impact on marine environments, particularly in the light of overfishing and coral-algal phase shifts. Aspects of ethnobiological resources documented in this study may provide a framework for attaining sustainable fishery management, alongside preserving knowledge of the local old hands. **(Author's abstract)**

Keywords: *Ethnobotany, Hook and line, Fishing management, Fish pots, Long line, Sargassum polycystum, Ulvoids, Biology*

Synoptic Review of *Stenobrimus* Redtenbacher, 1906 (Phasmatodea: Heteropterygidae: Obriminae), with the Description of a New Species from the Cavinti Karst Landscape, Laguna, Philippines

Alviola, Marnelli S. , Taray, Kirk J. , Abenis, Kristine O. , Barrion-Dupo, Aimee Lynn A. , Lucañas, Cristian C. , Eusebio, Orlando L. , Lit, Jr., Ireneo L., Naredo, Jeremy Carl

The unique Philippine spiny stick insect genus *Stenobrimus*, was reviewed. One new species, *S. pilipinus* Eusebio, Lit & Lucañas, sp. nov., is described from the forest over limestone outside the Cavinti Underground River and Cave Complex (CURCC) in Cavinti, Laguna Province. *S. pilipinus*, sp. nov., is unique among *Stenobrimus* species in having post-median mesonotal spines in both males and females. Its morphologically nearest congeners, *S. bolivari* Redtenbacher and *S. tagalog* Rehn & Rehn, are redescribed. The distribution of the genus in relation to karst forests and the historical biogeography of the Philippines is briefly discussed. Revised keys to the identification of *Stenobrimus* species for males, females, and eggs are presented. **(Author's abstract)**

Keywords: *Cave and karst landscape, Karst forest arthropods, Slender spiny stick insects, Biology*

Taxonomic and Nomenclatural Notes on Philippine Ferns. VI. *Asplenium lepturus* and *A. contiguum* (Polypodiales, Aspleniaceae), One or Two Species?
Salgado, Arthur

The present study clarifies the existing confusion between the Southeast Asian–Malesian *Asplenium lepturus* and the Hawaiian *A. contiguum*. The geographical range of both species is reported. Eleven (11) European and North American herbaria were visited by the author, and virtual collections of eight more herbaria were consulted. A morphological comparison of the size, shape, color, and dissection of the rhizome, scales, fronds, pinnae, apical segment, and sori was studied using light and dissecting microscopes. *A. lepturus* and *A. contiguum* are different species that can be distinguished by the size of the frond of fully developed plants, their different scales, the dentation of the pinna margin, the shape and length of the pinna apex, and sori position. *A. lepturus* is reported as a new Hawaiian species different from *A. contiguum*. *A. lepturus* is found in the Hawaiian Archipelago, south China, Laos, Vietnam, Philippines, and Sulawesi. *A. contiguum* is endemic in the Hawaiian Archipelago. (Author's abstract)

Keywords: *Hawaii endemics, Marginal teeth, Pinna margin, SE Asian pteridophytes, Biology*

Teratogenicity of Dibutyl Phthalate and Polyvinyl Alcohol in Early Developmental Stages of *Danio rerio*

Barrera, Jr., Wilfredo B. , Carag, Harold M. , Asnan, Louise Angeli , Navalán, John Vinc

Dibutyl phthalate (DBP) and polyvinyl alcohol (PVA) are commonly used in manufacturing petroleum-based and biodegradable plastics. Despite being regarded as safe, these chemicals persist as organic pollutants during plastic degradation in aquatic environments and, thus, may pose risks to aquatic organisms and even humans. We performed a 96-h zebrafish embryo test to investigate the toxicity and teratogenicity of DBP and PVA at 25–500 µg/L and 1–3.0% concentrations, respectively. The results showed that exposure to DBP and PVA reduced the survival rate of zebrafish in a concentration and time-dependent manner. In PVA, pericardial edema and heart abnormalities were more common malformations than yolk sack edema and tail deformities in DBP. Reduced body length and hatching rate and elevated heart rates at 400–500 µg/L concentrations were observed in DBP-exposed zebrafish. The same trend was observed in PVA except that decreased heart rate was observed with increasing concentrations. We conclude that DBP and PVA are lethal and teratogenic, even at low concentrations, thus posing questions and concerns about the safety and health, environmental, and ecological risks associated with the use of these chemicals. (Author's abstract)

Keywords: *Environmental toxicology, Embryotoxicity, Induced developmental malformation, Plastic pollution, Teratogenicity, Zebrafish embryo test, Biology*

Threatened and Endemic Flora and Fauna From Mount Agad-Agad, Iligan City, Southern Philippines

Nobleza, Jovina C. , Patano, Jr., Romeo R. , Maglangit, Erl Pfian T. , Mohagan, Alma B. , Coritico, Fulgent P. , Guiang, Maria Melanie M. , Amoroso, Victor B., Nuñez, Olga

The island of Mindanao where the Province of Lanao del Norte is situated is rich in biological diversity. Most plants and animals on this island are endemic—naturally occurring and are found nowhere else in the world. Despite the wealth of biodiversity studies, no known information has yet been formally published on the flora and fauna of Iligan City, a metropolitan area in the province of Lanao del Norte. This study, therefore, presents the endemic as well as the threatened plants and animals that were documented on Mount Agad-Agad in Iligan City. Mount Agad-Agad is an ecologically important massif, and a popular hiking and recreational destination. Floristic and faunistic surveys were conducted using standardized sampling methods. A total of 151 species of threatened and endemic flora (N = 60 species) and fauna (N = 90 species) were found to thrive in this lowland habitat. Although these species are important conservation targets, regional and Mindanao island endemic, the results of the study indicate that the overall species diversity in Mount Agad-Agad is a significant biodiversity hub for this metropolitan area. The protection and conservation of this biologically important mountain are, therefore, highly recommended. **(Author's abstract)**

Keywords: *Biodiversity, Conservation, Lanao del Norte, Mindanao island, Local conservation area, Biology*

Tiny and Everywhere: Microplastic Density and Distribution in Sediments along the West Coast of Lombok Island, Indonesia

Abiyusfi Ghafari, Muhammad Irsyad, Fitrianti

Microplastics have recently received high global attention, as their widespread presence can potentially cause physical and toxicological risks to organisms. The west coast of Lombok Island in Indonesia has a high potential for microplastic accumulation; even so, its presence in this area was not well studied. Therefore, this study aimed to describe the distribution and density of microplastics within the sediments on the west coast of Lombok. Microplastic sampling had been carried out in the northern, middle, and southern portions of the west coast of Lombok based on distinct geographical and vegetational characteristics. Sediment samples were taken within the HTL (High Tide Line) zone based on the excavation depths categories, *i.e.* A (0–2 cm), B (2–4 cm), C (4–6 cm), D (6–8 cm), and D (8–10 cm). The sediment samples were filtered using an aluminum sieve with a mesh size of 4.75 mm, targeting microplastic pieces below that size. A total of 16,685 microplastic debris were found distributed horizontally and vertically throughout the station. There was a significant difference in the microplastic density distributed between stations [$F(10,22) = 6.96, p < 0.001$] and between sediment depths [$F(10,44) = 9.07, p < 0.001$]. The order of average microplastic concentration was southern > northern > middle stations group. The highest microplastic number recorded in SMP11 (southern station, open bay, high anthropogenic activity, with river and primary mangrove vegetation) was as many as 2,361 (density, $D = 125,920.00 \pm 204.33$ items/m³),

whereas SMP01 (northern station, open bay, low anthropogenic activity, and with river and secondary mangrove vegetation) had the lowest microplastic number of 678 ($D = 36,160.00 \pm 72.82$ items/m³). In general, the majority of microplastics (45.76%) were distributed on the sediment surface (A–B), where there was a repeating pattern in the difference of microplastic density fluctuations of about 3% at every 4 cm of sediment depth (B–C and D–E), which is thought to be driven by daily tidal fluctuation. There was no clear pattern that indicated whether the specific type of shoreline or the presence of rivers and mangroves had an influence on the level of microplastic accumulation. However, the southern stations group had a considerably higher average of microplastic accumulation. We suspect that the geographical position towards the main ocean current contributes greatly to the microplastic accumulation at the site. **(Author's abstract)**

Keywords: *Debris accumulation, Lombok Island, Main ocean current, Microplastic., Sediment profile, Biology*

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0058

An Updated Inventory and Habitat Association Analysis of the Non-avian Vertebrates of the University of the Philippines (UP) Diliman

Navarra, Nappy L. , Gan, Jelaine L. , Solidum, Geoffrey Jules N. , Pasumbal, Jr., Ro

An inventory of the non-avian terrestrial vertebrate species found within the 493-hectare land area of the UP Diliman campus is presented. Visual encounter surveys for amphibians and reptiles, as well as mist-netting and trapping for mammals, were conducted last August 2019 to early February 2020 on selected study grids on campus. To determine habitat associations, the species richness of each vertebrate class (i.e., amphibia, reptilia, and mammalia) was analyzed with habitat characteristics of the grid using regression analysis. Based on the surveys and recent records (2015 onwards) in literature, a total of 33 species were recorded: seven amphibians, 15 reptiles, and 11 mammals. Comparison with historical records from 1998 revealed that an additional two amphibian species, seven reptile species, and six mammalian species have been sighted within the area since 2015. However, a fork-tongued frog, falling under the genus *Fejervarya*, and four reptilian species that had previously been recorded within the study sites were not observed. Habitat association analysis revealed that building area is correlated with species richness, with reptilian species richness being positively correlated with it. Overall, this study shows that the UP Diliman campus supports considerable urban biodiversity despite recent developments. **(Author's abstract)**

Keywords: *Urban biodiversity, Amphibian diversity, Reptile diversity, Mammal diversity, Biology*

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NP

0059

Vulnerability Assessment of Emerging Infectious Diseases in Davao City, Southern Philippines: Utilizing Global Predictors to Develop Localized Interventions

Dela Torre, Von Carlo P. , Estaña, Leo Manuel B. , Ligue, Kim Dianne B. , Evangelio, Sheryln A. , Bernido, Jan Danelle A. , Bacus, Michael G. , Damgo, Marie, Murao, Lyre Anni E. , Alviola, IV, Pedr

Emerging infectious diseases (EIDs) – influenced by socioeconomic, environmental, and ecological factors – pose a significant threat to both global economies and public health. Multiple EIDs have emerged in the 21st century,

including the current coronavirus disease (COVID-19) pandemic associated with a novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV2). Understanding the factors contributing to the emergence of EIDs is crucial for mitigating its risks and preventing disease outbreaks that could escalate into epidemics and pandemics. Thus, this study developed a scoring index that could estimate the vulnerability of an area concerning the emergence of novel EIDs using established global predictors – which include socio-economic and demographic factors (population density, housing, and business permits), weather variables (humidity, precipitation, and temperature), animal hosts (livestock and domestic animal populations), and wildlife-livestock-human interfaces (wet markets, urban green spaces, and commercial animal farms). Davao City, located in the Southern part of the Philippines, was used as a study site, wherein its *barangays* represent the smallest unit of geopolitical communities. *Barangays* vulnerable to EIDs were determined based on the resulting EID index. Clustering of vulnerability index scores across communities was identified using the Global Moran's I and Getis-Ord General G statistic. The Getis-Ord G_i^* and Anselin Local Moran's I were then used to identify the hotspot *barangays* most vulnerable to EIDs. The most vulnerable areas to EIDs were *barangays* with larger urban green spaces and a higher number of commercial animal farms and wet markets in Davao City. These most vulnerable *barangays* were also clustered and located in the districts of Toril, Tugbok, and Calinan. Hence, an appropriate basic action plan for these most vulnerable *barangays* should be provided. Moreover, policies related to wildlife management and urban planning should be revisited, with emphasis on mitigating the risks (i.e. infectious disease surveillance, zoning, animal biosecurity, and sanitation and hygiene) associated with EIDs while giving equal importance toward maintaining a stable local economy. **(Author's abstract)**

Keywords: *Emerging infectious disease, Hotspot analysis, Urban green spaces, Vulnerability index, Wildlife-livestock-human interfaces, Biology*

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CHEMISTRY

0060

Antimitotic and Antigenotoxic Activity of Calabash (*Crescentia cujete*) Fruit and Leaf Extracts on Mongo (*Vigna radiata*) seeds and *Allium test* *Tantiado, Rey G, Naldoza, Mark Lorenz A., Ayudante, Angelie*

Calabash tree (*C. cujete*) is a flowering plant indigenous in the Philippines and used as a traditional medicine. The study aimed to assess the effects of fruit and leaf extracts from Calabash (*C. cujete*) on the percent inhibition, chromosomal aberrations, mitotic index and percent germination of the onion (*Allium cepa*) cell division and mongo seed (*V. radiata*) germination exposed to sodium azide (NaN₃). *Allium* assay was used to determine the mitotic index and chromosomal aberrations with 400 mg/L *C. cujete* fruit and leaf extracts concentrations. The *Crescentia cujete* fruit extract exhibits more antimitotic and antigenotoxic potential compared to the leaf extract based on the mitotic index and frequency of chromosomal aberrations in the onion root cells. Thus, the fruit extract contains more phytochemicals compared to the leaf extract. **(Author's abstract)**

Keywords: *Allium, Crescentia cujete, Genotoxicity, Germination, Mitosis, Chemistry*

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0061

Chalcone Derivatives with Cyclooxygenase Inhibiting Activity

Tambago, Gian Carlo V., Amor, Evangeline C

Dimethylcardamonin (DMC) or (*E*)-2',4'-dihydroxy-6'-methoxy-3',5'-dimethyl chalcone was isolated from *Syzygium samarangense* (Blume) Merr. leaves using vacuum liquid chromatography and normal phase silica-gel column chromatography. DMC was purified from the fraction that eluted out of 9:1 (v/v) hexane: ethyl acetate to 7:3 (v/v) hexane: ethyl acetate. Using a modified method from Geissman (1948), DMC was derivatized via alkaline peroxidation from which compounds A and B were obtained. Compound A was identified to be (2*S*)-7-hydroxy-5-methoxy-6,8-dimethyl flavanone (C₁₈H₁₈O₄) while B had a methoxy group on its 4' position instead of a hydroxyl group with respect to DMC. The flavanone derivative may have been formed due to substituent effects on the ring.

DMC, A, and B were tested for their inhibitory activity against cyclooxygenase enzymes at 10 and 100 ppm. A and B gave at least 50% inhibitory activity at 100 ppm and were found to be COX-2 selective inhibitors. DMC was inactive at both 10 and 100 ppm. **(Author's abstract)**

Keywords: *Dimethylchalcone, Flavanone, Syzygium samarangense, Alkaline peroxidation, Cyclooxygenase inhibition, Chemistry*

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0062

Characteristic Metal Marker of Non-exhaust PM₁₀ Vehicular Emissions in Cebu City, Philippines

Villega, Lora Mae G., Gabrillo, Shaira L., Alburo, Rosa

Non-exhaust vehicular emissions are becoming a focus of research due to their increasing contribution to air pollution and its health effects. The characterization of this emission using Fe, Cu, Mn, and Zn as possible metal markers and expression of metal ratios was tackled in this study. The metal concentrations in ambient air present as PM₁₀ of Cebu Business Park (CBP) in Cebu City, Philippines were obtained from January–November 2016 and were characterized for trace metals. The filters were digested, and metal concentrations were analyzed using flame atomic spectroscopy *via* an external calibration method. The average concentration of Fe at 0.3975 µg/m³, Cu at 0.1191 µg/m³, Zn at 0.1228 µg/m³, and Mn at 0.0178 µg/m³. Subsequently, the metal concentrations were correlated with each other. The Fe and Zn presented a significant correlation with *r* = 0.927. Enrichment and roadside enrichment factors between the sampling site and the urban background revealed that the metals were from vehicular activity. The wear and tear of vehicular tires are identified as the source of the non-exhaust vehicular emission from the average slope of the regression line between Fe and Zn concentration in air filters is 30.1. It was also noted that the slope obtained during the wet season is approximately half that of the dry season. This study recommends further investigation using other metals to identify source fingerprints for future source apportionment studies to support the crafting of legislation to abate the non-exhaust component of vehicular emissions. **(Author's abstract)**

Keywords: *Cebu, Metal markers, Non-exhaust vehicular emissions, PM₁₀, Chemistry*

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Chemical Composition and Antioxidant Activity of Ethanol Extracts Obtained from Lavender (*Lavandula angustifolia* Mill.)

Vasileva, Ivelina N. , Ivanov, Ivan G. , Petkova, Nadezhda T. , Hambarliyska, Ivanka P. , Marovska, Gergana. I., Slavov, Anto

The objectives of the present study were focused on the comparative study of lavender (*Lavandula angustifolia* Mill.) raw material and its essential oil industry by-products. The potential of the by-products as a natural source of bioactive polar and nonpolar compounds suitable for applications in the food, cosmetic and pharmaceutical industries was investigated. Four lavender samples were studied – three by-products from industrial steam distillation (L-SD20 M, L-SD21 M, and L-SD21 Z) and one raw untreated lavender (L-UNTR21 Z) – and their chemical composition and antioxidant capacity were determined and compared. Nine phenolic acids (gallic, protocatechuic, chlorogenic, caffeic, syringic, p-coumaric, ferulic, salicylic, and rosmarinic acids) and five flavonoids [(+)-catechin, (–)-epicatechin, rutin, hesperidin, and quercetin] were detected in the 70% ethanolic extract of L-SD20 M. The highest amount of phenolic compounds at 16.08 ± 0.38 mg gallic acid equivalents/ g dry weight (dw) were found in the L-SD21 Z 70% ethanolic extract. L-SD21 M 70% ethanolic extract was distinctive with the highest amounts of flavonoids at 3.89 ± 0.44 mg quercetin equivalents/ g dw. The antioxidant capacity of the extracts was evaluated by four methods: radical scavenging activity of 2,2 diphenyl-1-picrylhydrazyl (DPPH assay), ABTS [2,2'-azino-di-(3-ethylbenzthiazoline sulfonic acid)], ferric reducing antioxidant power (FRAP), and cupric ion reducing antioxidant capacity (CUPRAC). The highest antioxidant activity by the CUPRAC method was observed in the 70% ethanolic extract of L-SD21 M – 326.49 millimoles Trolox equivalents/g dw. The major aroma constituents found in the 70% ethanolic extracts of L-UNTR21 Z were linalyl acetate and linalool at 38.64 and 7.89%, respectively. τ -muurolol, an oxidated sesquiterpene, was also found in high amounts in the 70% ethanolic extracts from lavender by-products. Therefore, lavender and its industrially generated by-products could represent a promising source of biologically active and aroma compounds with potent high antioxidant activity. **(Author's abstract)**

Keywords: Antioxidant activity, By-products valorization, *Lavandula angustifolia* Mill., Polyphenols, Water-alcoholic extract, Chemistry

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Evaluation of Low Molecular Weight Bis-Urea Derivatives as Antimicrobial Agents

Paderes, Monissa C. , Genio, Frances Abyg

Antibiotic resistance against common microbes is an ongoing concern worldwide. This warrants continuous studies that aim to discover new compounds with antimicrobial properties. In this study, sixteen low molecular weight bis-urea derivatives were screened for their *in vitro* antimicrobial properties using agar well diffusion method. The structure of the bis-urea compounds is comprised of cyclic and aromatic linkers and a variety of symmetric end groups such as aliphatic chains and heteroaromatic groups. Significant antimicrobial activity against strains of *Escherichia coli*, *Staphylococcus aureus*, and *Klebsiella pneumoniae* was observed for compounds with long aliphatic chains compared to those with benzyl and heteroaromatic end groups. Further studies on the minimum inhibitory concentration and cytotoxicity can aid in the development of these compounds as antimicrobial agents as well as for other possible biomedical and environmental applications. **(Author's abstract)**

Keywords: Antimicrobial activity, Bis-urea derivatives, Agar well diffusion, Antimicrobial agents, Chemistry

Evaluation of Phytochemicals, Total Phenolic Content, Antioxidant, and Antimicrobial Activities of Philippine Forest Woody Vines

Bisana, Grace Rowena B. , Ramos, Rowena E. , Delica, Kimberly M. , Lapuz, Rebecca B. , Balagot, Kim Wil

Woody vines are herbaceous plants that use different clinging structures to find vertical support from nearby trees. They are commonly used for handicraft purposes but there were reports that they were used for medicinal applications. With this, the stems of eight forest woody vine species were evaluated for their phytochemical components, total phenolic content, antioxidant, and antimicrobial activities. These were *Strychnos minor* Denrst. (“balakbakin”), *Arcangelisia flava* (L.) Merr (“alotra”), *Merremia peltata* (L.) Merr. (“bulakan”), *Hypserpa nitida* Miers ex Benth (“lalapau”), *Symphorema luzonicum* (Blanco) F.-Vill. (“mulawing-baging”), *Dicranopteris linearis* (Burm. f.) (“tilob”), *Connarus semidecandrus* (Zoll.) Leenh. (“kamagsa brown”), and *Entada phaseoloides* (L.) Merr (“gugo”), which are all native to the Philippines. Results showed that *S. minor* and *S. luzonicum* had the highest extraction yield of $6.28 \pm 0.39\%$ and $6.26 \pm 0.77\%$, respectively. Phytochemical screening revealed that the crude extracts contained different phytochemicals such as alkaloids, steroids, terpenoids, and tannins. For total phenolic content, ethanolic extracts of woody vines ranged from 9.51–640.24 mg GAE/g dried extract with *C. semidecandrus* and *S. luzonicum* were found to have higher amounts among forest woody vines with values of 640.24 ± 7.13 and 398.94 ± 20.08 mg GAE/g dried extract, respectively. Moreover, DPPH results showed that *D. linearis*, *S. luzonicum*, *E. phaseoloides*, and *C. semidecandrus* had strong antioxidant activities, which ranged from 5.99–17.88 $\mu\text{g/mL IC}_{50}$ and were higher than the butylated hydroxytoluene (BHT) standard (28.47 $\mu\text{g/mL IC}_{50}$). On the other hand, *M. peltata*, *A. flava*, *H. nitida*, and *S. minor* antioxidant activity ranged from 40.61–78.65 $\mu\text{g/mL IC}_{50}$. Similar results of FRAP assay showed that *S. luzonicum* had the highest antioxidant activity with 2.68 ± 0.07 $\mu\text{mol TE/g}$ dried extract, whereas *S. minor* and *H. nitida* had the lowest antioxidant activity with 0.43 $\mu\text{mol TE/g}$ dried extract ± 0.03 and 0.41 ± 0.02 $\mu\text{mol TE/g}$ dried extract, respectively. Among the tested microorganisms for antimicrobial assay (well diffusion method), the growth of *S. aureus* was susceptible to the ethanolic extracts of *S. luzonicum* and *C. Semidecandrus* with inhibition zones of 21.3 ± 1.4 and 20.1 ± 2.5 mm, respectively. Overall, results show that woody vines contain phytochemicals with promising antioxidant and antimicrobial properties. These results could be used as a baseline in the purification of woody vines’ bioactive components. (Author's abstract)

Keywords: Antimicrobial assay, Antioxidant activity, Forest woody vines, Phytochemicals, Chemistry

In Silico Investigations of Some Carbohydrate Derivatives: Pass Prediction, ADMET, QSAR, and Molecular Docking Studies against *Pseudomonas aeruginosa*

Kawsar, Sarkar M.A. , Arabi, Ish

Carbohydrates are plentiful naturally occurring macromolecules that are crucial to a range of biological activities. Therefore, the focus of our research group has been on computational studies of previously synthesized methyl α -D-glucopyranoside (α -MGP) derivatives. To determine the chemical descriptors of the synthesized compounds, quantum chemical research was conducted using Gaussian09 and the DFT (density functional theory) calculations.

Frontier molecular orbital features, electrostatics potential, and thermodynamic properties of these optimized compounds are investigated. PASS (prediction of activity spectra for substances) showed the excellent thermodynamic and antimicrobial properties of the designed α -MGP derivatives. The binding energy and binding strategies of certain bacterial proteins from *Pseudomonas aeruginosa* (3PBN, and 3PBS) were investigated using molecular docking simulations, and adequate binding affinity was reported. QSAR (quantitative structure-activity correlations) analysis found a better drug-likeness profile for all α -MGP derivatives, and pharmacokinetic prediction demonstrated an enhanced drug-likeness profile of α -MGP derivatives. Furthermore, by side chain alteration in the α -D-glucopyranoside sequence, these compounds can be thought of as strong antibacterial agents. (Author's abstract)

Keywords: ADMET, DFT, Glucopyranoside, Molecular docking, Pharmacokinetic, QSAR, Chemistry

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0067

***In Vitro* Assessment of the Inhibitory Effect of Sludge against *Fusarium oxysporum* f. sp. cubense (Smith) Synder et Hansen**

Gulpeo, Pia Clarisse R., Espiritu, Emilyn Q., Tan Gana, Neil H., Unson, Jewel Racquel S., Guzman, Maria Aileen Leah G., Francisco, Jessica R., Sandoval, Aurea Mari

Sludge production is a major challenge for wastewater treatment plants and is expected to exceed 10,000 tons per day worldwide. Inadequate management of sludge can result in treatment and disposal issues, necessitating the need for effective sludge disposal strategies. Recent studies have shown that sludge may be effective in controlling soil-borne pathogens, but the underlying mechanisms and potential applications of this property in local environments remain unclear. To address this knowledge gap, this study investigated the physico-chemical properties of sludge from a sewage treatment plant and its inhibitory activity against the fungal pathogen *Fusarium oxysporum*. Sludge samples produced at various drying rates were tested, and the percent relative inhibition zone diameter (% RIZD) was measured. Potential bacterial species with inhibitory properties were isolated from the sludge and identified, and correlational analysis was carried out. The results show that sludge extract, after two months of drying, had the highest % RIZD ($78.29 \pm 5.7\%$, $p < 0.05$) – which correlated positively with the total bacterial count, total nitrogen, potassium, and microbial respiration. These results indicate that the biotic components may have a positive effect on the sludge's inhibitory potential against *F. oxysporum*. Although sludge has been found to have the potential to inhibit fungal pathogens, further treatment is necessary to meet regulatory standards (PNS/BAFS 40:2016) and avoid environmental contamination. This study provides a baseline for future research on sludge reuse and management policies. (Author's abstract)

Keywords: Inhibitory properties, Organic amendment, Sludge, Soil-borne pathogens, Wastewater treatment, Chemistry

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NP

0068

Investigation of Chemical Components of Hexane Extract from the Stem of *Arcangelisia flava* via Phytochemical Test, GC-MS Analysis, FTIR Fingerprinting, and *In Vitro*

Antioxidant Activity

Lapuz, Rebecca B., Balagot, Kim Wilmer M., Delica, Kimbe

Arcangelisia flava, also known as yellow root, is a woody vine indigenous to the Philippines. It has been established that it possesses medicinal properties, and several of its bioactive compounds have been identified. However, most of its possible bioactive nonpolar chemical compounds remain unidentified. In this study, the stem of *A. flava* was investigated for its chemical components, FTIR fingerprinting, and antioxidant activity. The stem of *A. flava* was chopped, ground, and then extracted with hexane per gram of *A. flava*. Thin-layer chromatography (TLC), phytochemical screening, GC-MS and FTIR analyses, cupric-reducing antioxidant capacity (CUPRAC), and 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assays were performed to evaluate the chemical components of *A. flava* hexane extract. TLC and phytochemical screening revealed the presence of some organic acids, triterpenes, sterols, essential oils, phenols, and flavonoids. Further characterization using GC-MS analysis revealed 64 chemical components classified into hydrocarbon, ketone, alcohol, aromatic compounds, aldehyde, ester, organosilicon, and other chemicals. The most abundant compound was hexacosane with a relative abundance of 43.17%. This was followed by tetracosane (8.85%), o-xylene (8.09%), and hexatriacontane (5.72%). The FTIR spectrum also revealed the presence of hydrocarbons such as alkanes and alkenes, confirming the 60% abundance of such class of compounds as revealed by GC-MS. Meanwhile, based on the CUPRAC and DPPH assay conducted, the hexane extract from the stem of *A. flava* had low antioxidant capacity. Based on the literature search, this is the first time the chemical composition of *A. flava* hexane extract has been evaluated and its chemical compounds identified. The findings presented in this paper should be taken into account for any future research on the species' therapeutic properties. (Author's abstract)

Keywords: Antioxidants, *Arcangelisia flava*, FT-IR fingerprinting, GC-MS, Hexane extract, Phytochemicals, Woody vine, Chemistry

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NP

0069

Isolation, Screening, and Characterization of Fungal Isolates with Pectinolytic Activity from Decaying Fruits

Tantiado,

Filamentous fungi are potential source of pectinolytic enzyme production used in fruit processing industry can be isolated from decaying fruits as substrates. Thus, this study was conducted to isolate, screen, characterize pectinase-producing fungi from decaying fruits and assess their pectinolytic activity. Decaying fruits samples were collected from fruit stands of Iloilo City Terminal Market. Pectinolytic fungi were grown and screened for pectinolytic activity using pectinolytic activity plate assay based on the decolorization coefficient value. Results showed three genera of fungi isolated from various decaying fruits which include *Aspergillus* (9 isolates), *Rhizopus* (1 isolate), and *Mucor* (1 isolate). *Aspergillus* spp. was the most dominant fungal isolate obtained from decaying fruits of ampalaya (*Momordica charantia*), pear (*Pyrus pyrifolia*), pineapple (*Ananas comosus*), tomato (*Lycopersicon esculentum*), lemon (*Citrus limon*), melon (*Cucumis melo*), calamansi (*Citrus microcarpa*), and mango (*Mangifera indica*). The *Aspergillus* spp. showed significant pectinolytic activity among the fungi effectively screened based on the decolorization coefficient value obtained. Thus, common fungi with pectinolytic activities are mitosporic genera isolated from decaying fruits that can be applied in agro-biotechnological industry. (Author's abstract)

Keywords: Decaying fruits, Fungal isolates, Pectin, Pectinolytic activity, Chemistry

WVSU Research Journal, Volume No. 11 Issue No. 1, 36-50
2022 June,
(Filipiniana Analytics)

Molecular Characterization and Metabolite Profiling of Philippine *Allium sativum*

Linn.: Ilocos Pink

Heralde, III, Francisco M. , Manalo, Richelle Ann M. , Martin, Zaidy T. , Relacion, Patr

Ilocos Pink garlic (IPG) is a local garlic variety found in Ilocos Norte, Philippines. Recently known for its moderate beta-adrenergic receptor inhibitory activity in vivo, there is still a limited number of studies describing its genetic and metabolite profile to distinguish it from other garlic varieties. In this study, genetic markers of IPG were identified using sequence-related amplified polymorphism (SRAP) analysis. Ultra-high performance liquid chromatography-quadrupole time-of-flight mass spectrometry followed by principal component analysis (PCA) was used to discriminate IPG's metabolites from Ilocos Native garlic. Based on the degree of brown-stripe pigmentation on their outer skin, IPG samples can be classified into three – light, moderate, and heavy pigmentation. These subgroups were found to share seven SRAP marker pairs – namely, ME1-EM1 (at 300bp), ME1-EM4 (at 400bp), ME2-EM3 (500bp), ME3-EM1 (300bp), ME3-EM2 (at 400bp), ME3-EM4 (at 200bp), and ME5-EM2 (at 300bp). Unique SRAP marker pairs were also observed between subgroups. PCA revealed Ilocos Native garlic to be discriminated from the IPG groups, but the marker matrix tool showed mere differences in concentrations except m/z 247.129 at RT 1.40. Concentration-wise, nine markers may be proposed to discriminate IPG light from IPG moderate and heavy, seven of which are putatively identified as saponins. These findings suggest that SRAP markers can effectively discriminate IPG into subgroups, whereas metabolite profiling may provide little insight into the differences between IPG and Ilocos Native garlic. (Author's abstract)

Keywords: *Allium sativum*, Ilocos Pink garlic, Mass spectrometry, Principal component analysis, Sequence-related amplified polymorphism, Chemistry

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2023 October,

(Filipiniana Analytics)

NP

Physicochemical Properties and Sensory Qualities of Wine Produced from galiguan (*Paratrophis glabra*) Fruit

Taguiling, Ma. Lou

The study used a rather underutilized “galiguan” [*Paratrophis glabra* (Merr.) Steenis] fruits in the production of wine beverages using a research development process and descriptive method. It aims to determine the physicochemical properties using Bruker Alpha FT-IR Spectrometer Wine Analyzer and evaluate the sensory qualities of the wine product in terms of appearance, aroma, taste, texture/finish, and general acceptability using consumer rating test through a 4- and 7-point hedonic scale. Physicochemical analysis showed that galiguan wine is within standards for fruit wine as to acetic acid (0.41 g/L), alcohol (10.24%), citric acid (3.09 g/L), density (1), fructose (5.44 g/L), glycerol (10.08 g/L), lactic acid (0.31 g/L), pH (3.67), saccharose (1.60 g/L), and total sugar (7.30 g/L) but less in total acid (2.55 g/L) based on the overall average. The average values for glucose, tartaric acid, and malic acids were negative. The wine product had good appearance, aroma, taste, texture/finish, and acceptability as fruit wine comparable to that of Bignay wine. Utilizing *Paratrophis glabra* fruits in wine production could minimize the wastage of its fruits during its peak fruiting season and can be an alternative source of wine beverage and livelihood. (Author's abstract)

Keywords: *Fruit wine, General acceptability, Paratrophis glabra, Physicochemical properties, Sensory qualities, Chemistry*

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NP

0072

Production of Biochar from Coconut Husks for Adsorption of Heavy Metals in Water

Le Lien, Nguyen Thi, Thi Thuy, Nguyen, Minh, Vo Cong, Kim Phung, Le Thi, Nhat Huy, Ngu

This study focused on the production, characterization, and application of biochar from coconut husks as an effective and cheap adsorbent for the removal of heavy metals (*i.e.* Pb, Fe, Mn, and Cr) in water. The biochar was produced by pyrolysis of coconut husk at 600 °C in oxygenfree conditions and then characterized by various surface analysis technologies to explore its physical and chemical properties. In the metal adsorption test, the produced biochar gave high metal removal performance with maximum adsorption capacities of 95.24 mgPb²⁺/g, 40.16 mgFe²⁺/g, 35.46 mgCr⁶⁺/g, and 23.09 mgMn²⁺/g under pH 5, 4.5, 2, and 5.5, respectively. Studies in kinetics, isotherms, thermodynamics, and mechanism were then conducted to understand the adsorption process of metal ions in water using coconut husk biochar. **(Author's abstract)**

Keywords: *Adsorption, Biochar, Coconut husk, Heavy metals, Wastewater treatment, Chemistry*

Philippine Journal of Science, Volume No. 152 Issue No. 5, 1579-1593
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(Filipiniana Analytics)
NP

0073

Selective Synthesis of Monolaurin: A Preliminary Investigation

Yu, Gilbert, Cayona

Monolaurin (ML) is a monoacylglycerol (MAG) with important industrial and biomedical properties. It is commonly prepared in large quantities from the direct esterification of lauric acid (LA) and glycerol with chemical catalysts. However, this method also generates other glyceride by-products whose properties are inferior to ML. Enzymes have also been used to optimize selectivity, but enhancing scalability and throughput is always challenging. Successful selective convergent chemical synthesis of ML involving activated derivatives of LA and glycerol is demonstrated in this study. The present yield of 3.41% can be improved with careful process control. **(Author's abstract)**

Keywords: *Monolaurin, Monoacylglyceride, Medium-chain fatty acid, Selective synthesis, Sodium glyceroxide, Chemistry*

Philippine Journal of Science, Volume No. 152 Issue No. 3, 983-988
2023 June,
(Filipiniana Analytics)
NP

Synthesis of Mono- and Diacylglycerol Using High Shear Reactor

Hidayat, Chusnul, Ardani, Aulia Safrina, Millati, Ria, Yanti, Rini, Rohana, Nanda Legiasa Rabiul

This study aimed to obtain the best characteristics of a product containing a mixture of high mono- and diacylglycerol (MDAG) from a palm olein and coconut oil blend through glycerolysis/interesterification using a high shear reactor. The most optimum reaction was performed at a relatively low temperature (120 °C), 3% NaOH as a catalyst, a 12% molecular sieve, and an agitating speed of 2000 rpm. The evaluated factors were palm olein: coconut oil ratios (70:30, 60:40, 50:50, 40:60, and 30:70) and oil: glycerol ratios (1:3, 1:4, 1:5, 1:6, and 1:7). The results showed that palm olein: coconut oil ratio had a significant effect on melting point (MP), slip melting point (SMP), hardness, and emulsion capacity and stability, but it did not have a significant effect on MDAG concentration ($P > 0.05$). Besides, modifying a high-shear reactor with a vacuum pump and molecular sieve caused a decrease in water content in the system, subsequently reducing free fatty acid (FFA) significantly ($P < 0.05$). The reaction condition at palm olein: coconut oil ratio of 50:50 and oil: glycerol ratio of 1:5 produced the highest MDAG concentration (58.28%) with FFA, water content, hardness, SMP, MP, emulsion capacity, and emulsion stability about 6.75%, 7.00%, 3.93 N, 33.23 °C, 35.57 °C, 62.66%, and 61.59%, respectively. Thus, glycerolysis-interesterification of palm olein and coconut oil blend in a high shear reactor is a promising alternative to produce a product containing high MDAG with better characteristics at a relatively low temperature. The product can be used for chocolate spread based on its emulsion capacity, stability, and semi-solid hardness. **(Author's abstract)**

Keywords: *Coconut oil, Glycerol, High shear reactor, Mono and diacylglycerol, Palm olein, Chemistry*

Philippine Journal of Science, Volume No. 152 Issue No. 4, 1285-1295
2023 August,
(Filipiniana Analytics)
NP

Utilization of Brown Coal with Ceara Rubber (*Manihot glaziovii*) Binder for Biobriquettes

Gani, Asri, Lubis, Mirna Rahmah, Maimun, Teuku, Aflah, N

Based on the ultimate and proximate analysis, brown coal and ceara rubber (biomass) had low calorific values of 5,349 and 3,319 kcal/kg, respectively. The ceara rubber was not included in the food ingredient because it contained chemicals such as toxic cyanide acid. This research was conducted to utilize the biomass in biobriquettes that had added value and became a more environmentally friendly energy source compared to fossil fuels. The mixing ratio of the biobriquette was determined at various particle sizes. Biobriquette preparation included crushing, drying, size reduction, sieving, mixing, molding, and testing. The produced biobriquette was cylindrical with a diameter of 3 cm and pressing pressure of 7 metric tons. Biobriquette analysis included compressive strength tests, tests of density, tests of moisture, ash, and fixed carbon content, tests of the volatile matter, and tests of calorific values. These biobriquettes were expected to increase the selling value of low-rank coal and become one alternative to more environmentally friendly solid fuel for cooking purposes. Based on the research results, the best biobriquette had a particle size of 60 mesh. The result showed that the best particle size was on the mixing ratio of 3:2, with the net calorific value reaching 4,300.8 kcal/kg. **(Author's abstract)**

Keywords: *Biobriquette, Biomass, Brown coal, Mechanical test, Physical property, Chemistry*

Philippine Journal of Science, Volume No. 152 Issue No. 5, 1885-1894
2023 October,
(Filipiniana Analytics)
NP

COMMUNICATIONS

0076

The Mediating Role of Organizational Commitment Between Transformational Leadership, Job Satisfaction, and Turnover Intention among Call Center Agents in Metro Manila

Toele, Redmund Jos

This study looked at the relationship of transformational leadership and job satisfaction to turnover intention, including the mediating factor of organizational commitment among 87 call center agents in Metro Manila, Philippines. This study used a quantitative-cross-sectional and explanatory design and involved online survey of call center employees as a research method. Respondents were selected through a non-probability sampling technique specifically through snowball sampling or referral method. The results of this research showed a high level of transformational leadership exhibited in call center companies, high level of job satisfaction among call center agents, high organizational commitment but only average turnover intention. Most importantly, this research highlights the important role that organizational commitment as a mediator as the results of this study showed that organizational commitment fully mediates the relationship of transformational leadership and job satisfaction to turnover intention. **(Author's abstract)**

Keywords: *Commitment, Job satisfaction, Transformational leadership, Turnover intention, Communications*

WVSU Research Journal, Volume No. 10 Issue No. 2, 26-47
2021,
(Filipiniana Analytics)
NP

COMPUTER SCIENCE

0077

Exploring the Relationship between EEG Features of Basic and Academic Emotions

Cordel, II, Macario O. , Herradura, T

This study aimed to explore the relationship between basic and academic emotions by analyzing their EEG patterns. Using MAHNOB-HCI (MH) and Academic Emotion (AE) datasets, we performed three experiments based on valence and discrete emotion models. Our analysis revealed no similarity between the valence of basic and academic emotion datasets. However, we found that three out of 84 features in the MH discrete emotion dataset had a statistically significant relationship with the AE frustration dataset, suggesting some commonality between basic and academic emotions, particularly in the case of frustration. We also used random forest (RF), multilayer perceptron (MLP), and support vector machine (SVM) models to validate our findings, with the RF model outperforming the others in terms of valence classification accuracy. Our study provides valuable insights into the relationship between basic and academic emotions and may inform future research in this area. **(Author's abstract)**

Keywords: *Computer science, Basic emotion, Academic emotion, EEG signals*

Philippine Journal of Science, Volume No. 152 Issue No. 4, 1507-1516
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(Filipiniana Analytics)
NP

The Academic and Licensure Examination Performances of a Bachelor of Science in Nursing Graduates in a State College
Ligligen, Sean Camelon A. , Kiblasan, June

The practice of safe and effective nursing care is what a Bachelor of Science in Nursing graduate can provide based on the established competencies of the curriculum. However, they need to be on the list of registered nurses before entry into practice. This study analyzed the academic and licensure examination performances of Bachelor of Science in Nursing graduates in a state college to ascertain relationships and predictors of the licensure examination as the basis for future planning. Descriptive-retrospective design was utilized where 208 graduates who took their licensure examination from 2013 to 2017 were conveniently chosen. Statistical Package for Social Sciences Version 22.0 was used where Pearson product-moment correlation coefficient and Simple Regression Analysis were employed. The academic and nurse licensure performances of graduates were found lower than the ideal and are opposite in terms of skewness and kurtosis. Moreover, a strong positive relationship was noted between the graduates' performances in their academics and licensure examinations. 5 from 21 nursing courses are significant predictors with strong unique contributions to the nurse licensure examination at which 2 from the 5 were found common in all parts of the examination. Thus, it is vital to always look into predictors as basis in the modification of institutional policy on curriculum implementation. **(Author's abstract)**

Keywords: *Academic performance, Philippine nurse licensure examination, Nursing education, Nursing professional courses, Nursing program, Education*

Philippine Journal of Nursing, Volume No. 90 Issue No. 2, 15-20
2020 July to December,
(Filipiniana Analytics)
NP

Accelerating Research Evidence Translation Through Dyadic Engagement: A developing model for evidence-based practice implementation
Arde, Jr., Bernardo Oli

Evidence-based practice (EBP) has been regarded as the gold standard of clinical practice in the health profession. However, even though the importance of EBP is well documented in the nursing literature, in developing countries, its implementation remains a challenge. In addition to individual and organizational barriers to EBP implementation, the existence of the academician-clinician divide is a critical concern. This seeming disconnect has significantly hampered the translation of knowledge into practice. Hence, collaborative dyadic engagements between the academician and clinicians have to be nurtured. The Accelerating Research evidence translation through Dyadic Engagement (ARDE) Model, a pragmatic way of facilitating the enculturation of EBP, is proposed and collaborative efforts in solving clinically relevant nursing issues will pave the way for EBP to become an integral part of clinical practice. **(Author's abstract)**

Keywords: *EBP, Academician, Clinician, Dyadic Engagement, Partnership, Model of Nursing, Education*

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NP

Analysis of Students' Reflective Journals: Basic for an Action Plan to Promote Quality Education Amidst the COVID-19 Pandemic

Jetomo, Frances Gr

Education, in this unprecedented time, takes on a new landscape, and therefore students face new challenges. The purpose of this action research is to propose an action plan based on the profile of 77 Grade 8 students in a public high school in the province of Sorsogon and the issues revealed in their survey responses and reflective journals utilizing quantitative and qualitative methods. The quantitative data shows that most of them are from small or medium families which mostly belong to the poor or low-income sector. Almost half of the respondents are either the eldest or the only child in the family. Twenty of them are only using smartphones for online classes. The qualitative section reveals that the issues mostly revolve around their struggle in adjusting to online classes. The major problem encountered by a significant number of students is poor signal or internet connection. Other notable concerns are the number of activities and projects given and poor social life. An action plan is proposed based on the result of the study to give recommendations to the students, area chair, subject teachers, parents, and school officials on how to help the students cope and learn well in their online classes. Mainly, they need help to improve their time management skills and relational life. Hence, the teachers, parents, school officials, and other stakeholders are encouraged to take appropriate actions to address the concerns and suggestions expressed by the students regarding online classes to promote quality education amidst the COVID19 pandemic. **(Author's abstract)**

Keywords: *Distance education, Reflective journal, Action research, Online classes, Education*

NRCP Research Journal, Volume No. 20 Issue No. 1,
2021,
(Filipiniana Analytics)
NP

Emergency Remote Teaching Experiences of Philippine Basic Education Public School Teachers

Albania, Lovely Airein D. , Avilla, Ruel A. , Ilanan, Celia M. , Peñafiel, Jayson A. , Gonzales, Richard DLC. , Lucas, Rochelle Irene G. , Cascolan, Honelly Mae S. , Prudente, Maricar S. , Aguja, Socorro E. , Lapinid, Minie Rose C. , Mistades, Voltaire M. , Cajimat, Rodney T. , Sarmiento, Celina P., Pineda, Josephine Luz D. , Regalado, Maria Ruth

The COVID-19 worldwide outbreak drove all educational institutions to enforce school closures and sought alternative ways to sustain education. In response, the Philippine Department of Education (DepEd) initiated social distancing measures, transitioned the curriculum to the Most Essential Learning Competencies (MELCs), and equipped the department for Emergency Remote Teaching (ERT). However, the shift occurred abruptly with insufficient preparation. Hence, teachers were obliged to deliver education in an unfamiliar environment, requiring additional skills and resources. In this study, the experiences of school teachers who had to endure sudden changes and exposure to a new teaching and learning environment was investigated. A nationwide survey in April 2021 was participated by 28,859 basic education public school teachers in all levels. Consequently, descriptive statistics was done to analyze the collected data. Results suggest that most teachers utilize printed modules as the modality for remote teaching. This finding is probably because stable internet access is still a challenge in many areas of the country. As a result, teachers implement less interactive forms of activities. Facebook also emerged as widely used means for communication with students and colleagues. Teachers also learned how to use several applications to cope with the demands of the new work environment. With these findings, the education sector is

enjoined to conceptualize modifications that could improve remote teaching implementation in the country.
(Author's abstract)

Keywords: Basic education, COVID-19, Emergency remote teaching, Teachers' experience, Education

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2022,
(Filipiniana Analytics)
NP

0082

Factors Associated with Condom use to Prevent HIV Infection: An online survey of Filipino men who have sex with men *Calaguas, Nor*

The steady rise in newly-diagnosed cases of Human Immunodeficiency Virus (HIV) has been historically associated with Men-who- have-sex-with-men (MSM) in the Philippines. This has been attributed to low condom use despite longstanding guidance on their efficacy in preventing the spread of HIV among other sexually transmitted diseases. The objective of the study was to describe the sociodemographic and sexual characteristics of an online sample of Filipino MSM, and identify which factors are significantly associated with condom use at last sexual intercourse. Purposive sampling through referrals within the MSM community resulted in a sample of 491 Filipino MSMs. Bivariate analysis revealed that MSM's civil status, gender expression, relationship status, their predominant sexual position, and the sexes of their sexual partners are significantly associated with the use or non-use of condoms during their last sexual intercourse. The study may prove to be beneficial to public health leaders in the implementation of a comprehensive group of interventions to increase condom use. (Author's abstract)

Keywords: Human Immunodeficiency Virus, Men Who Have Sex With Men, Condom Use, Sexual Behavior, Survey Methodology, Education

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(Filipiniana Analytics)
NP

0083

Medical students' experiences of online learning during the COVID-19 pandemic: A phenomenological study

Dave, Tobiel W. , David, Regina Catherine C. , Danga, Angelica Marie G. , Dalmacio, Shekainah Praise C. , Daham, Fatimah Aifah D. , Dacion, Kathleen Joyce G. , Ballesteros, Elyssa Rhevilyn L. , Ballesteros, Blessie D.C. , Balisi, Angelica Louise S. , Balmaceda, George Nicole A., Dawili, Sheryn S. , Juangco, Jose Ronilo G. , Mendoza, Suzett

Introduction The COVID-19 pandemic forced Philippine medical schools to adapt their curriculum design to fit an online setup. This study aimed to analyze and interpret the lived experiences of medical students who experienced online learning during the COVID-19 pandemic and to explore the adaptations to online learning.

Methods This is an interpretive phenomenological study using purposive sampling. Participants were 1st to 3rd year medical students enrolled for Academic Year 2020-2021. Participants were interviewed online by a psychologist who was not part of the research team using a 13-question guide. The interviews were recorded and transcribed. Interview data were analyzed and interpreted using interpretative phenomenological analysis (IPA).

Results Nine medical students were interviewed. The IPA identified six superordinate themes: 1) positive adaptations through positive reframing; 2) resulting mental health concerns; 3) intrinsic and extrinsic concerns encountered; 4) self-awareness as a first step towards adjustment; 5) dual role of family; and 6) perceptions on systemic response.

Conclusion Online medical education during the pandemic resulted in problems and mental health concerns among participants, and many developed self-awareness and positive adaptations specific to the online setup. Participants' families helped some adjust, while others posed an additional challenge. Both positive and negative perceptions of the systemic response of the school also arose. **(Author's abstract)**

Keywords: *COVID-19, Online medical education, Phenomenology, Coping strategies, Mental health, Experience of online learning, Education*

Health Science Journal, Volume No. 11 Issue No. 1, 1-11
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(Filipiniana Analytics)
NP

0084

Perceived Quality on Junior High School Sex Education and its Sexual Knowledge and Attitudes among Senior High School Students in a Selected Private University in the National Capital Region

Riosa, Julliana, Santos, Samantha, Cruz, Isabella, Azarraga, Stefani, Cleofas, Je

Comprehensive Sexual Education is often overlooked due to its sensitive nature in conservative society, resulting in higher teen pregnancy rates, unsafe sex practices, and an increase in sexually transmitted diseases. It also restricts preadolescents from learning about other equally valuable information such as sexual orientation and gender expression. This study utilized scales to measure its main four variables — Background Characteristics, Perceived Quality, Sexual Knowledge, and Attitude — and a descriptive correlational design to explore the relationships between them. The results showed that quality sexual education had positive contributions to sexual knowledge, and that students had a relatively positive sexual attitude. The study also revealed that respondents with higher religiosity had higher perceptions of comprehensiveness and the school environment in relation to their quality of JHS sex education. **(Author's abstract)**

Keywords: *Sex education, Sexual knowledge, Sexual attitude, Religiosity, Education*

WVSU Research Journal, Volume No. 10 Issue No. 1, 42-56
2021 June,
(Filipiniana Analytics)
NP

0085

School Type and Placement of Technical Education Pre-Service Teachers for Teaching Practice Exercises in Nigeria: A Qualitative Study

Olakotan, Olusegun O

Technical Education pre-service teachers are breed of a dual process, hence the need to be discrete in handling their affairs. One of such areas that requires discrete handling is the area of teaching practice which must not be toyed with. Therefore, attention was given to considering school type and placement of technical education pre-

service teachers for teaching practice exercises in this study. Two research questions bothering on whether school type should be a factor to be considered in placing technical education pre-service teachers for teaching practice exercises and why it should be a factor for consideration guided the study. Qualitative method was used in gathering and analyzing data. The sample for the study consisted of a total of 17 participants. The participants were technical education experts who possessed doctorate degrees and relevant experience to provide adequate information for this study. The instrument for data collection was an interview protocol that involved both face-to-face and Social Media interactions. Data collected for this study was analyzed using content analysis. The major findings of the study showed that there was need to consider school type in placing technical education pre-service teachers for teaching practice exercises. Based on the findings of this study, it is therefore recommended that technical education pre-service teachers should be posted to public secondary schools where qualified cooperating teachers, workshop and facilities for implementing basic technology curriculum are available and functional. **(Author's abstract)**

Keywords: *School type, Technical education, Pre-service teachers, Teaching practice, Cooperating teachers, Education*

WVSU Research Journal, Volume No. 11 Issue No. 1, 1-17
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(Filipiniana Analytics)
NP

0086

A Scoping Review on Factors Affecting the NCLEX-RN Performance of Internationally Educated Nurses *Montegrigo,*

Purpose: This scoping review aims to describe the factors affecting the National Council Licensure Examination-Registered Nurses (NCLEX-RN) performance of internationally educated nurses (IEN).

Background: The United States relied heavily on IEN to help address the nursing shortage. However, IEN face challenges in passing the NCLEX-RN with almost half failing the NCLEX-RN the first time. There is a lack of studies on IEN, in general, and factors affecting their NCLEX-RN performance, in particular.

Method: A literature review of IEN NCLEX-RN studies from 1994 to 2020 was conducted. The Preferred Reporting for Items for Systematic Reviews and Meta-Analysis (PRISMA) was used to describe the search process.

Findings: Based on the review of the available literature, the most commonly identified factors affecting IEN NCLEX-RN performance include proficiency with the English language, differences in nursing education, and unfamiliarity with the NCLEX-RN. Language, country of nursing education, healthcare experience, support system, the Commission on Graduates of Foreign Nursing Schools certification exam, (CGFNS CE), and time-lag between graduation or initial licensure and NCLEX-RN are statistically significant predictors of NCLEX-RN performance.

Conclusion: Individual, academic, and environmental factors influence IEN NCLEX-RN performance. Identifying these factors can help in designing individual and multi-level interventions to assist IEN to pass the NCLEX-RN. **(Author's abstract)**

Keywords: *Internationally educated nurses, NCLEX-RN, Nursing education, Education*

Philippine Journal of Nursing, Volume No. 90 Issue No. 2, 21-28
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NP

Standardized Tests as Predictors of NCLEX-RN Success

Montegrico,

Purpose: This study examined the predictive ability of Assessment Technologies Institute (ATI) standardized tests on Fundamentals of Nursing (FON), Pharmacology (PHARM), Medical-Surgical Nursing (MSN), and RN Comprehensive Predictor (RNCP) on the National Council Licensure Examination-Registered Nurses (NCLEX-RN) performance of nursing graduates.

Background: Various assessment tools in nursing education are used to predict the success of students in nursing licensure examinations. There are inconsistent findings on the predictive ability of course-specific standardized tests on NCLEX-RN success.

Methods: A retrospective correlation research design was used to determine the association between ATI standardized tests and NCLEX-RN success. Secondary data analysis of 141 ATI student scores from 2017 to 2018 from a Southeastern university in the United States were analyzed using descriptive and inferential statistics, set at 0.05 level of significance. Three models of logistic regression were used to determine the predictive ability of ATI standardized exams on NCLEX-RN success.

Results: ATI MSN standardized test is the strongest predictor of NCLEX-RN success, followed by ATI FON and ATI RNCP tests. ATI PHARM standardized test is not predictive of NCLEX-RN success.

Conclusion: Standardized tests can help in identifying students who are at-risk for failing the NCLEX-RN prior to taking the examination. Understanding the impact of standardized testing on NCLEX-RN performance is essential in addressing the students' ability to become successful in the nursing program and NCLEX-RN. (Author's abstract)

Keywords: *Standardized test, Nursing education, ATI, Nursing students, Education*

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(Filipiniana Analytics)
NP

Students' Experiences Towards Improving Online Distance Learning Modality (ODLM) among Philippine Higher Education Institutions

Mella, Gladys Joy M. , Palabrica, Karen Mae H. , Soreda, Cyra Mae R. , Dio, R

The pandemic crisis due to the spread of coronavirus disease 2019 (COVID-19) worldwide leads to the adoption of the most appropriate instructional models of Online Distance Learning (ODL) amid the identified digitalization problems, access barriers, and stakeholders' opposition to modern technologies. This descriptive method of research employed the phenomenology and grounded theory approaches to qualitative research using the survey, Key Informants Interviews (KII), and Focus Group Discussions (FGD) in exploring the 108 (38 Male, 69 Female, and one do not prefer to say) students' experiences with the different modes of ODL delivery among 30 Higher Education Institutions (HEIs) in the Philippines. Thematic content analysis of transcripts follows the phases of initialization, construction, rectification, and finalization, which revealed students' satisfaction with exposure to engaging multi-sensory activities utilizing blended synchronous and asynchronous online learning delivery. The ODL delivery among HEIs will be more productive in maximizing learning outcomes among students when they can easily communicate with teachers and consistently receive personalized asynchronous on-time feedback. The

upgrading and re-upgrading of learning resources and infrastructure, human capital development, and data-driven institutional policies among the HEIs have to be in place to revitalize the implementation of flexible ODL as per guidelines set in the CHED Memorandum Order No. 4, s. 2020. The derived ODL model, which illustrates the continuous process of teaching-learning tasks, may be adopted by the instructional designers among HEIs as a means of improving the ODL experiences of students in diverse places in the Philippines. **(Author's abstract)**

Keywords: *Students' Experiences, Online Distance Learning (ODL), Instructional Delivery, Learning Model, Higher Education, Education*

NRCP Research Journal, Volume No. 22 Issue No. 1, 147-178
2023,
(Filipiniana Analytics)
NP

0089

University Quality Measures Based on Global Ranking Systems

Aniga, Frederick Calope, Medilo, Constanin

This paper generated an index that marries the Times Higher Education (THE) World University ranking and the Reuters Innovative University ranking through principal component analysis (PCA). This study utilized the descriptive-correlation design to generate an index of university rankings based on the composite of the indicators used in the THE World University and the Reuters Innovative University ranking systems. The PCA also created an index of university rankings based on the composite of the indicators used in the two university ranking systems. The regression analyses showed that the THE World University ranking system has a 100% fit, while the Reuters Innovative University ranking system has an r^2 of 36.54%. Additionally, universities in the United States dominate the rankings in both, with 19 universities included in the top 35 of both ranking systems. After marrying the two ranking systems through the PCA, four principal components were identified. These components include academic competence, returns on innovations, commercial impact, and international outlook. The new or unified ranking system shows that quality tertiary education is a function of academic competence, returns to innovation, commercial impact, and international outlook. The unified university ranking system encompasses the ability to innovate and the ability to produce breakthrough knowledge. Hence, the unified ranking system shows that the universities included in the rankings are resilient universities that can adapt to disruptive changes in society. **(Author's abstract)**

Keywords: *Quality education, Higher education, University ranking, Education*

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2021,
(Filipiniana Analytics)
NP

ENGINEERING

0090

Air Change Rates and Aerosol Dispersion in a Room with Ceiling and Stand Fans Using Computational Fluid Dynamics

Quiros, Edwin N., Silva, Jeffrey E., Fernandez, Ken Br

Previous study demonstrated the effect of a single fan in terms of air change per hour (ACH) and air evacuation rate in a room to mitigate airborne diseases. With the goal of finding cheaper and short-term solutions

to replace expensive and long-term dedicated ventilation systems, this study performed computational fluid dynamics simulations to determine the effect of adding another fan (ceiling or stand fan) on the ACH, particle dispersion, and maximum particle time. Ten cases, 2 push-pull and 8 stand fan and ceiling fan combinations, were investigated in a room with two openings: a door and a window. Two aerosol source locations were considered: 1) the occupant near the door as the infector 2) the occupant near the window as the infector. Results show that the push-pull configurations generated higher ACHs (46.33 and 51.60) that are approximately near the sum of the ACH of push-only and pull-only cases. In addition, the stand fan with ceiling fan cases may or may not increase the ACH depending on whether the induced flow is in the same direction with the flow generated by the initially installed fan. Nevertheless, the intake stand fan placed at the window boundary coupled with ceiling fan facing the downward direction generated the highest ACH of 55.92. On the other hand, the addition of a fan generally increased the velocities inside the room, increasing the particle deposition on the surfaces rather than being evacuated outdoors. The FDI-FWE of the M1 case generated the highest particle evacuation rate of 14.96%. Lastly, the maximum particle time can decrease because of two reasons: 1) particles are easily deposited on the surfaces due to higher velocities, 2) particles are easily evacuated after generation, while it can increase when the particles enter a stagnation or recirculation zone. **(Author's abstract)**

Keywords: *Air change rate, Indoor Air Quality, Stand and Ceiling Fans, Particle Dispersion, Computational Fluid Dynamics, COVID-19, Engineering*

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2023,
(Filipiniana Analytics)
NP

0091

Assessment of Longitudinal Pavement Marking Conditions Based on Deep Learning *Antes, Emilson Ryan D., Bronuela-Ambrocio, Lea B., De Leon, Mellaine Denis*

Pavement markings play a vital role in managing regulations and the safety of road users. Markings

at best conditions effectively convey warning messages and information to the drivers without diverting their attention off the road. Due to traffic wear, regular evaluation and proper maintenance are being conducted by authorized agencies. The Department of Public Works and Highways (DPWH) is the legal authority that applies, removes, and maintains pavement markings on national roads in the Philippines. They used retro reflectivity, a property of pavement markings to reflect the light from car headlamps, to assess the condition of the pavement markings. This needs equipment laid on the pavement markings, interrupting the traffic flow. Another evaluation method employed in the country is a manual inspection in which the surveyors assess the remains of the markings on the road. Markings that are less than 50% based on the perception of the surveyor are subject to repainting. This method is subjected to human error or high subjectivity of measurement.

This study proposes a more time-efficient, more economical, and standardized alternative method to evaluate the condition of pavement markings. This approach uses the images captured from the existing pavement markings and a wear index adopted from foreign standards to rate the condition of the remaining marks. It aims to produce a program that employs an object detection algorithm called You Only Look Once (YOLO). The results of this program were validated using image processing and retro reflectivity test. Based on the findings, the proposed method is aligned with the current DPWH practice. It gives a

relatively high goodness of fit equal to 0.83 with the present method of 50% pavement marking judgment. **(Author's abstract)**

Keywords: *Pavement markings, YOLOv5, Image processing, Object detection algorithm, Engineering*

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(Filipiniana Analytics)
NP

0092

Assessment of Metro Cebu's Groundwater Vulnerability to Seawater Intrusion using the Galdit Index

Juanico, Drandreb Earl O. , Sinogaya, Jonnifer R. , Patino, Chito L. , Condor, Bill

Groundwater is important source of freshwater in the Philippine. However, this resource is vulnerable to deterioration if not properly managed due to both natural and anthropogenic forces. To address this issue, this study identified and located areas that exhibit higher tendencies of seawater intrusions using publicly available datasets. These outputs help direct attention to areas that show higher vulnerabilities. In this study, Metro Cebu, one of the country's major economic centers, was chosen as the study area as large amounts of groundwater extraction and existing seawater intrusions have been observed in the region. For this study, the GALDIT index was employed to highlight which areas exhibit higher vulnerabilities to seawater intrusions based on several parameters being considered by the method. By pairing with geographic information system (GIS) strategies, the GALDIT methods provide a well-established framework for assessing the seawater intrusion vulnerability of an area. Additionally, several alterations of the original GALDIT method, GALDIT-AHP, and GALDIT-SUSI, were also implemented to provide insights into how the investigated parameters influence the vulnerability classification of an area. The results of this study have emphasized the sensitivity of the vulnerability assessment to its investigated parameters and their corresponding weights. This has led to differences among the investigated indices when classifying highly vulnerable areas of Metro Cebu by up to 6%. The outputs of this study will be used as decision support tools by different stakeholders and water resource managers. **(Author's abstract)**

Keywords: *Groundwater, Vulnerability, GIS, GALDIT, Cebu, Engineering*

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2021,
(Filipiniana Analytics)
NP

0093

CFD Analysis on the Effect of Acrylic Barriers in Preventing Contagion Spread in a Philippine Classroom Setting Following Quarantine Guidelines

Danao, Louis Angelo M. , Abuan, Binoe E. , Pilotos, John Philip P. , Tan, Matthew Erwin H. , Valdez, Luis Anto

The resumption of face-to-face classes by the Philippine Department of Education (DepEd) requires a study of the planned measures to mitigate the risk of airborne diseases such as COVID-19. This study used computational fluid dynamics (CFD) streamline analysis to compare air flow in an open-air ventilation classroom that follows the DepEd standards when physical barriers divide individuals inside the room, and a similar setup without barriers. Visual inspection of streamlines generated at inlet speeds of 1m/s, 2 m/s, and 3.5 m/s, showed that barriers in the setup only prevent airborne contamination if all individuals remain at their assigned positions

at all times, without movement to enter, transit, or exit. The barriers facilitate air swirls that pose a risk to individuals who enter these regions of trapped air. Regardless of inlet velocity, the case with physical barriers installed was universally found to be effective in preventing transmission if all movement inside the room is completely restricted but was found have a greater risk of infection if any movement of individuals inside the classroom, whether it be to enter, transit, or exit within the room, is allowed. Thus, the setup without barriers was found to be generally more effective in preventing the spread of COVID-19. (**Author's abstract**)

Keywords: *CFD, Airflow, COVID-19, Barriers, Streamline, Engineering*

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(Filipiniana Analytics)
NP

0094

Comparative Study between Conventional and Converted Electric Tricycle *Dumlao, Florentina S. , Ibanez, Arthur G. , Orpilla, Michael B., Tolentino, Harle*

In the Philippines, tricycles are the most popular short-distance mode of transportation, and they are considered one of the major sources of air and noise pollution. Shifting to an electric tricycle (e-Trike) is seen as the solution, but it is hindered due to its high investment cost. One way to reduce the investment cost while having the benefit of an e-Trike is by converting the conventional tricycle to an electric tricycle (c-Trike). This study compares the performance and economic potential of conventional tricycles with the c-Trike. Mileage efficiency, climbing ability, and emissions are the factors considered in comparing these tricycles. The c-Trike has a better mileage efficiency of around 268 and 365% compared with 4- and 2- stroke counterparts, respectively. Climbing ability is tested considering different loads on the sloped roads available within Tuguegarao City. Due to the absence of a transmission, the c-Trike can only climb a 13-degree sloped road at a maximum load of 250 kg, compared to the 300 kg of the conventional tricycle, which limits its application to relatively flat terrain areas. The c-Trike emits half and a third less CO₂ than the 2- and 4-stroke counterparts, respectively. Converting all 2-stroke units to c-Trike in Tuguegarao City will result in yearly environmental savings of around 16,000 tons of CO₂. Economic analysis performed shows that the c-Trike is more economically feasible – having a 242.38% rate of investment (ROI), an 877,748.16 net present value (NPV), and a 0.41 payback period compared to 241.29%, 708,761.96, and 0.41 for conventional tricycles. The result of the study provides valuable input for the TODA operators, especially those with 2-stroke units, on which option is the most feasible as they are mandated to upgrade their tricycles. This could also be useful information for lawmakers in drafting legislation and policies supporting transportation modernization. (**Author's abstract**)

Keywords: *Climbing ability, CO₂ emission, Converted tricycle, Economic analysis, Mileage efficiency, Engineering*

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NP

0095

Development of Risk-targeted Seismic Hazard Maps for Low-rise and Mid-rise Reinforced Concrete Buildings in the Philippines *Peñarubia, Henremagne C. , Garciano, Lessandro Estelito O. , Mallari, Royce Ar*

The seismic hazard maps of the Philippines provide spectral acceleration mean values that describe the probability of occurrence of area-specific ground motion hazards due to earthquakes in the country. However other countries have progressed from developing hazard maps to risk-targeted maps that include information on the probability of collapse of buildings. This is the research gap that this study aims to bridge and, thus, developed maps of risk-targeted ground motions (RTGM) for the Philippines using the City of Manila as the area of focus. The maps will be created using the procedure suggested in ASCE 7-16 in obtaining the risk-targeted maximum considered earthquake (MCE_R). The probabilistic MCE_R will be created using the information obtained from the seismic hazard and the generic fragility curve that will represent the performance of buildings during a maximum considered earthquake (MCE) event. In this study, the seismic hazards were obtained using the same procedure, decision-making, and empirical formula as the one used in developing the Spectral Acceleration Maps of the Philippines (SAM PH). While the generic fragility curve was described by a function with a lognormal standard deviation, β , of 0.7. With a considered risk level of 1% probability of collapse in 50 yr, the developed RTGM maps are presented in this study. In the analysis of results, the probabilistic MCE_R is lesser than the MCE level spectral accelerations in the majority of the area in Manila due to the influence of the building's collapse capacity for stiff soil profiles. The opposite can be seen in softer soil profiles. However, the final MCE_R values are slightly larger than the MCE values due to the application of the directivity factors. **(Author's abstract)**

Keywords: *DSHA, MCE, MCER, PSHA, RTGM, Engineering*

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2023 August,

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0096

Effect of Electrostatic Interactions in the Separation of Magnetite and Silica using Enhanced Gravity Concentration

Baladad, Karlo Leandro D., Tungpalan, Djoan Kate T., Mendoza, Herman

This study investigates the effect of electrostatic interactions in the separation of magnetite and silica in aqueous media using enhanced gravity concentration. As the effect of electrostatic interactions becomes more prominent in finer size ranges, understanding this correlation can help in determining what conditions will improve the performance of enhanced gravity concentrations. Magnetite and silica suspensions at different coagulation conditions were prepared and subjected to enhanced gravity concentration using a Falcon L40 concentrator. The resulting separations were then related to the observed coagulation responses.

The zeta potential of magnetite as a function of pH and electrolyte concentration was measured using an electrophoretic method and the critical coagulation concentration of magnetite was determined using a UV-VIS Spectrometer. The total potential energy curves generated from the zeta potential and CCC data, showed the dominant forces that affect coagulation behavior at various pH levels. Repulsive forces were found to be most dominant at pH 11 for both magnetite-magnetite and magnetite-silica suspensions. Increased recovery of both magnetite and silica was observed at pH 3 where attractive forces are strongest both for one-component and two-component interactions. However, the increased recovery of both particles resulted in decreased separation efficiency at this condition. At pH 11, where repulsive forces are dominant for both one-component and two-component interactions, recovery of both particles decreased. The highest separation efficiency 64.1% was at pH 9. At this condition, magnetite-silica interactions were repulsive which led to the increased removal of silica. The attractive one-component interaction of the remaining magnetite particles led to its increased agglomeration and subsequently, increased magnetite recovery and grade at this condition. **(Author's abstract)**

Keywords: *Enhanced Gravity Concentration, Electrostatic Interactions, Falcon Concentrator, DLVO Theory, Zeta Potential, Engineering*

Electrochemical Corrosion of as-cast Pb-Ca-Sn Grid in Simulated Battery Electrolytes *Buquiz, Jan Lowell P., Mena, Manolo*

Pb-Ca-Sn alloys are one of the primary materials for the positive grids of automotive batteries. Despite the various developments in the properties of such alloys, positive grid corrosion remains to be one of the leading causes of battery failure. The study aims to determine the corrosion behavior of various parts of an as-cast Pb-Ca-Sn alloy used in service to provide insights on improving grid design and casting conditions. Experiments were carried out using Pb-Ca-Sn grids taken from the production line of a battery manufacturing plant. Two grid locations, A and B, were used to compare the difference in cooling rates during manufacturing. The chemical composition and microstructure of each grid location were characterized. Electrochemical Impedance Spectroscopy (EIS) plots, equivalent circuit analysis, and potentiodynamic polarization curves were used to evaluate electrochemical behavior at various test conditions. Chemical analysis showed that the composition of each grid location is similar. Photomicrographs illustrated that the microstructures are characterized by cellular structures consisting of the Pb-rich α phase with eutectic mixtures on the intercellular boundaries. Moreover, grain and cellular sizes are larger in A than in B. EIS results showed that the R_{CT} decreased as the working temperature increased. The decrease in R_{CT} may be associated with the reduction of active porous sites due to the formation of a more compact $PbSO_4$ layer. On the other hand, the R_p increased as the acid concentration and temperature increased for both grid locations. Furthermore, the R_p values at B are higher than in A. R_p increase may also be associated with the formation of a thicker passivating corrosion layer, suggesting faster corrosion rates at location B. The higher corrosion rates in B may be attributed to its finer grain size and cellular size. Polarization curves also showed that the R_p increased with temperature increase. **(Author's abstract)**

Keywords: *Corrosion, EIS, Lead-acid batteries, Lead alloys, Microstructure, Engineering*

Land Use and Land Cover (LULC) Assessment within the Batanes Protected Landscapes and Seascapes

Soriano, Deign Frolley C., Talkasen, Lynn J., Lumbres, Roscinto Ian C., Doyog, N

Declared protected areas have ecologically important landscapes that must be conserved and protected. Status of protected areas could be monitored through land use and land cover (LULC) assessments. LULC offers baseline data for integrated land use planning and improvement of existing policies are therefore necessary to be conducted. This study was conducted to monitor the existing LULC of six islands within the Batanes Protected Landscapes and Seascapes (BPLS) through a machine learning (ML)-based random forest (RF) classifier using multi-sourced data such as Landsat imageries' surface reflectance (SR), Landsat-derived land surface temperature (LST), and global ecosystem dynamic investigation (GEDI)-derived height (Ht) metrics and to determine the effects of the LST and Ht metrics to LULC classification. Four layer stacked images with different features were analyzed – including SR, SR-LST, SR-Ht, and SR-LST-Ht. The result of the LULC classification showed an accuracy based on Macro F1-score and Kappa (K) of 0.81 and 0.83, 0.83 and 0.86, 0.86 and 0.89, and 0.93 and 0.94, for SR, SR-

LST, SR-Ht, and SR-LST-Ht, respectively. When compared to the existing global-scale LULC, this study has higher accuracy than the GLAD and ESRI products, which have Macro F1-scores and K-values of 0.73 and 0.71, and 0.59 and 0.64, respectively. To conclude, the inclusion of LST and Ht information in addition to SR data in LULC classification can improve the accuracy by up to 12% and 11% based on Macro F1-score and K, respectively. The result of this study can serve as a reference for achieving improved and reliable LULC information that is necessary for monitoring fluctuations of the global earth's resources and comprehensive LULC planning. In addition, the technique used in this study can serve as a reference in generating reliable LULC information that can aid in the sustainable implementation of policies, rules, and regulations intended for declared protected areas like BPLS. **(Author's abstract)**

Keywords: *GEDI-height product, Global-scale LULC, Optical data, Protected areas, Thermal sensing, Engineering*

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2023 October,
(Filipiniana Analytics)
NP

0099

Machine Learning-based Prediction of the Likelihood of Colorectal Cancer Using miRNA Expression

Tomas, Rock Christian , Albano, Pia Marie , Fellizar, Allan , Serapio, Ezekiel Dmitri , Guimangunan, Tesah Mae , de Asa, Aaron Austin , Sultan,

[Background] Colorectal cancer (CRC) comprises 10% of all cancer diagnoses, making it the third most diagnosed cancer globally. Despite its prevalence, most current methods for identifying CRC lack sensitivity and consistency while being invasive and costly. Thus, this study aimed to develop artificial neural network (ANN) models that could accurately detect CRC using miRNA expressions in tissue and plasma samples. **[Methods]** The study used miRNA expression profiles of formalin-fixed paraffin-embedded tissue and plasma samples obtained from CRC patients and healthy controls. ANNs were trained to discriminate between CRC patients from healthy controls using the relative expression of miR-21-5p, miR-196b-5p, miR135b-5p, miR-92a-3p, miR-29a-3p, and miR-197-3p in colorectal tissues and blood plasma. Multivariate logistic regression (MLR) and decision tree (DT) models were used to compare the performance of the ANN models. **[Results]** The ANNs achieved an accuracy of 98.5 and 88.2%, a sensitivity of 90.9 and 80.4%, a specificity of 92.6 and 84.7%, and an area under the ROC curve of 0.92 and 0.83 for the plasma and tissue samples, respectively. Moreover, sensitivity analysis of the ANN models showed that miR-135b-5p and miR-92a-3p had the greatest influence in distinguishing CRC from healthy plasma and malignant from neoplasm-free colorectal tissues, respectively. However, only miR-135b-5p was significantly downregulated in both CRC plasma and malignant colorectal tissue samples. Results from the MLR and DT models support the results from the ANN sensitivity analysis. **[Conclusion]** Our results show that the trained ANNs were able to accurately and confidently detect CRC using the considered six miRNA expression levels in colorectal tissue and plasma samples, providing an accurate, rapid, and less-invasive approach to diagnosing CRC. **(Author's abstract)**

Keywords: *Artificial neural networks, Colorectal cancer, Diagnosis, Pathology, Plasma, Translational medicine, Engineering*

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(Filipiniana Analytics)
NP

0100

Microstructures of Austenitic Stainless Steel 56Fe25Ni16.6Cr0.9Si0.5Mn Solid-Treated with Different Cooling Rates

Mustofa, Salim, Insani, Andon, Lesmana, Joshua Gunawan, Sukaryo, Sulistioso Giat, Dimiyati, Arbi, Farihin, Parikin, Aziz, Ferhat, Dani, Mohammad, Panitra, Mardiyanto, Huang, Chin

A new synthesized 56Fe25Ni16.6Cr0.9Si0.5Mn austenitic stainless steel (ASS) was produced through casting and then annealing and normalizing at 1100 °C, followed by cooling at different rates. Microstructures of the samples were studied by using X-ray and neutron diffractometers, scanning, and transmission electron microscopes. The stainless steel had a face center cubic structure (X-ray diffraction profile). The microstructure of ASS consists of γ -austenite matrix and high Cr carbide particles in the interior grains and grain boundaries. It seemed that the annealing process affected information of γ -austenite grain size in the ASS, growing larger compared to grain size formed in the normalizing process, similarly by cooling into the air, water, and oil media. The $M_{23}C_7$ islands in the grain boundary formed into a larger size after annealing or normalizing processes, and in addition, the island shape was more elongated. No significant changes were found concerning the particle size and shape of M_7C_6 at the grain boundary of the ASS after annealing or normalizing. Neutron diffraction patterns confirmed the Fm3m space group symmetry of ASS as obtained by the XRD method, therefore establishing ASS as an austenite phase. Results of the uniform deformation method (UDM) analysis applied upon the high-resolution powder neutron diffractometer (HRPD) intensity showed that the deformation strain was 2.3705×10^{-4} . TEM results for ASS showed that the sizes of rectangular precipitates ranged from 63×32 nm to 84×42 nm with larger-sized irregulars reaching about 190 nm across. All these results showed that an ASS has been successfully synthesized and that it has a promising future to be used as a high-temperature structural material. **(Author's abstract)**

Keywords: *Annealing, Austenitic stainless steel, Casting, Microstructure, Normalizing, Quenching, Engineering*

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2023 June,
(Filipiniana Analytics)
NP

0101

Oxidation and Dissolution of Refractory Gold Concentrate in Alkaline Hypochlorite Solutions

Mendoza, Herman D., Regidor, Hanna Czarise E., Mena, Manol

With the decreasing availability of free milling gold ores today, the development of processes that can treat refractory ores are important. A promising option from these is chlorination. It is capable of both dissolving the gold and oxidizing the ore, which removes the “refractory” nature of the ore. A staged leaching process can then be used where the first part would focus on the pretreatment oxidation of the refractory ore, followed by the second part where the dissolution of the gold exposed will be the focus. In this study, a Box-Behnken test of the pretreatment process has been conducted. The chlorination process consists of oxidation using hypochlorite-bearing reagents at alkaline conditions. Screening tests were done to determine the significant factors, and it was found that the factors hypochlorite concentration, percent solids, and oxidation time had a significant effect on the oxidation and dissolution of gold. Three levels were set for each of these factors in the optimization tests, and results show that a gold recovery of 83% can be obtained at 4.3 hours of oxidation, 0.6 moles of hypochlorite and 28% percent solids from a sulfide concentrate grading 102.5 g Au, leaving 17.4 g/t Au in the tails. Powder XRD patterns and SEM-EDS results validated that oxidation took place. **(Author's abstract)**

Keywords: *Electrochemical Oxidation, Hypochlorite, Chlorination, Response Surface Methodology, Engineering*

Philippine Engineering Journal, Volume No. 43 Issue No. 2, 57-70
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(Filipiniana Analytics)
NP

PID-FUZZY Control System for Autonomous Underwater Vehicles (AUV): Highly Accurate FPGA Implementation

Puttamadappa, C. , Bhattachar

Because of the linear and nonlinear variations in the operating environment, autonomous underwater vehicles (AUVs) are one of the most difficult applications. The complexity of the control algorithm should be less for real-time implementation in a field programmable gate array logic (FPGA) device. In this work, a highly accurate FPGA implementation of PID-Fuzzy control strategy is proposed for an AUV operation that is extremely precise. Parameters such as weight, water density, and depth are used to perform highly efficient and accurate control for the proposed system. A type II fuzzy logic controller and accompanying proportional-integral-derivative controller are used to confine pitch and depth boundaries. The proposed design is modeled using SIMULINK software, and Verilog code is generated using hardware description language coder from MATLAB. Xilinx software is used to synthesize the Verilog code for spartan FPGA. The proposed technique improves the accuracy and reduces the response time when compared to the conventional control strategy. **(Author's abstract)**

Keywords: *Autonomous underwater vehicle (AUV), Field programmable gate array (FPGA), Fuzzy logic controller, PID controller, Real-time implementation, Engineering*

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NP

Predicting the Ultimate Capacity of Frictional Jacked Concrete Piles Installed in Mixed Silty Sands in the Philippines

Buensuceso, III, Be

Jacked piles have increasingly been used to support structural loads, though methods for ultimate axial capacity prediction and installation termination criteria remain relatively undeveloped compared to driven and bored piles. These methods were also primarily trained on databases from China and Hong Kong which have different soil conditions and pile jacking technology and methodology. This paper studies the utility of final jacking force (Pjack) readings as an estimate of the actual ultimate capacity of jacked frictional precast piles installed in 36 to 45 m of silty soils in the San Simon, Pampanga, Luzon region in the Philippines. The accuracy of existing capacity prediction methods are assessed vs. the well-established method of using capacity estimates from high-strain dynamic load tests (PDA tests). The ratios of PDA estimated capacities to final jacking forces during installation were an average of 3.58, much higher than empirically predicted ratios ranging from 1.12 to 1.59. This increase was attributed to the phenomenon of pile setup, though empirical pile setup formulas also significantly under-predicted the increase. This indicates existing pile jacking installation criteria and pile setup models may not be applicable for this pile and soil configuration. **(Author's abstract)**

Keywords: *Jacked piles, Load test, PDA tests, Pile foundations, Pile setup, Engineering*

Philippine Engineering Journal, Volume No. 43 Issue No. 2, 1-22
2022,
(Filipiniana Analytics)
NP

Review on the Real-time Implementation of IoT-enabled UAV in Precision Agriculture and the Overview of Collision Avoidance Strategies

Sureshkumar, P. , Jayarajan, Nireesh , Ganesan, Tamil

Drone-based monitoring is very convenient and effective in the modern era for monitoring large and dense areas where humans cannot monitor efficiently. Precision agriculture (PA) unmanned aerial vehicle (UAV) monitoring techniques make farmers more protective and knowledgeable about their fields. Modern PA drone employs a 5G-enabled Internet of Things (IoT) that captures field data and transmits it to the cloud with extremely low latency to make quick decisions. From anywhere, farmers can keep an eye on their farms. Also, they have a choice of manual or automated methods for executing the proper data-driven actions. Smart farming is substantially more efficient than traditional farming. This article gives an in-depth analysis of UAVs' real-time deployment of hardware, software, sensors, and IoT in agriculture for crop monitoring, weed identification, and collision avoidance. This research also covers the wide variety of collision avoidance algorithms utilized in both outdoor and interior conditions. **(Author's abstract)**

Keywords: *Collision avoidance, IoT, Hardware, Precision agriculture, Real-time implementation, UAV, Engineering*

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2023 June,
(Filipiniana Analytics)
NP

Rise Or Fall? How Local Factors Influence Coastal Sea Level in The Philippines

Bringas, Dennis , Blanco, Ariel , Siringan, Fernando , Amedo-Repollo, Charina Lyn , Pasaje, Nikki Alen , Alfante, Rey Mark , Rediang, Abegail , Bauzon, Angela , Flores, Paul Caesar , Reyes, Rosalie B., Ordillano, Marion , De Lara, Pocholo Migue

The Philippines being an archipelagic country has the fifth longest coastline in the world. Its shores are defined by varying geologic form and composition that defines how sea water could impact its configuration. Being in a tectonically active setting, the country is also affected by ground motion. Specifically, the vertical land motion (VLM) has a significant effect on the observed sea level along the coast. As it is surrounded by large bodies of water, ocean dynamics and climate pattern have also contributed to the variations of sea level. The changing climate altered the global atmospheric pattern that results in varying regional /local effects on the coastal sea level. These local factors are the reasons why sea level varies differently in different places with the global mean sea level (GMSL). This study investigated the coastal sea level trend in 25 out of 50 tide gauge (TG) sites. The observed TG sea level (TGSL) were computed and analyzed for trends. Similarly, sea level trends were also determined from retracked satellite altimeter (SA) products from different satellite missions. The influence of VLM, a non-climatic factor, on the sites were determined using Permanent Scatterer Interferometric Synthetic Aperture Radar (PSInSAR) and validated using data from GNSS (Global Navigation Satellite System) receivers collocated with the

TG. The investigation of the occurrence of El Niño was undertaken to explain the computed sea level trend.

Results showed that areas with long period of observations (19 years or more) exhibit an increasing sea level that varies from 1.38 to 13.13 mm/year. However, majority of the TGs that were installed in 2007 and 2008 recorded only 13 and 12 years of observation, respectively. A decreasing sea level trend were observed on said TGs except for those located in Palawan. Similar trends were also observed from sea surface height (SSH) from satellite altimeter. A 0.96 correlation was computed between TGSL and 20 Hz SSH. Investigation showed the strong influence of El Niño during this short period of observation that caused the sea level to fall. The effect of Pacific Decadal Oscillation (PDO) was not analyzed due to limited period of recorded data. The VLM contribution to the observed sea level was determined for 9 sites with collocated GNSS receivers. Most of these sites experienced land subsidence of around -3 to -7 mm/year. The PSInSAR and GNSS VLM rates have a correlation of 0.89. In Manila Bay where sea level rise is accelerating at 13.13 mm/year, one of the contributors is increasing river water loading. However, north of Manila, land subsidence showed 8-12 mm/year rate based on PSInSAR. **(Author's abstract)**

Keywords: Coastal Sea Level Rise, Vertical Land Motion, PSInSAR, Satellite Altimetry, GNSS, Engineering

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0106

School Reopening Simulations with COVID-19 Agent-based Model for the Philippine Regions

Saliba, Martin Thomas D. , Francisco, Nico Andrew G. , Bongolan, Vena Pearl A., Celeste, Jr., Jimue

Schools have been closed in the Philippines since March 2020 due to the COVID-19 pandemic. In 2022, the government already allowed a pilot run of limited in-person classes in low-risk areas. With such development, the present paper aims to explore the question “Is it safe to reopen schools with the current vaccination coverage?” We used an age-stratified COVID-19 agent-based model coupled with social contact probabilities to simulate school reopening and vaccination scenarios in the 17 regions of the country. Through these simulations, we found down tick points for infections and deaths—the vaccination coverage at which we do not expect increases in infections and deaths should schools reopen. We then calculated the School Reopening Viability (SRV) of the regions and visualized these scores with a stop-go map for school reopening. Simulation results suggest that all regions except Regions 7, 9, BARMM, and 13 can already reopen schools without the fear of upticks in infections nor deaths. These regions have lower vaccination coverages relative to the rest of the country, especially against the case of Luzon which has the highest vaccination coverage. We recommend that the areas of concern ramp up their vaccination efforts before reopening schools. At the same time, behavioral factors (mask-wearing, physical distancing, handwashing) and disease resistance factors (healthy living habits) shall be enforced once schools reopen. Finally, school reopening shall be gradual to ensure the crafting of data-driven (hospital utilization, positivity rate) policies. **(Author's abstract)**

Keywords: School Reopening, Simulations, Vaccination, SEIR, Agent-based Model, Philippines Regions, Omicron, Age Stratification, Engineering

Towards Photovoltaic Module Waste Management in the Philippines: Review of Strategies and Regulatory Framework

Duran, Jeffrey Z. , Diccion, Jr., Anto

The drastic increase in solar energy dependency would yield a tremendous amount of waste worldwide, and sustainably managing the emerging PV waste prevents potential environmental impacts and harm to humanity. This paper presents a systematic review of literature to identify strategies for PV module waste management and an internet-based assessment of PV module waste regulations in the Philippines. The systematic review utilized four key phrases to identify relevant articles. The title and abstract of the resulting articles from 2012 to 2022 were screened based on selection criteria and relevance, and 54 articles were selected. In addition, an internet-based assessment was conducted to determine the regulations of PV module waste in the country. Several key themes were also discussed that include waste assessment, global regulatory framework and policies, and end-of-life management encompassing monitoring, collection, recycling, and supply chain for recovered secondary materials. In addition, strategies for the various stages of the life cycle of PV modules were presented in the review. The identified waste management strategies include carefully designed PV modules to withstand breakage, utilization of recovered secondary materials, correct installation procedures, regular PV waste assessment and monitoring, efficient collection and fast classification of PV module waste, and sustainable recycling and recovery methods and technologies. Furthermore, the assessment shows that there is no specific regulation in the country that deals with PV module waste. Policies for PV module waste monitoring, take-back scheme, and subsidization should be explored. Indeed, PV module waste management strategies and regulations in the Philippines are critical to managing emerging waste effectively. **(Author's abstract)**

Keywords: *Photovoltaic module, Waste management, Strategies, Regulations,, Framework, Circular economy, Engineering*

Window Direction Factor toward PMV and PPD Values in Classrooms

Setyowati, E. , Suradhuhita, P.P., Prianto

Thermal comfort is an important element in students' learning activities. The object chosen was the classroom of the Sawah Besar 01 Public Elementary School in Semarang, Indonesia built in a densely populated area, resulting in a window design that has varying orientation directions but with a homogenous façade design. This affects the level of thermal comfort in the classroom. Data analysis was carried out quantitatively – namely, to obtain a thermal comfort index, PMV, and PPD according to the Indonesia National Standard and ASHRAE. The thermal comfort conditions of all selected rooms on the 1st and 2nd floors, either indoor or outdoor, did not meet the comfortable thermal comfort standard for classrooms. The PMV index is above +1 and is mostly categorized as slightly warm, warm, and hot, and all of the PPD percentages are above 10%, indicating that most of the occupants are not satisfied with the temperature in the classroom. New façade opening designs and mechanical ventilation

aids need to be applied to improve thermal comfort according to the Indonesia National Standard and ASHRAE. (Author's abstract)

Keywords: *Comfort, PMV, PPD, Thermal, Engineering*

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ENVIRONMENTAL SCIENCE

0109

Cave Resource Evaluation Using Sensitivity Scoring Index Applied to the Capisaan Cave System, Nueva Vizcaya, Philippines *Calderon, Margaret M. , Caranza, Jay*

Caves are significant nonrenewable resources that provide a variety of ecosystem services with varying sensitivities to disturbance. This study assessed the sensitivity of resources found in the Capisaan Cave System (CCS) in Kasibu, Nueva Vizcaya to below and above-ground human activities or disturbances by adopting a standardized scale or index. Cave passages comprising the whole cave system were divided into subsections and were individually evaluated. Parameters included the characterization of the biological, hydrological, geological, mineralogical, paleontological, and cultural resources of the cave system. Inventory methods such as belt transect, point-transect distance sampling, opportunistic sampling, and total enumeration were employed. Results showed that animals associated with CCS both at the surface and subsurface levels had high diversity and endemism. Hydrology inside and surrounding CCS is also very active and continuously shapes the geological structure of CCS. Among the sensitivity parameters, biota was found to be the most sensitive to disturbance followed by speleothems and hydrology resources. The computed sensitivity of resources found in CCS places it in the “slightly sensitive” classification. However, the study recommends that managers look at the individual parameter scores of each cave section instead of simply looking at the overall score of the cave system. The sensitivity classification of CCS was changed to “severely sensitive” when the zero-indexed parameters were removed from the computation, with Section 1 obtaining a classification of “critically sensitive” and, therefore, requiring more strict and intensive management interventions. This information is important in deciding where and how to manage specific sections without sacrificing future ecological and economic uses. Overall, the study successfully tested the applicability of the modified existing standardized cave sensitivity assessment index for a tropical cave, providing a comprehensive method that may serve as a convenient model for assessing other cave systems in the country (Author's abstract)

Keywords: *Cave inventory, Cave management, Cave resources, Sensitivity assessment, Scoring index, Environmental science*

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FISHERIES

0110

COVID-19 Impacts on Food Security and Income of the Fisherfolk in Magallanes, Sorsogon, Philippines

Omoto, Annie T. , Calaminos, Franklin P. , Corral, Laurence Elmer H. , Hibay, Janet M. , Bailon, Jinky D. , Mendoza, Lynn C. , Belgica, Teresa Haide R. , Orgela, Elden G. , Longavela, Mabelle R. , Malto, Mark Ariel D. , San Pablo, Mae H. , Dumilag, Richard V., Chua, Vivien L. , Berdin, Leny

The enormity of the COVID-19 pandemic has led authorities to seek strategies that collect information essential for future health system planning as well as disaster and pandemic preparedness. Focusing on the food security and income situation at a local-scale is all the more imperative given that the municipal fisherfolk has a huge role in the development and success of the Philippine fisheries sector. Here, we turn to assess the impact of the COVID-19 pandemic on the food security and income of municipal fisherfolk in Magallanes, Sorsogon, Philippines. Our survey data from 475 respondents suggested that the fisherfolk households in Magallanes during the COVID-19 crisis, generally experienced food insecurity without hunger. Using the 18- item questionnaire of the US Department of Agriculture (USDA), we identified specific sites that experienced severe food security condition with emphasis on households with dependent members. A significant association based on correlation analysis was found between the level of food security condition and the number of households and year in occupation. Magallanes fisherfolk reacted variously to several challenges brought about by the COVID-19 crisis. Fish availability and demand, and vulnerability to diseases were issues nugatory for the fisherfolk in Magallanes, however, problems directly associated with price increase were identified as impactful (i.e. lack of capital and high cost of supplies/inputs). Difficulties brought by travel restrictions and social distancing were particularly felt by traders and vendors. Taken together, our results demonstrate that the pandemic has compounded the food security and income disadvantages in fisherfolk of Magallanes. We hope that our study sets the foundation to improve the food security monitoring in fisheries households elsewhere in the Philippines (i.e. detect what specific population suffer and where they are), as well as future decisions for emergency management. (Author's abstract)

Keywords: *Livelihood, Municipal fisherfolk, Philippine fisheries sector, Food security, Fisheries*

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0111

Influence of *Ipomoea pes-caprae* Cover on the Density, Size, and Architecture of Ghost Crab (*Ocypode* sp.) Burrow in Sandy Beach Ecosystem

Santander de Leon, Sheila Mae , Diamante, Rose

The sandy beach ecosystem is a vital ecological link between the sea and land through its various ecosystem services. This study determined the morphology and activity of ghost crab (*Ocypode* sp.) burrows in the ipomoea zone and exposed zone at three sites within the sandy beach ecosystem. Ghost crab burrow characteristics and activity were revealed to be influenced by the ipomoea cover. The density of burrows significantly varied based on increasing observations from the exposed zone to the ipomoea zone at all sites. Higher active burrows were observed at the ipomoea zone indicated by fresh sand or traces by individuals around the burrow openings. Burrow castings generated shapes resembling letters I, J, S, V, Y, and inverted Y. Burrow depths at the exposed zone appeared deeper than the ipomoea zone at all sites. The findings stressed the dynamic relationships of flora and fauna in sandy beach tropical ecosystems such as in the Philippines, highlighting the vegetation as an important component of beach habitat, as well as the need for equal attention and management of these often neglected ecosystems. (Author's abstract)

Keywords: *Fisheries, Beach forest, Burrow activity, Philippines, Sandy beach*

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Looking from above the Seven Crater Lakes, Arrangement, and Limitation of Aquaculture Structure

Brillo, Bing Balta

The Seven Crater Lakes—Sampaloc Lake, Bunot Lake, Palakpakin Lake, Pandin Lake, Yambo Lake, Mohicap Lake, and Calibato Lake—are work-in-progress to address and conclude the aquaculture structure impediments. This paper examines the aquaculture structure's configuration of the maar lakes by looking into the fish cage zone's arrangement and limitation attributes. This academic work embraces a subjective-qualitative approach and takes from the above perspective. The inferences are: [1] Pandin Lake, Yambo Lake, Mohicap Lake, and Sampaloc Lake have attained the fish cage structures' restriction, *i.e.* Sampaloc Lake has accomplished, whereas Pandin Lake, Yambo Lake, and Mohicap Lake have to be satisfied the fish cage structures' dimension, alignment, and distance; [2] Palakpakin Lake has confirmed the fish cage structures' reduction, as well as the fish cage structures' dimension, alignment, and distance, *i.e.* Palakpakin Lake shows that the aquaculture structure's configuration has not been strictly observed and, hence, this requires stringent implementation; and [3] Bunot Lake and Calibato Lake have not yet conformed to the fish cage structures' reduction, as well as the fish cage structures' dimension, alignment, and distance. Bunot Lake and Calibato Lake are still behind the rest and, thus, these necessitate responding urgently. Overall, these central features are rudimentary but essential requirements in the crater lakes—whether complementing, reciprocating, or augmenting from conservation-development connection to the aquaculture-tourism nexus. (**Author's abstract**)

Keywords: *Aquaculture structure, Arrangement, Limitation, Maar lakes, Satellite imagery, Seven Crater Lakes, Fisheries*

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FOOD SCIENCE AND TECHNOLOGY

Food and Nutrient Consumption Patterns of Filipino Pregnant and Lactating Women Based on a Nationwide Survey

Ducay, Apple Joy D. , Tabud, Dexter G. , Platon-Desnacido, Josie , Goyena,

Due to the limited studies focusing on micronutrient intakes of pregnant and lactating women, and important dietary sources in the Philippines, this study aims to provide an insight into the food and nutrient consumption pattern of pregnant and lactating women. The objectives were to: [1] identify the food groups commonly consumed and dietary patterns of Filipino pregnant and lactating women; [2] describe the macro- and micronutrient intakes of these women; [3] assess the adequacy of these intakes against dietary references; and [4] identify important food sources of their energy and nutrient intakes. This study involved a cross-sectional secondary analysis of the data of 1,474 pregnant women and 4,571 lactating women covered in the 2018–2019 Expanded National Nutrition Surveys (ENNS). Food and beverage intakes were collected using a 24-h food recall method. Energy and nutrient intakes were calculated and analyzed in relation to the Philippine Dietary Reference Intakes (PDRI). Dishes predominantly consumed by pregnant and lactating women were comprised of rice and rice products, fish and products, and vegetables. Cereal consumption is higher, whereas there was a low consumption of meat, milk and dairy products, eggs, dried beans, nuts, and seeds, starchy roots and tubers, and

fruits. The mean energy intakes of pregnant and lactating women were below the recommended energy intake (REI). The majority of pregnant (83.6%) and lactating (81.2%) had intakes below the estimated average requirement (EAR) for protein. Mean intakes of all micronutrients except niacin and phosphorous were below the EAR. Iron, calcium, vitamin C, and riboflavin intakes were furthest from the EAR. Less than 1% of pregnant and lactating women met the EAR for iron, whereas less than 10% met the EAR for vitamin A. Rice and rice products were the most important dietary sources of energy, protein, iron, thiamin, riboflavin, niacin, and phosphorus in the diet of pregnant and lactating women. The findings of this study reflect the low intakes of energy, protein, vitamins, and minerals due to poor dietary quality and food sources, thus increasing the risk of nutrient deficiency among Filipino pregnant and lactating women. **(Author's abstract)**

Keywords: *Factor analysis, Filipino pregnant and lactating women, Food and nutrient consumption patterns, Nutrient intakes of pregnant and lactating women, Food science and technology*

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0114

Monitoring the Consumption of Sugar-sweetened Beverages: an Input to Republic Act No. 10963 (TRAIN LAW)

Duante, Charmaine A. , Ducay, Apple Joy D. , Platon-Desnacido, Josie , Dasco, Ma. Lilibeth P., Vargas, Marin

Excessive consumption of sugar-sweetened beverages (SSBs) has been alluded to as a contributor to increasing public health problems – including overweight and obesity, diabetes, and other metabolic diseases. Republic Act No. 10693 or the Tax Reform for Acceleration and Inclusion (TRAIN), passed into law on 19 Dec 2017, has included in its scope the collection of excise tax on SSBs and earmarking of this for the implementation of the Universal Health Care Act. The study determined the trend in the consumption of SSBs among households and population groups from 2013 to 2018–2019. The data were taken from the Food Consumption component of the 2013 National Nutrition Survey (NNS), the 2015 Updating of the Nutritional Status of Filipino Children and Other Population Groups, and the 2018–2019 Expanded National Nutrition Survey (ENNS). Data for this study also includes the household's place of residence and wealth status, as well as individuals grouped by age and physiological status. Results showed the proportion of households and individuals consuming SSB and volume intake declined from 2013–2018–2019. Volume intake per day and the percentage of households consuming carbonated beverages, sweetened powdered drinks, and sweetened tea declined in 2018–2019. The richest and rich households had higher SSB volume intake. Sweetened juice drink intake declined across all age and population groups, whereas sweetened tea volume intake declined among adolescents and adults. The decline in SSB intake may be attributed to the implementation of the TRAIN Law in 2018. Restricting inappropriate advertisement, clear labeling, and strong advocacy and public education on the health consequences of consuming SSBs in schools and communities should be done to sustain further decline. Moreover, tax incentives may also be granted to manufacturers that adhere to proper labeling. **(Author's abstract)**

Keywords: *ENNS, NNS, SSBs, Sugar-sweetened beverages, TRAIN Law, Food science and technology*

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0115

Optimization of Shelf-stable and Ready-to-eat Custard

Lascano, Reifrey A. , Cantre, Dennis V. , Catilo, Lara Mariz Mulimbayan, Dorado, Adeliz

The study was conducted to develop a shelf-stable and ready-to-eat custard with optimum overall product acceptance using Response Surface Methodology (RSM). The three factors of Box-Behnken design which are sugar content, processing temperature, and duration of thermal processing, were varied to maximize the overall acceptability (OA). The suggested optimized process with a predicted OA of 9.75 was a combination of 259.977 grams of sugar content, a processing temperature of 118 °C, and a 40-minute duration of thermal processing. The obtained data and mean confirmatory OA are within the 95% tolerance interval of the predicted OA which confirms the validity of the optimized process. The physicochemical analysis shows a pH of 6.27, 0.0825 % lactic acid, and a TSS of 32 °Brix. The heat penetration test revealed that the optimized custard behaves as a solid, conduction-heating food. The obtained lethality exceeds the minimum required for thermal sterilization with an F_0 value of 24.16 minutes, thus, confirming that the optimized process is sufficient in developing a shelf-stable and ready-to-eat custard. Static shelf-life testing showed a stable product as it did not show any signs of visual spoilage after sixty days at room temperature. **(Author's abstract)**

Keywords: *Optimization, Shelf-stable, Custard, Response surface methodology, Heat penetration, Food science and technology*

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0116

Utilization of Out-of-specification Unripe Cavendish Banana [*Musa acuminata* (AAA)] as Banana Powder

Flores, Jr., Bienvenido B. , Ramos, Joanna Marie F. , Estudillo, Pete Maverick Nicole , Dela Cruz, Kristine Ann S. , Gomez, Rosela M. , Falco, Maria Elsa M. , Manalo, Monica R., Cortado, Christian Niame

Around 5–20% of the total banana crop in the Philippines is rejected because it does not meet the specifications for export as fresh fruit. This study aimed to utilize the out-of-specification unripe Cavendish banana of local exporters into banana powder. The effects of different predrying treatments such as blanching time and concentrations of citric acid and ascorbic acid on the properties of the resulting Cavendish banana powder in terms of moisture content, water activity, color, solubility, water absorption capacity, bulk density, water holding capacity, and % yield were determined using a central composite face-centered response surface methodology design. Significant mathematical models were generated that predicted the effects of individual and combined influences of pre-drying treatments. Results showed that ascorbic acid was the main factor that influence the lightness, water activity, swelling power, bulk density, and water absorption capacity of banana powder. Results of the optimization process suggested that the desirable pre-drying treatments for banana powder were a blanching time of 0–5 min, as well as soaking in ascorbic acid ranging from 0.01–0.10% and in citric acid ranging from 0.07–0.10%. The identified optimal treatment ranges for blanching time, ascorbic acid concentration, and citric acid concentration provide valuable insights for producing acceptable, safe, and highquality banana powder. By utilizing out-of-specification bananas and transforming them into value-added intermediate products like powder, the banana industry can reduce waste, maximize resource utilization, and create a more environmentally friendly and economically viable approach to banana production. **(Author's abstract)**

Keywords: *Banana powder, Cavendish banana, Optimization, Out-of-specification, Response surface methodology, Food science and technology*

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Volatiles Fingerprinting of Aromatic Rice Cultivars for Varietal Discrimination Using Gas Chromatography–Flame Ionization Detector

Sevilla, III, Fortunato B., Serafico, Mich

Aromatic rice has become an important commodity in global trade and commands a market price much higher than that of ordinary rice; thus, evaluation and monitoring of its authenticity have become a major concern among consumers and traders. Mass spectrometry, olfactometry, and flame photometry have been incorporated with gas chromatography to differentiate rice varieties. However, these systems are complex, expensive, and time-consuming. This study investigated the combination of headspace gas chromatography–flame ionization detector (HS-GC/FID) with multivariate data analysis for the chemometric differentiation of aromatic rice. The seven cultivars Basmati, Dinorado, Jasmine, Milagrosa, NSIC Rc148, Rc342, and Rc344 were characterized by different volatile patterns. Differences in the concentrations of volatiles were found to be useful in differentiating the varieties based on patterns and clusters generated through principal components analysis (PCA) and agglomerative hierarchical clustering (AHC), respectively. Visual patterns from the PCA prove that the technique was able to accurately classify (non-error rate $\approx 95\%$) the samples into different varieties. Correspondingly, AHC generated three clusters: [Group I, imported] Basmati, Jasmine, and NSIC Rc342 (in-bred rice with Jasmine parental line); [Group II, in-bred] NSIC Rc148 and Rc344; and [Group III, traditional Philippine rice] Dinorado and Milagrosa. Results demonstrated that chemometric analysis of HS-GC/FID chromatograms can be a reliable technique of high potential to discriminate aromatic rice samples based on their volatile fingerprints. The study provided a possible inexpensive and non-destructive alternative that has not been explored before to assess the authenticity of rice varieties using an existing analytical platform. (**Author's abstract**)

Keywords: *Aromatic rice, Chemometrics, Gas chromatography, Headspace, Food science and technology*

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FORESTRY

Fire Resistance Properties of Low-density *Neolamarckia cadamba* (Roxb.) Bosser Timber

Salim, Rafidah Md., Hassan, Affendy, Ling, Wen Shen, Liew, Kang

The inherent flammability of timber rises the concern of society about the stability and firmness of timber materials when exposed to fire. This study illustrated the fire resistance properties of low-density *Neolamarckia cadamba* timber to evaluate its charred area (CA), charred depth (CD), mass loss rate (MLR), and charring rate (CR). Three different burning durations – 60, 90, and 120 min – were subjected to the timber test pieces following the NIST PS1-09 2010 standard. The CA and CD of the test pieces were measured using ImageJ before the determination of MLR and CR. *N. cadamba* showed a statistically significant difference on the top CA (14040.56 mm²) at 90 min compared to its side CA (1957.93 mm²). CD remained statistically unchanged for three burning durations. Top CA increased gradually with burning durations. Side CA and CD, however, were reduced to 1957.93 and 17.84 mm², respectively, for 90 min, before being increased back to 120 min. For CR and MLR, a gradual dropped in trend can be seen in the burning durations. Significant differences were detected when comparing the CR (0.30 mm/min) at 60 min with that in 90 min (0.20 mm/min), whereas the MLR was 2.15 g/m²s

at 60 min with 1.42 g/m²s at 120 min. Generally, top CA, side CA, and CD showed an increased trend in the area and depth value. whereas CR and MLR showed the opposite. **(Author's abstract)**

Keywords: CA, CD, CR, Fire resistance, MLR, Forestry

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GEOLOGY

0119

Raindrop Size Distribution (RSD) Characteristics during the Southwest Monsoon Period in Western Luzon, Philippines

Sajulga, Ramjun A. , Pura, Alvin G. , Ibañez, Marco Polo A., David, Shirle

The raindrop size distribution (RSD) characteristics over western Luzon during the Southwest Monsoon (SWM) periods from 2020–2022 are examined using a network of OTT PARSIVEL2 disdrometer. The three-year worth of RSD observations was collected from four disdrometer stations – namely, Science Garden, Quezon City (SG; 14.6° N, 121.04° E); La Mesa watershed, Quezon City (LM; 14.7° N, 121.07° E); Clark, Pampanga (CK; 15.18° N, 120.5° E); and Malolos, Bulacan (MS; 14.8° N, 120.8° E). Results show significant RSD differences between MS and CK stations. On average, the RSD over the MS station is dominated by a high concentration of relatively smaller raindrops, whereas large raindrops are more prevalent over the CK station. On the other hand, similar RSD properties and integral rainfall parameter (IRP) values were observed over SG and LM. In all the stations, values of mass-weighted mean diameter (D_m) and normalized intercept parameter ($\text{Log}_{10} N_w$) are higher in convective than stratiform rainfall. However, convective rainfall over the CK station has the highest values of mass-weighted mean diameter (D_m) during the SWM period. The diurnal variation of RSD also showed higher D_m over CK station, especially in the late afternoon to early evening hours. Radar reflectivity–rain rate (Z - R) relations derived from the RSDs at each station showed a clear difference between stratiform and convective rainfall. The Z - R relations obtained from each station are found to be different from the conventional Marshall and Palmer relation but similar to Rosenfeld's tropical relation. The shape-slope (μ - Λ) relations derived from the gamma RSD are also shown to be distinct at each location. Despite being influenced by a similar synoptic system during the SWM period, the geographical setting of the stations and orography may be the primary reasons for the observed RSD differences. **(Author's abstract)**

Keywords: PARSIVEL2 disdrometer, Rain size distribution, Southwest Monsoon, Geology

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NP

HEALTH AND WELLNESS

0120

Arnis-based Exercise Program for Balance Control in Community Dwelling Older Adults: Study Protocol for a Pilot Randomized Controlled Trial

Sanchez, Caitlin Joy A. , Masibay, Johna R. , Geli, Vianca Mae L. , Lacorte, Jose Raphael L. , Desquitado,

Kyrell Patrick , Cortez, Jaisen Lluch F. , Arevalo, Jasneer Tricia C. , Buan, Jim Carlo S. , Orpilla, Vergel B. , Manlapaz, Donald G. , Lipardo, Donald S., Villanueva, Alyssa Denise

Introduction: Aging causes balance impairments and increases falls in older adults. Martial arts interventions incorporated into exercise programs have been shown to improve balance. Further investigation is needed on the effectiveness of Arnis, a Filipino Martial Art, in improving balance control of older adults.

Objectives: This study primarily aims to determine the effects of an Arnis-based exercise program on balance control systems of healthy community-dwelling older adults. This study also aims to describe its effect on older adults' concerns about falling and lower limb functional strength.

Methods: This will be a single-blind, pilot randomized controlled trial. Participants will be randomly allocated to either the intervention or control group. The intervention group will perform an Arnis-based exercise program for 40-60 minutes per session three times a week for 12 weeks. The control group will continue to do their usual activities for the duration of the study. These daily activities may include home gardening, physical exercises, watching television, reading a newspaper, listening to the radio, and engaging in social activities. Participants will be measured at baseline and 12 weeks after for (1) balance using the Berg Balance Scale and Timed-Up and Go Test; (2) concern for falling through the Falls Efficacy Scale-International Filipino; and (3) lower limb strength through the 30-second Chair Sit-to-stand Test. Data will be analyzed through independent and paired t-tests. A p-value < 0.05 is considered significant.

Expected Results: Significant improvements in the balance scores in the intervention group are expected after 12 weeks of the Arnis-based exercise program, along with its effects on concerns for falling and lower extremity strength. The pilot study will provide data on the effectiveness of Arnis as a reference for future larger experimental studies. **(Author's abstract)**

Keywords: *Older adults, Balance control, Arnis, Exercise program, Protocol, Health and wellness*

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(Filipiniana Analytics)
NP

0121

Consumption of Household Disinfectants during the COVID-19 Pandemic in Sorsogon, Philippines

Olipany, Ruby D. , Chua, Vivien L. , Berdin, Leny D. , Corral, Elmer H. , Bailon Laurence Jinky D. , Calaminos, Franklin P. , Enmel, Carmela N. , San Pablo, Mae H. , Hibay, Janet M. , Mendoza, Lynn C. , Belgica, Teresa Haide R. , Orgela, Elden G. , Malto, Mark Ariel D. , Dumilag, Richard V. , Longavela, Mabelle R., Mintu, Cynthia B. , Laza, Benilda O. , Gerard, John Patrick Z. Ruiz, Caesar Fran

Knowledge of behavior and perception changes about the use of household disinfectants in the Philippines during the COVID-19 pandemic is largely unexplored. Through a survey, we took into consideration the locals' responses from Sorsogon, Philippines. Alcohol and oxidizing agents were found to be the most commonly used household disinfectant products in Sorsogon. Most of the respondents have shifted to the everyday use of disinfectant products during the pandemic. Increased disinfectant consumerism was positively associated with genders, employed respondents, and students but not among housewives and non-employed respondents. Most of the respondents agreed that various factors are needed to consider when choosing disinfectants. They were also knowledgeable about the possible effects of disinfectant wastes on the environment. How would these collective positive behavior changes during the new normal era warrant further attention. **(Author's abstract)**

Keywords: *Alcohol, Consumption behavior, Hand sanitizers, Protection motivation theory (PMT), Health and wellness*

Effectiveness of Using Exercise App in Improving Exercise Adherence and Aerobic Endurance of Football Players

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Introduction. The use of mobile apps known as mHealth is starting to shape the delivery of physical therapy care not only in patients but also to the healthy population. Using an exercise app is a potential strategy to promote physical activity among individuals. Thus, this pilot study examined the utility of the Nike® Training Club app in increasing exercise adherence and enhancing aerobic endurance.

Methods. The study utilized one-way repeated measures over time quasi-experimental design. It used purposive sampling to select 10 college football players aged 18-25 years old. After downloading the app, the participants were required to perform a workout plan composed of 15–45 minutes workouts through circuit interval training. The 20-day workout plan was done for 6 weeks (3-4 workouts per week). Aerobic endurance was measured at baseline and every after 2 weeks of intervention using Cooper’s 12-minute run test.

Results. An extremely high adherence rate (85%, SD = 2.11) to exercise was exhibited by the participants based on recorded logs in the app. Also, the participants agreed that the app was easy to use ($\bar{x} = 3.9$, SD = .18) due to its user-friendly interface, uncomplicated design, and comprehensive features. Results also showed an improvement in their aerobic endurance at the end of the 6-week training with a change of 3.8 ml/kg/min, however, ANOVA showed no statistically significant difference in VO2 max from baseline to post-tests [$F(3, 10) = 2.18$, $p = .11$].

Discussion. A high adherence to exercise may be achieved when exercise is facilitated using the app. The app has potential to provide information that could lead to improvements in aerobic endurance and can be a useful tool in maintaining an active lifestyle among the well population. (**Author's abstract**)

Keywords: *Aerobic endurance, Exercise adherence, Football, mHealth, Nike® Training Club, Health and wellness*

Integration of Monitoring for Parasitologic Status for Schistosomiasis and Soil-transmitted Helminthiasis Control Programs with Nutritional Status of Pre-school and School Age Children in Selected Municipalities in Northern Leyte, the Philippines

Naig, June Rose A. , Lumangaya, Carlo R. , Medina, John Robert C. , Belizario, Jr., Vicente Y., Cuayzon, Agne

The periodic collection of parasitologic and morbidity indicators is recommended by the World Health Organization (WHO) to monitor schistosomiasis (SCH) and soil-transmitted helminthiasis (STH) control programs. In 2017, the DOH-CHD VIII (Department of Health–Center for Health Development Region 8 Office)

– in collaboration with UP-NTDSG (the University of the Philippines Neglected Tropical Diseases Study Group) – conducted a monitoring activity aimed at determining [1] the prevalence and intensity of SCH and STH; [2] seroprevalence of SCH; and [3] prevalence of stunting, underweight, wasting, and anemia in pre-school-age children (PSAC) and school-age children (SAC) in selected municipalities in the province of northern Leyte, the Philippines as part of monitoring the local implementation of SCH and STH control programs. Stool samples were collected, processed using the Kato-Katz technique, and examined through microscopy. Blood specimens collected from SAC were tested for the presence of *Schistosoma japonicum* antibody using the IgG ELISA (enzyme-linked immunosorbent assay) kit. Data on anthropometric measurements and hemoglobin levels were collected with adherence to WHO guidelines. Secondary analysis of the gathered data showed that SCH prevalence in SAC was 3.1%, but SCH seroprevalence was 83.1%. Although STH prevalence met the national target of < 50%, heavy-intensity STH prevalence remained higher than the global target of < 2%. The overall prevalence of underweight, stunting, and wasting were 19.2, 38.0, and 10.6%, respectively. STH was significantly associated with stunting in PSAC ($p = 0.030$) and anemia in SAC ($p = 0.033$). The monitoring activity demonstrated the utility of an integrated monitoring scheme for SCH and STH control programs and nutrition programs at the local level. This model can be adopted for optimization and utilization by national programs for monitoring and may likewise benefit local government units for purposes of policy and planning. **(Author's abstract)**

Keywords: *Integrated monitoring, Nutrition assessment, Parasitologic assessment, Schistosomiasis, Soil-transmitted helminthiasis, Health and wellness*

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0124

Prevention and Control Measures of Hand, Foot, and Mouth Disease in Mueang Phitsanulok District, Thailand

Homsuwan, Rungphetch, Kanokthet, Than

Hand, foot, and mouth disease (HFMD) is a contagious viral infection, primarily in infants and children aged younger than 5 yr. HFMD has been widely spread in Asia. Of the infected children, approximately 83% were caused by Coxsackievirus A16 and were relatively mild, but serious complications involving the central nervous system can occur due to Enterovirus 71. The purpose of this study was to develop social measures to prevent and control HFMD in Muang Phitsanulok District, Thailand. The multistage mixed method was conducted from February–December 2021 on 436 participants. Multiple regression was used to analyze the factors affecting HFMD prevention and control behaviors in the first phase, which were the caregiver's attitude, family income, caregiver's secondary education, and awareness of the disease situation. For the next step, the findings were taken back to communities and the social measures developed through community participation. The developed social measures were guideline-based and consisted of two parts: prevention and control of disease measures. The stakeholders were classified into five social sectors – including [1] caregiver; [2] nursery, early childhood development center, and kindergarten; [3] primary care unit; [4] the Bureau of Public Health and Environment Municipality; and [5] private sector. The social measures were considered in credibility and feasibility by nine experts in a connoisseurship seminar. Finally, the expert opinions were made congruent for all measures. The recommendation for improving HFMD prevention and control in the community is for low-income groups to support and promote HFMD prevention and control behaviors. All relevant sectors should conference together to inform the results of their operations and collaborative problems solving. In addition, effective communication channels should be developed for all sectors. **(Author's abstract)**

Keywords: *Early childhood, HFMD, Measures, Prevention and control, Health and wellness*

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Self-efficacy with Telehealth Examination: The Doctor of Physical Therapy Student Perspective

Manella, Kathleen J. , Domenech, Manuel A. , Allen, Brad , Hooper, Troy , Brismee, Jean-Michel , Campbell, Derr

Introduction. The shift to telehealth exposed gaps in our understanding of how physical therapy students perceive patient assessment in a remote situation using the examination component of the patient/client management (PCM) model. The purpose of the study was to compare Doctor of Physical Therapy (DPT) students' self-efficacy performing patient assessment using the examination component of the PCM model using telehealth compared with conventional examination. To achieve the purpose of this study, the Physical Therapist Self-Efficacy (PTSE) scale was used. More specifically, self-efficacy in clinical reasoning was measured using the following items: (1) PTSE total score (2) performance of tests and measures, (3) determining when to refer to another practitioner, and (4) screening for primary medical disease.

Methods. A survey-based descriptive and exploratory repeated measures design was used, with surveys distributed to entry-level DPT students during their clinical experiences in the United States during the Fall 2020 semester. A convenience sample of 35 second- and third-year entry-level DPT students who reported provided both telehealth and traditional examinations during clinical experiences was used. Descriptive and inferential statistics were used to evaluate within group differences comparing student self-efficacy using telehealth and conventional examination.

Results. Wilcoxon sign ranks revealed statistically significant differences in self-efficacy scores of students conducting patient assessment using telehealth compared to conventional examination. More specifically, scores for telehealth were lower ($P < 0.001$) compared to conventional examination in PTSE total score, performance of tests and measures, determining when to refer to another practitioner, and medical screening for primary disease.

Discussion. Doctor of Physical Therapy students' self-efficacy was lower when providing telehealth across all PTSE questions pertaining to the examination component of the PCM model. Exploring telehealth content and sequence in entry-level physical therapy curriculum may help students feel more prepared to perform telehealth examination. **(Author's abstract)**

Keywords: *Examination, Physical therapy, Self-efficacy, Students, Telehealth, Health and wellness*

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INFORMATION AND COMMUNICATIONS TECHNOLOGY

Cybersecurity Skills of Filipino Nursing Students at a Public Tertiary Institution

De la Peña, Janelle Faye , Dinero, Ella Mae , Fuentes, Irene Kathrena , Oducado, Ryan Michael F., Ermita, Gab

This cross-sectional study assessed the cybersecurity skills of nursing students ($n=201$) in the Philippines. The Personal Cybersecurity Provision Scale was adopted for data gathering. After describing the data with the use of SPSS version 26, the significant difference between male and female cybersecurity skills was tested using a t-test

for Independent samples. Results demonstrated that nursing students had moderate to high cybersecurity skills. However, while they had very high scores in avoiding the untrusted subdimension, only moderate scores were obtained in leaving no trace and protecting the payment information domain. The overall cybersecurity skills of male and female nursing students did not vary significantly. (**Author's abstract**)

Keywords: *Computer security, Cybersecurity, Nursing, Privacy, Students, Information and Communications Technology*

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NP

0127

Internet of Things Enabled Smart Water Excellence Observing and Outflow Recognition System

Palin Visu, Y. , Raja, E. , Karthikey

Currently, global water demands are increasing at an alarming rate, largely due to the depletion of resources caused by factors such as water waste, climate change, and urbanization. Unfortunately, conventional water metering schemes are often performed manually by human resources, which can be both cumbersome and ineffective for conservation efforts. To address the shortcomings of the state-of-the-art models, this paper introduces an autonomous water quality monitoring system based on IoT technology to optimize water utilization. The proposed system analyzes and monitors the usage of water in the aquatic industry such as circulation speed measurement and optimization of water supply to reduce water waste and encourage conservation. Also, the proposed system uses pH and conductivity sensors to monitor the quality of the water that is delivered to each residence. (**Author's abstract**)

Keywords: *GSM, IoT, Sensor, Water quality, Information and Communications Technology*

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MATHEMATICS

0128

Inheritance Pattern of Huntington's Disease, a Multiplayer Game

Villamin, Genrev Josiah , Fajardo-Lim,

Evolutionary game theory (EGT) is one of several major developments of game theory. EGT covers ecology and population genetics, among other fields in biology. Most studies in EGT were on a two-player game but non-linearities in biology often occur that need to be considered. Huntington's disease (HD), named after the person who wrote the first detailed description of the disease in 1872, is a neurodegenerative disease that is inherited. This is a case in population genetics, which follows the inheritance pattern called the dominant lethal. In this study, we presented this disease as a multiplayer game among the alleles of the HD gene. We utilized Gokhale and Traulsen's model, wherein a payoff matrix for a four-player game was reduced into a payoff matrix for a two-player game. Depending on the fitness values of each genotype, we have determined that populations consisting of both Huntington and normal alleles may converge to either a purely Huntington, a purely normal, or a mixed

composition where both types of genes coexist. If the normal genotype produces more surviving offspring than the other genotypes, then even if a small frequency of normal alleles is injected into a purely Huntington population, the population will be replaced by the normal genotype over time. Such a result was obtained using replicator dynamics and analysis of the stability of equilibrium points. Similar analyses on other genotypes were provided in relation to the inheritance pattern of HD. **(Author's abstract)**

Keywords: *Evolutionarily stable, Evolutionary game theory, Lethal alleles, Population genetics, Replicator dynamics, Strategies, Mathematics*

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0129

Mathematics Engagement Clinic Grounded on Brain Dominance: Its Effect on Critical Thinking and Problem-Solving Skills, and Mathematics Achievement

Marquez, Rosen A

In the new normal, border-crossing of digital culture among learners are prevalent in their attitude and learning preference. Cognitive preferences such as the students' brain dominance must be considered in an enhancement program and modular distance learning is an additional option. With a post positivist worldview through one sample quasi-experimental research design, the study evoked the effects of the Mathematics Engagement Clinic (MEC) grounded on brain dominance to critical thinking and problem-solving skills, and mathematics achievement. The results showed a wide mean difference in the mean percentage of scores in the level of critical thinking and problem-solving skills and mathematics achievement. After the thinking processes mentioned were compared before and after an enhancement program MEC was given, a significant difference was found through a non-parametric Wilcoxon – signed rank test. Hence, despite the non-normal distribution of participants in the study MEC has managed to cater to the participants' preferences to act, think and learn. With the positive effect of the enhancement program MEC grounded on brain dominance on the thinking processes and Mathematics achievement of the participants, the researcher has constructed a modular Mathematics enhancement program framework as a guide to teacher researchers in the planning, designing, redesigning and implementing modular Mathematics enhancement programs grounded on brain dominance to hone and enhance thinking processes such as critical thinking and problem-solving skills, and thereby, improve Mathematics achievement. MEC is a timely enhancement program to consider in the new normal setting in education to improve the lens of the teaching and learning process. **(Author's abstract)**

Keywords: *Organizational justice, Morale, Performance, Education, Barotac Nuevo, Iloilo, Mathematics*

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MEDICINE

0130

A 10-Year Retrospective Study on the Presentation, Treatment, and Outcomes of Retinoblastoma Patients in a Philippine Tertiary Hospital

Valconcha-Adraneda, Catherine B. , Macias, III, Emilio L. , Facundo, Allyson Rose C. , Tan, Miriam Joy F. , Torno, Maria Soco

Objective: This study reported the demographic profile, clinical presentation, treatment, and outcomes of retinoblastoma (RB) patients seen at Jose R. Reyes Memorial Medical Center (JRRMMC) from January 2011 to December 2020.

Methods: This was a single-center, retrospective study. Medical records of patients diagnosed with RB at JRRMMC from January 2011 to December 2020 were reviewed. Descriptive statistics were used to summarize the characteristics of the participants.

Results: A total of 31 confirmed RB cases were seen, with almost half residing outside Metro Manila (52%). The median age at diagnosis was 2 years, with a slight male predominance (55%). Majority (81%) of patients had unilateral presentation, with leukocoria as the most common sign (19%) prompting consult. Nearly half (43%) of 37 eyes were diagnosed as Group E using the International Classification of Retinoblastoma (ICRB) system. Majority were in the advanced stage; 57% of eyes underwent enucleation and 29, 3 and 3% of patients required additional treatments such as chemotherapy, laser, and radiotherapy, respectively. RB was confirmed in 20 eyes (54%) through histopathology. Survival outcomes showed that 4 patients (13%) were alive, with either completed or ongoing treatment, and 19 (61%) did not complete prescribed management or were lost to follow-up. There were 8 (26%) known deaths.

Conclusion: Majority of cases were unilateral and at an advanced stage needing enucleation which may indicate low levels of awareness and screening efforts. Survival rates are difficult to ascertain due to patients abandoning treatment that may be attributed to limited social service support. The study reflects the 10-year data prior to the establishment of a collaborative, multispecialty RB team in the institution and exposes various areas that need to be addressed to improve clinical outcomes. **(Author's abstract)**

Keywords: *Retinoblastoma, Intraocular malignancy, Enucleation, Chemotherapy, Epidemiology, Medicine*

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0131

A 44-year-old Male Filipino with Spontaneous Acute Subdural Hematoma and Subarachnoid Hemorrhage Caused by a Dural Arteriovenous Fistula of the Occipital

Lobe: A Case Report

Belonguel, Noel J. , Vista, Giova

Introduction. Spontaneous acute subdural hematoma (ASDH) is rare and comprises 2.6% of all ASDH. In one recent study, only 178 spontaneous ASDH were documented. However, only 1 case was attributed to dural arteriovenous fistula (dAVF). Vascular malformations cause less than 10% of subarachnoid hemorrhage (SAH). Spontaneous ASDH and SAH occurring together are extremely rare. Literature is scarce on cases with dAVF of the occipital lobe as a cause of simultaneous spontaneous ASDH and SAH.

Objective. This paper aims to present a case of a spontaneous acute subdural hematoma and subarachnoid hemorrhage caused by a dural arteriovenous fistula of the occipital lobe, along with its clinical presentation, diagnosis, and treatment.

Case Summary. A 44-year-old Filipino male with no history of trauma presented with severe headache, vomiting, and decreasing sensorium – CT scan revealed acute parenchymal bleed in the left occipital lobe with subarachnoid extension and subdural hematoma in the left fronto-parieto-temporal convexity along the tentorium cerebelli and posterior interhemispheric falx. Due to the location of the lesion seen on the CT scan and the gender distribution, Arteriovenous malformation (AVM) was initially considered, thus proceeded to computed tomography angiogram

(CTA) to establish the diagnosis of vascular anomaly, however, revealed dAVF instead. Four-vessel angiogram was done to assess the tributaries of the dAVF and confirmed the diagnosis. Complete obliteration of dAVF of the occipital lobe was done with Onyx Embolization in one session.

Conclusion. This is the first case of Borden type II, Cognard type IIa+IIb dAVF, as reported in this institution. Although extremely rare as a cause of SAH and ASDH, dAVF should be considered a differential diagnosis in patients with no identifiable common cause of the new onset of severe headache and poor neurologic status. **(Author's abstract)**

Keywords: *Spontaneous acute subdural hematoma, Subarachnoid hemorrhage, Intracranial dural arteriovenous fistula, Medicine*

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0132

Acute Pancreatitis in Early Postpartum Woman with Confirmed Covid-19: A Rare Case Report

Arjunadi, Botefilia, Lisnawati, Yuyun, Pradana, Agatha, Suryamin, Mau

Background: The Coronavirus disease 2019 (COVID-19) pandemic is a significant challenge for public health and clinical medicine. COVID-19 mainly impairs the respiratory tract. However, gastrointestinal manifestations of COVID-19 are increasingly being recognized. Although acute viral pancreatitis has been described in other viral infections, pancreatic involvement in SARS-CoV-2 disease is still poorly defined. We reported a case of acute maternal pancreatitis in an early postpartum period woman with confirmed COVID-19.

Case Presentation: A 31-year-old woman in term pregnancy had a caesarean section due to acute respiratory distress syndrome (ARDS) caused by COVID-19 pneumonia. One day after surgery, her stomach appeared bloated, bowel sounds were weak, and her abdominal circumference increased. Ultrasound examination did not reveal any suspicion of bleeding or hematoma. Her abdominal contrast-enhanced computerized tomography (CT) scan showed small bowel obstruction and oedematous pancreas. Amylase levels increased to 382 units/litre and lipase levels to 724 units/litre. C-reactive protein and procalcitonin were also increased. The diagnosis of sepsis was made, and she received broad-spectrum antibiotics and treatment for the COVID-19 infection. Recovery was characterized by a gradual resolution of abdominal and pulmonary signs and symptoms. A decline of amylase and lipase was observed by the tenth day. On the 13th day, she was extubated and gradually recovered from respiratory symptoms, with a negative result for COVID-19 RT-PCR. Based on this case, we consider that pregnancy and COVID-19 support each other as the cause of acute pancreatitis.

Conclusion: Early diagnosis and severity classification are essential steps for successful management because late recognition and treatment may allow a greater prevalence of associated complications. **(Author's abstract)**

Keywords: *Pancreatitis, COVID-19, Pregnancy, Caesarean section, Case report, Medicine*

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0133

Addressing Problems in Accident Management in a Shopping Complex through Action Research

Sandejas, Benedict Nichola

Introduction. Accidents are unpredictable and sometimes unavoidable. Businesses such as shopping complexes need to follow safety protocols to ensure that nobody is hurt. The shopping complex should have preventive measures and an accident management team to offer efficient and timely treatment for these accident victims.

Objective. This paper aims to identify problems experienced by the accident management team in dealing with accidents in a shopping complex. The report will also propose and implement solutions to all issues identified.

Methods. Two action research cycles were conducted for this paper, with the results of the first action research flowing into the second action research cycle. Reeves et al.'s interprofessional teamwork framework addressed concerns related to teamwork. The data used in this action research came from journal entries, informal and formal one-on-one discussions, and discussions with each department.

Results. The workflow for the current post-accident management activities was evaluated. The problems identified were grouped into 5: roles and responsibilities, procedures, knowledge transfer, logistics, and skills. The issues concerning the roles and responsibilities of each team member were addressed by realigning these with their current skills, training, and job description. The remaining and new problems were addressed by developing an accident management policy. Inclusions in the policy are protocols on transporting patients, communication and transportation procedures, letter of authorization (LOA) approval procedures, post-accident evaluation procedures, pre-accident recommendations, policy revision procedures to address organizational changes, changes in the job description or government regulatory mandates, and the evaluation of current skills in case training is needed.

Conclusion. Accident management requires a coordinated effort amongst all the team members, with members from different social and health specialties. Using Reeves et al.'s interprofessional teamwork framework, the team identified the problems and implemented solutions by realigning the roles and responsibilities of each team member and implementing an accident management policy that can improve preventive measures and improve post-accident responses. **(Author's abstract)**

Keywords: *Accident management, Policy development, Accountability, Action research, Risk management, Medicine*

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0134

Agreement Between Clinical and Angiographic Staging of Diabetic Retinopathy in a Tertiary Government Hospital in the Philippines

Aguilar, Romulo N., Paraan, Ronald Go

Objective: The main objective of this study is to determine the agreement between the clinical staging of diabetic retinopathy (DR) with fluorescein angiography (FA) staging in an actual clinic.

Methods: This was a retrospective cross-sectional study conducted in a single retina clinic. One hundred and thirty-four (134) eyes with newly diagnosed diabetic retinopathy were included in the study. Patients with ocular findings that prevented the proper examination of the retina or who had undergone laser treatment were excluded. Outcome measures were the staging of DR between the two modalities. The distribution of stages of DR according to clinical evaluation and angiography were determined. The rate of under-diagnosing and over-diagnosing the stage of DR was calculated. Sensitivity and specificity of clinical ophthalmoscopy against FA in staging DR was

also included. The kappa coefficient was used to measure agreement between the two modalities.

Results: Kappa coefficient was computed at 0.198 with a 95% confidence interval from 0.105 – 0.291. Agreement between the two modalities were observed in 37.3% of the eyes. More than half or 56.7% of the eyes were under-diagnosed on clinical examination while 6% were over-diagnosed. Clinically, most of the eyes were staged as non-proliferative diabetic retinopathy (NPDR) moderate (n=53). Based on FA, NPDR severe (n=70) was the most common stage. Clinical staging of DR showed a sensitivity of 58 - 75%, and specificity of 63% - 99%.

Conclusion: There was a poor agreement between the clinical and angiographic staging of DR in the included sample. NPDR severe had the most agreements while NPDR mild was the most under-diagnosed stage, and PDR early the most over-diagnosed stage. In this single training institution, there was a tendency to assign a less severe stage of DR based on clinical evaluation. Clinical evaluation with an indirect ophthalmoscope and a 20 D lens had a low sensitivity but high specificity in staging DR. **(Author's abstract)**

Keywords: *Diabetic Retinopathy, Fluorescein Angiography, Ophthalmoscopy, Diabetes Mellitus, Philippines , Medicine*

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NP

0135

An analytical cross-sectional study on the correlation between patient-doctor relationship and medication adherence of hypertensive Filipinos aged 40-65 in greater Manila Area during the COVID-19 pandemic

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Introduction Hypertension is a key modifiable risk factor for myocardial infarction and stroke, yet medication adherence remains low. The ongoing COVID-19 pandemic has further complicated the management of chronic diseases like hypertension. This study aimed to explore the correlation between the patient-doctor relationship and medication adherence among hypertensive Filipinos aged 40-65 years in the Greater Manila Area during the pandemic.

Methods A cross-sectional study was conducted involving 131 hypertensive Filipino participants. Data were collected through an online survey, assessing participant demographic and medical profiles, medication adherence using the Hill-Bone Compliance Scale (HBCS), and the patient-doctor relationship using the Physician-Doctor Relationship Questionnaire-9 (PDRQ-9).

Results Approximately half of the participants demonstrated good adherence to hypertension medication. A weak but significant positive correlation was found between overall medication adherence and the patient-doctor relationship. The duration of anti-hypertensive drug intake also showed a weak positive correlation with medication adherence. Factors such as comorbidities and type of consultation did not significantly impact medication adherence.

Conclusion This study emphasizes the significance of the patient-doctor relationship in medication adherence among hypertensive Filipinos during the COVID-19 pandemic. Enhancing communication and trust between patients and physicians can potentially improve medication adherence and overall disease management. **(Author's abstract)**

Keywords: *COVID-19, Hypertension, Medication adherence, Perception, Anti-hypertensive agents, Crosssectional, Medicine*

An analytical cross-sectional study on the relationship of perceived social connectedness and burnout symptoms in medical students from a private tertiary institution in Metro Manila enrolled in an online curriculum for the academic year 2020-2021

Arenas, Ma. Isabella , TArceÃ±o, Thea Alissa , Arce, Noah , Arboleda, Alexis Angelo , Anonas, Isabella Gabrielle , Ambata, Jean Philippe , Amarnani, Vashwin , Alvarez, Patrick Lorenzo, Bayaoa, Alexandria R. , Javier, Ramon Jaso

Introduction Online learning was put at the forefront for the safe continuation of education amid the COVID-19 pandemic. This study determined the association of the level of social connectedness and symptoms of burnout in a purely online academic curriculum.

Methods This analytical cross-sectional study design included medical students enrolled in a private tertiary institution in the National Capital Region as respondents in an online survey. The perceived social connectedness and symptoms of burnout were objectively measured, using previously validated questionnaires, the Social Connectedness Scale - Revised (SCS-R), and the Copenhagen Burnout Inventory (CBI). The prevalence risk ratio (PRR) was computed.

Results Of the 119 respondents, majority reported reduced levels of social connectedness (72.3%) and experienced symptoms of burnout (85.7%). Among those with reduced levels of social connectedness (PRR: 1.25; 1.00, 1.55), there was a higher risk of having symptoms of burnout.

Conclusion Amid the implementation of a purely online curriculum, medical students with reduced social connectedness had an increased risk of experiencing symptoms of burnout. **(Author's abstract)**

Keywords: *Social connectedness, Burnout symptoms, Online medical curriculum, Medicine*

Anaplastic Cerebellar Ependymoma in an Adult Female presenting with Tonsillar Herniation successfully treated with Chemotherapy: A Case Report

Manalo-Igot, Mary Ondinee , Guerrero, Vic

Introduction: Ependymomas are slow-growing neuroectodermal tumors that may arise from various parts of the central nervous system. Anaplastic ependymoma represents 3-5% of ependymomas, and it is rarely found in adults and the infratentorial area, particularly the cerebellum. This paper discusses the first reported case of an adult female with anaplastic cerebellar ependymoma who underwent surgery and was treated with chemotherapy for tonsillar herniation.

Case Presentation: This is a case of a 58-year-old Filipino female with a five-month history of dizziness, headache, nausea, and vomiting. Cranial computed tomography (CT) scan revealed the presence of hydrocephalus with enhancing lesions at the right cerebellum. The patient underwent ventriculoperitoneal shunting (VPS) with

sub-total

excision and biopsy of the right cerebellum. Histology and immunochemistry were consistent with a high-grade anaplastic ependymoma (WHO Grade III). Cerebrospinal fluid and spinal magnetic resonance imaging (MRI) were negative for tumors. The initial plan was to undergo limited field external beam radiation therapy to the cerebellum. However, the patient was lost to follow-up. Two months after surgery, she presented with similar symptoms. MRI revealed tonsillar herniation and interval progression of the mass compressing the fourth ventricle, pons, and medulla oblongata; thus, medical decompression urgent chemotherapy with cisplatin and etoposide were started. After four chemotherapy sessions, repeat cranial MRI revealed resolution of tonsillar herniation and interval regression of the mass.

Conclusion: This paper presented a rare case of anaplastic cerebellar ependymoma with tonsillar herniation, successfully treated with chemotherapy. Radiotherapy is the standard of care following surgical resection. Still, our case management showed that in a patient with tumor progression presenting with tonsillar herniation, alternative management is to give systemic chemotherapy instead of radiotherapy. **(Author's abstract)**

Keywords: *Anaplastic cerebellar ependymoma, Chemotherapy, Herniation, Medicine*

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NP

0138

Anti-Myeloperoxidase (MPO) associated Vasculitis in a Young Filipino Male with Bronchiectasis: A Case Report

Penserga, Ester G. , Quiambao, Antonio Lore

Background: ANCA-associated vasculitis and its subtypes have been associated with pulmonary manifestations, with bronchiectasis being a unique clinical presentation.

Case Summary: We report the case of a 26-year-old Filipino male who presented with progressive dyspnea, neuropathic pain, and purpuric rash. Diagnostic evaluation revealed upper lobe bronchiectasis and lower lobe pneumonia, as well as hematuria and proteinuria. ANCA-associated vasculitis (AAV) and tuberculosis were considered. There was improvement of dyspnea, cough and rashes with antibiotics, glucocorticoids (GC), and anti-TB coverage. However, neuropathic pain progressed to the upper and lower extremities with development of weakness. Anti-myeloperoxidase (MPO) Anti-Neutrophil Cytoplasmic Antibody (ANCA) was positive, Electromyography-Nerve Conduction Velocity (EMG-NCV) revealed diffuse sensorimotor axonal polyradiculopathy of both upper and lower extremities. Cyclophosphamide was then given.

The patient gradually regained his motor strength while sensory deficits persisted. He was referred to rehabilitation medicine for physical therapy and eventually discharged. This case highlights vasculitis as an associated extrapulmonary manifestation of bronchiectasis, and the possible role of bronchiectasis in the immune-mediated pathogenesis of ANCA-associated vasculitides. **(Author's abstract)**

Keywords: *Bronchiectasis, ANCA-associated vasculitis, Anti-MPO, Medicine*

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0139

Approach to Lower the Cardiovascular Risk of Individuals with Type 2 Diabetes Mellitus: Evidence-based Consensus Statements of the Philippine Heart Association and Philippine Society of Endocrinology Diabetes and Metabolism

Matawaran, Bien J. , Jimeno, Cecilia A. , Sison, Jorge A., Caole-Ang, Imelda , Gonzales, Eddieso

Diabetes remains as the 6th leading cause of death in the Philippines, with more than 33,000 deaths in 2016. Given this alarming prevalence, it is imperative that this public health concern be prioritized in the country and to answer such concern, a group of cardiologists and endocrinologists who are in active clinical practice and research, formed a technical working group composed of five members. Their primary objective was to develop an evidence-based consensus document for Filipino healthcare practitioners and people in the academe that would serve as a guideline on the approach to lower the CV risk of individuals with T2DM. The TWG agreed on focusing with the pharmacological approach to treatment of lowering CV risk for T2DM patients using the ADAPTE model which is a more systematic approach to guideline adaptation. The recommendations were developed using the ADAPTE framework appraising all international practice guidelines and recommendations through to 2013. The technical working group's overall objective of guideline adaptation is to take advantage of the existing guidelines to enhance the efficient production and use of high-quality adapted guidelines specially in the local Philippine setting. Each of these articles was then assessed using the AGREE instrument. Based on the key questions that the technical working group had identified regarding the approach to lower the risk of individuals with type 2 diabetes, 9 recommendations concerning the antidiabetic drug of choice for persons with type 2 diabetes with or without established ASCVD and management of type 2 diabetes mellitus patients with hypertension and dyslipidemia were drafted and are presented in this report. **(Author's abstract)**

Keywords: *Type 2 diabetes mellitus, Cardiovascular risk, Treatment recommendations, Medicine*

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0140

Assessment of Knowledge and Skills of Barangay Health Workers: Basis for Diabetes Education Program for Lay Persons

Puno, Mercerose P.J. , Florido, Leyden V. , Florendo, Josefina E. , Esguerra, Ana Leah D. , De Leon, Anjanette S. , Mejilla, Joylyn L., Reyes, Ray Justin M. , Tangkeko, Eleono

This study aimed to determine the level of knowledge and skills of the barangay health workers (BHW) about diabetes management. A descriptive correlational design that included 121 BHWs in Bustos, Bulacan was utilized in the study. A test and skill demonstration checklist was utilized to determine the knowledge and skills of BHWs about diabetes management. Categorical variables such as the respondents' profile were described using frequencies and percentages. Continuous variables such as level of knowledge and skills were summarized using central tendency measures (mean) with standard deviation. Pearson correlation test for association was used to test for relationship between level of knowledge and skills. Pearson Chi square was used to test association between demographic variables and level of knowledge and skills. Ap value of <0.05 was considered significant in the analysis of the results. Results showed that the overall level of knowledge of the BHWs was satisfactory but varied in many aspects of diabetes management. The BHWs level of knowledge in determining signs and symptoms and diagnosis of diabetes was high but low in determining types of diabetes mellitus. The level of skills of the BHWs was high in blood pressure measurement but low in blood glucose monitoring. BHWs have varied knowledge and skills in diabetes care management. There is a need to train the BHWs further to develop their knowledge and skills. The nurse diabetes educators must provide diabetes education program for BHWs that are focused on competencies to deliver safe and appropriate health teaching activities utilizing the basic concepts and principles of diabetes management. **(Author's abstract)**

Keywords: *Diabetes Management Self Education, Diabetes Type 1, Diabetes Mellitus, Diabetes Nurse Educator, Medicine*

Assessment of Knowledge, Attitudes, Beliefs and Practices among Doctors, Nurses and Other Allied Health Practitioners in Makati Medical Center with Regards to the Care of Patients with Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome (H

Caoili, Janice C. , Galang-De Leon, Waiva

Introduction: Human immunodeficiency virus infection (HIV) and Acquired Immunodeficiency Syndrome (AIDS) prevalence has been increasing for the past years in the Philippines since the early 1980s. The health care team which is comprised of doctors, nurses, pharmacists, medical technologists, and other allied health practitioners is the front liner in the care and management of such patients afflicted with the disease.

Methods: This descriptive cross-sectional study assessed the knowledge, attitudes, beliefs, and practices among the health workers in Makati Medical Center. A questionnaire based on the 1988 WHO Knowledge, Attitudes, Beliefs, and Practices (KABP) of AIDS survey was used. It was sent to 307 health workers selected by cluster sampling.

Results: Based on the survey, sources of information among participants regarding HIV/AIDS were quite diverse; books and journals being the most common. The majority of the participants demonstrated satisfactory levels of awareness regarding HIV/AIDS and its mode of transmission; however, a small percentage of the respondents were found to have a misconception that there is a vaccine available for HIV/AIDS and that insect bites and sharing of utensils can transmit the virus. Some of the respondents also do not know much about transmission routes and there are a few who are not willing to care for and live with patients with HIV. The majority however have a positive attitude towards people living with HIV/AIDS.

Conclusion: Most of the respondents of this research have good knowledge regarding the disease process and its mode of transmission. At the same time, the majority of the respondents also have a positive attitude and acceptance towards people living with HIV/AIDS. The data from the study can be used to develop interventions to decrease if not eliminate HIV stigma and discrimination. Interventions can include educating health care workers by utilizing all possible modalities to have a broader reach. **(Author's abstract)**

Keywords: *HIV/AIDS, Knowledge, Attitude, Practices, Healthcare workers, Medicine*

Association between Neutrophil-To-Lymphocyte Ratio and Incidence of Contrast Induced Nephropathy among Adults Undergoing Percutaneous Coronary Intervention

Ferrer, Filoteo C. , Sarigumba, Mar

Introduction: Though the role of inflammation is reputedly associated with contrast induced nephropathy (CIN), especially in the setting of Acute Coronary Syndrome (ACS), current risk scoring systems do not address

inflammatory factors. Neutrophil lymphocyte ratio (NLR), a proportion of two inflammatory markers, is reflective of the balance between innate and adaptive immune responses, and therefore has a strong predictive value.

Methods: A cross-sectional analytical study done among adult Filipinos diagnosed with ACS who underwent Percutaneous Coronary Intervention (PCI) from January to December 2018 at Makati Medical Center. Exposure of interest includes baseline NLR count and pre-procedural serum creatinine. Outcome was the incidence of CIN based on 24-48 hours serum creatinine post-procedure.

Results and Analysis: A total of 166 ACS patients were analyzed, of which 11 (6.62%) has CIN. Patients with pre-procedural NLR > 4.71 were approximately five times as likely to develop CIN (aOR 1.51 to 17.55, p = 0.009), with sensitivity 63.64%, specificity 80.65%, accuracy 79.52%, Youden's index 44.29%. On multivariate analysis, NLR and STEMI were associated with increased odds for CIN. STEMI patients had approximately four times the odds of developing CIN (aOR 3.893, 95% CI 1.07 to 14.13, p = 0.039).

Conclusion: NLR > 4.71 in Filipinos with ACS who underwent PCI is associated with increased risk to develop CIN. (Author's abstract)

Keywords: *Neutrophil-to-lymphocyte ratio, Contrast induced nephropathy, Percutaneous coronary intervention, Medicine*

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0143

Association of Body Mass Index and Outcomes of Patients Admitted for Decompensated Heart Failure Among Adult Filipino Patients in a Tertiary Hospital in Cebu City

Tan, Ceryl Cindy Y., Vergara, Jovy Louie Anthony R., Enario, Dari

Introduction: Obesity remains to be a public health concern across the globe. Studies have established that obesity plays an important role in the pathogenesis and progression of cardiovascular diseases such as hypertension and coronary artery disease. Evidence suggesting the link between obesity and decompensation of heart failure is only just emerging.

General Objective: Determine the associations between body mass index (BMI) outcomes of severity and mortality among adult Filipino patients admitted with decompensated heart failure.

Study Design: Retrospective Cohort study design.

Study Setting: Chong Hua Hospital, a tertiary hospital in Cebu City, Philippines

Study Population: All adult patients with a diagnosis of Decompensated heart failure who were admitted in the hospital from 2015 to 2019.

Main Outcome Measure: Determine association of BMI using Asian cut-offs and Outcomes of patients admitted for decompensated heart failure

Results: A total of 356 patients were admitted for acute decompensated heart failure from year 2015-2019. Majority of the patients were in the obese category 1 (28.93%) and predominantly were classified as NYHA Class III heart failure. There was no significant association between BMI and outcomes among patients with decompensated heart failure. Furthermore, it was noted that the pro-BNP values were higher in patients with lower BMI categories than in the overweight and obese categories.

Conclusion: Obesity, while increasing the chance of developing heart failure (HF), appears to protect people who have already been diagnosed with HF (the "obesity paradox"). This study, although not reaching statistical significance, showed that patients with lower BMI admitted for heart failure decompensation had increased use of positive pressure ventilation and higher mortality rates compared to obese patients. A larger sample size may be needed to show such association. Furthermore, patients in lower BMI category had higher pro-BNP values than their counterparts consistent with previous literature. (**Author's abstract**)

Keywords: *Medicine, Body Mass Index, Decompensated Heart Failure, Retrospective Cohort study design*

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0144

Association of Protein-Calorie Intake and Clinical Outcomes among Critically-ill COVID-19 Patients: A Retrospective Study

Tanchee-Ngo, Mary Jane, Tañada, Maria Regina

Background: Patients admitted due to severe COVID-19 pneumonia are at high risk for malnutrition and worsening of their clinical condition. Patients with type 2 diabetes admitted for COVID-19 pneumonia have an increased risk for poor clinical outcomes. Adequate nutrition is recommended to augment a strong immune response. The American Society of Parenteral and Enteral Nutrition (ASPEN), Philippine Society of Parenteral and Enteral Nutrition (PHILSPEN), European Society of Parenteral and Enteral Nutrition (ESPEN) recommend an energy intake goal of 15-20 kcal/kg actual body weight (ABW) per day or 70-80% of caloric requirements after the acute phase of critical illness, with recommended protein intake of 1.2-2.0 g/kg ABW per day. This study aims to provide an association between calorie and protein intake with negative clinical outcomes.

Methods: This is a retrospective cohort study of 55 mechanically ventilated SARS COV-2 RT-PCR positive patients admitted in the critical unit of Chinese General Hospital between April 1, 2020 to December 30, 2020. Clinical profile taken include: sex, age, height weight, BMI, comorbidities, and components of the modified SOFA score and APACHE II score. Calorie and protein intake from day 3 to day 7 of ICU admission were taken. Clinical outcome data were in-hospital mortality, number of days of ICU stay, hospital admission, vasopressor use and mechanical ventilation.

Results: Majority of the patients included in the study were male, elderly, overweight, and with comorbidities such as hypertension, diabetes, and chronic kidney disease. Majority of the patients were on mechanical ventilation and on vasopressors for more than 1 week. In-hospital mortality accounted for 65.5% of cases. For patients without diabetes, calorie intake was 16.9 kcal/kg/day and protein intake was 0.72 g/kg/day, while patients with diabetes had a calorie intake of 20.2 kcal/kg/day and protein intake of 0.86 g/kg/day. Based on the 70% cutoff, patients with diabetes were noted to have been provided with more adequate protein (P-value= 0.027). Higher caloric intake was inversely associated with in-hospital mortality among patients younger than 75 years old (P-value=0.026) and among patients with diabetes (P-value=0.003). Higher calorie intake was also significantly associated with decreased duration of pressors among patients with diabetes (P-value=0.021). Higher protein intake positively associated with the number of days admitted among patients with lower modified SOFA scores (P-value=0.041) and among patients with diabetes (P-value=0.021). All other associations did not display significant results (all P-values>0.05).

Conclusion: Based on this study, increased caloric intake was associated with increased survival among patients less than 75 years, but no association was found in patients 75 years and older. Among patients with lower mortality risk, increased protein intake was associated with longer duration of hospital stay, however patients with higher risk had higher in-hospital mortality regardless of protein and calorie intake. Among patients with diabetes, higher calorie intake was associated with increased survival and decreased duration of pressor requirement, while increased protein was associated with longer length of hospital stay. Treatment for COVID-19 pneumonia,

however, was not established at this time and there was significant in-hospital mortality among these mechanically ventilated patients. (**Author's abstract**)

Keywords: *Protein-calorie intake, COVID-19, Outcome, Retrospective study, Mechanically ventilated, Critical care, Medicine*

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0145

Can Balance Function Tests Predict Disability in Older Adults with Peripheral Vestibular Hypofunction?

Galgon, Anne K. , Gallichio, Joann , Blackinton, Mary , Jasper, A

Introduction: The Dizziness Handicap Inventory (DHI) is a 25-item self-assessment questionnaire used to evaluate perceived disability from dizziness. The predictive validity of Timed Up and Go (TUG), Dynamic Gait Index (DGI), and modified Clinical Test of Sensory Integration of Balance (mCTSIB) on disability as shown by DHI has not been established specific to older adults with peripheral vestibular hypofunction. The purpose of this study is to investigate if the TUG, DGI, and mCTSIB are significant and strong predictors of the disability from dizziness as represented by the DHI scores in older adults with peripheral vestibular hypofunction.

Method: A Correlational, Retrospective Design was used to investigate the predictors of the DHI score. Data was collected retrospectively on the 17 patients in the main study 'The Impact of Prescribed Walking on Dizziness in Seniors with Vestibular Hypofunction: A Pilot Randomized Controlled Trial' and from physical therapy medical charts (n=24) from June 2015 to June 2018. Only medical charts of those 65 years and older who underwent vestibular physical therapy and contain all four outcome measures (DHI, DGI, mCTSIB, and TUG) were included in the study. Dizziness related to central nervous disorder were excluded.

Results: There was a significant fair inverse correlation between DHI and mCTSIB ($r = -0.381, p = 0.01$) and DGI ($r = -0.322, p = 0.01$), and a fair correlation with TUG ($r = 0.396, p = 0.03$). The mCTSIB, TUG, and DGI accounted for 10% of the variance in the DHI, however, this predictive relationship was not found to be significant.

Discussion: In this limited sample size, the TUG, DGI, and mCTSIB tests are not significant and strong predictors of dizziness-related disability as represented by the DHI scores in older adults with peripheral vestibular dysfunction. This study should be replicated as a large-scale prospective study with stratification of severity of dizziness to improve the generalizability of findings. (**Author's abstract**)

Keywords: *Older Adults, Disability, Dizziness, Dizziness Handicap Inventory, Peripheral Vestibular Hypofunction, Medicine*

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0146

A Bibliometric Analysis of the Philippine Journal of Nursing for 1966-2017

Arquiza, Glenda S. , Gallardo-Ninobla, Marina Magnolia , Tuppal, Cyruz P., Vega, Paol

The PJN has served its purpose as a venue for both Filipino and foreign nurses to publish their original articles, reflection, commentaries, and other scholarly written works on the key areas: nursing practice and nursing education. Marking its 51st year, the aim of this study was to conduct a bibliometric analysis and report publication trends of PJN for the period of 1966–2017. VOSviewer® analyzed the bibliometric characteristics of PJN using the corpus extracted from the Scopus® bibliographical database. There were 724 published documents. Among them, there were 606 original articles, 43 editorials, 22 reviews, 21 conference papers, 18 short surveys, 10 notes, and 4 letters. VOSviewer® facilitated the cluster analyses without the need to have an in-depth knowledge of clustering techniques and without requiring advanced computer skills. From this, the auto-generated themes were reviewed along with the PJN's aims/objectives such as “nursing,” “human,” 'health' “primary health care,” 'nurses’ “nursing education,” and healthcare “organizations” that are apparent during the publication period between the 1970s to 2010s. Various researchers both in the academic and service institutions published their works in PJN that emulate vital communication patterns in the specific fields that the journal embodies. For this reason, the authors should be instructed to list their affiliations with proper accreditation to ensure accurate publication accurate author citation history, co-authorship citations, and other bibliometric indicators. The PJN will continue to support all the researchers in the local and international community to achieve one common goal – to advance and sustain the culture of scholarship in nursing. **(Author's abstract)**

Keywords: *Bibliometric analysis, Philippine Journal of Nursing, PJN, Philippines, Medicine*

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NP

0147

Bilateral Iridocorneal Endothelial Syndrome

Covar, Rainier Victor A. , Agulto, Manuel B. , Merca, Theresa Gladi

Objectives: We presented a case of bilateral iridocorneal endothelial (ICE) syndrome with secondary glaucoma and discussed its clinical presentation and management.

Study design: This is a case report.

Results: A 12-year old female consulted for a one-year history of progressive blurring of vision in both eyes associated with abnormal pupils and occasional eye pain. Polycoria, shallow anterior chambers, increased intraocular pressures (IOP), areas of closed angles on gonioscopy, and increased cup-to-disc ratio in both eyes indicative of ICE syndrome were present. Management included anti-glaucoma medications and implantation of glaucoma drainage devices (GDD).

Conclusion: Early detection with regular follow-ups leading to prompt management of the ICE syndrome are necessary. IOP control may be challenging due to the nature of the disease and may require multiple surgeries including GDD implantation to achieve successful outcomes. Early use of GDD may be beneficial for pediatric patients with ICE and glaucoma, and may require additional surgeries to adequately manage the IOP. **(Author's abstract)**

Keywords: *Iridocorneal endothelial syndrome, Progressive iris atrophy, Glaucoma drainage devices, Secondary glaucoma, Medicine*

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(Filipiniana Analytics)
NP

Brentuximab vedotin in ALK-negative anaplastic large cell lymphoma presenting with alar mass: A Case Report

Atienza, Kevin Patrick A. , Claridad, Jose Roberto V. , Gonong, Jenni

Anaplastic large cell lymphoma (ALCL) is a rare subtype of T-cell non-Hodgkin lymphoma (NHL) primarily involving the lymph nodes; however, extra-nodal manifestations are also common. Diagnosis can be confirmed by a combination of histopathology and immunohistochemical staining. Complete workup and staging include imaging and bone marrow examination. This presents a case of a 55-year-old male with anaplastic lymphoma kinase (ALK) - negative ALCL presenting with an alar mass. ALCL patients often present with rapidly progressing lymphadenopathy. Extra-nodal manifestations commonly involve the skin, liver, lung, and gastrointestinal tract. Biopsy of the mass showed small to medium-sized anaplastic lymphoid cells that stained positive for CD30, LCA (CD45), CD99, and negative for CD20, ALK (CD246), neuron-specific enolase, CD34, CD5, PAX5, TdT, MPO, CD138, EMA, pancytokeratin, CD3 and synaptophysin. These findings were most compatible with an ALK-negative ALCL. The patient was started on a combination of brentuximab vedotin, cyclophosphamide, doxorubicin, and prednisone (BV + CHP) every 21 days for 6 cycles. There was a progressive decrease in the size of the mass, and a resolution was noted after the 5th cycle. FDG-PET/CT scan was done after the 6th cycle of chemotherapy and 6 months after completion of treatment. Both scans showed no evidence of metabolically active nodal or extra-nodal lymphomatous disease. This case showed a unique extra-nodal manifestation of an ALK-negative ALCL presenting as an alar mass with a good response to BV + CHP. However, more evidence is necessary to further establish the role of BV as the first-line treatment regimen for CD30-positive peripheral T-cell lymphoma (PTCL), including ALK-negative ALCL. **(Author's abstract)**

Keywords: *Lymphoma, Alar mass, ALCL, Anaplastic large cell lymphoma, Brentuximab vedotin, Case report, Medicine*

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NP

Capacity Needs Assessment of Primary Health Care Providers 11 in Selected Municipalities in Cavite

Tuazon, Josefina A. , Dones, Luz Barbara P. , Bonito, Sheila R. , Almoneda, I

Purpose. Primary Health Care (PHC) refers to essential health care that is made accessible, acceptable and affordable to individuals and families in the community. As such, it is imperative for PHC providers to possess the necessary competencies responsive to the current health care demands. This study aims to determine the current capacity of PHC providers and their need for capability building.

Methods. The study employed a quantitative descriptive design with 87 purposively-selected PHC providers and five administrators from selected rural municipalities in Cavite. It is adapted from the study, "Capacity-building of primary healthcare providers in 10+3 Southeast and East Asian Nursing Education and Research Network countries".

Results and Discussions. The perceived level of knowledge of the PHC providers on the elements of PHC were all rated to be proficient. Maternal and child care received the highest score, while health education received the lowest score. The perceived level of skills of the PHC providers was also rated to be proficient. Sanitation and water received the highest score, while treatment of common diseases and injuries received the lowest score. Similar to the perceived levels of knowledge and skills, the perceived level of attitudes of the PHC providers were also proficient, with environmental sanitation having the highest score but treatment of common diseases and injuries having the lowest score. However, from the perspective of health administrators, they rated the PHC

providers one level lower or needs minimal support. Training and capacity building in all elements of PHC was identified as the most needed by the PHC providers. Their most preferred method of training is workshop.

Conclusions. There are high perceived levels of knowledge, skills, and attitudes of the PHC providers in the elements of PHC. Despite the high scores, objective outcomes such as the MMR and immunization coverage do not reflect the proficient scores of the PHC providers. There are also other health conditions and issues such as noncommunicable diseases and injuries that need to be addressed using PHC approach. Given this, it is vital that appropriate training and adequate hiring of PHC providers be reinforced nationwide in order to meet the health goals and needs of the country. **(Author's abstract)**

Keywords: *Primary Health Care (PHC), Capacity-building, Southeast and East Asian Nursing Education and Research Network (SEANERN), Medicine*

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NP

0150

CARING AND WITNESSING IN AN URBAN POOR COMMUNITY THROUGH ENGAGED ETHNOGRAPHY AMIDST THE COVID19 PANDEMIC

Posadas, John

In this paper, I reflect on caring and witnessing through engaged ethnography of an urban poor community during the onset of the COVID19 pandemic. The urban poor are individuals and families who live below the poverty line in metropolitan areas, many of whom have little or no political voice and are insufficiently protected by social networks and other institutions.

In March 2020, the government placed Metro Manila under Enhanced Community Quarantine to control the spread of COVID19. This left many an urban poor community in Metro Manila to struggle even more against an already precarious existence. By standard, nurses render different levels of care for urban poor clients in almost all health care settings. In public health nursing, we come in close contact to the realities of our clients when we see them in health centers, in the community, or whenever we do our home visits. Now, caring for vulnerable and marginalized groups such as the urban poor has changed due to minimum public health standards of wearing masks, physical distancing, handwashing, and enforcement of lockdowns. As a nurse, an academic, and as a student of anthropology, I came up for self-review while doing an article for a popular social news network derived from a virtually engaged ethnography. While this novel method requires you to see the world through the eyes of the “other,” and generates bioethical dialogue and awareness of personal biases in addressing ethical considerations and challenges, it gives voice and fulfills our roles as client advocates. In May 2020, the article was published with the urban poor organization and its partners as my co-authors. I borrowed from anthropology to arrive at a greater understanding of the socio-cultural effects and political implications of COVID19 to one of the most vulnerable nursing clientele – the urban poor. **(Author's abstract)**

Keywords: *Caring, Enculturation, Nursing education, Simulation, Mentoring, Advocacy, COVID-19, Medicine*

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0151

A Case of Neovascular Glaucoma Secondary to Ocular Ischemia

Leuenberger, Edgar U. , Veloso, Amadeo A. , Gomez, James P

Objective: To present a case of neovascular glaucoma secondary to ocular ischemic syndrome following an uncomplicated phacoemulsification

Methods: This is a case description of a 74-year-old male who developed blurred vision and increased intraocular pressure (IOP) two months after an uncomplicated phacoemulsification cataract surgery with posterior chamber lens implantation of the left eye. There was iris neovascularization with absence of retinal dot/blot hemorrhages or neovascularization. The fluorescein angiogram (FA) showed delayed choroidal fluorescence and arteriovenous time. IOP-lowering medications and intravitreal injection of aflibercept were given. Carotid doppler test showed 70% stenosis of the ipsilateral artery but a subsequent magnetic resonance angiography (MRA) did not show evidence of significant stenosis.

Results: At his last consultation, visual acuity improved to counting fingers. IOP was maintained at 12 mmHg with one anti-glaucoma medication.

Conclusion: Ocular ischemia can confound the outcome of an uncomplicated cataract surgery. Doppler scans are usually chosen as the first-line exam for those suspected of carotid stenosis but, at times, may have contradictory results with MRA. (**Author's abstract**)

Keywords: *Neovascular glaucoma, Phacoemulsification, Ocular ischemic syndrome, Medicine*

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0152

A Case Report of Herpes Zoster of the Trigeminal Ganglion after Coronavirus 2019 Vaccination in a 22-year-Old Male

Durano, Reden

Introduction. Herpes zoster is an acute viral syndrome caused by the reactivation of latent varicella-zoster virus from a previous infection. It is characterized by a painful, unilateral vesicular rash which is distributed over the territory of a dermatome. It is a significant global burden with the incidence very common in the Asia Pacific region. The frequency is closely related with increasing age and is the most common risk factor for reactivation of varicella-zoster virus. Herpes zoster does not often appear after administration of vaccination. But in the advent of increasing vaccinations for COVID-19, there have been reports of herpes zoster following COVID-19 vaccination.

Case: This is a case of a 22-year-old healthy male with a previous history of varicella-zoster virus infection during childhood who developed headache, unilateral vesicular rash over the territory of the left trigeminal nerve and left-sided facial pain and numbness. The patient had previously received the COVID-19 vaccine four days prior to the onset of symptoms. The diagnosis of herpes zoster was made on clinical grounds with no need for additional laboratory work-up to confirm the diagnosis. The patient was treated with herpes zoster antiviral therapy and analgesics where improvement of the patient's condition was noted with eventual crusting of the lesions and without development of complications.

Conclusion: Herpes zoster is a common disease with a benign course in immunocompetent adults. There is a need for further studies to identify risk factors and explain the possible relationship between COVID-19 vaccination and the development of herpes zoster. Due to the increasing COVID-19 vaccination of the population worldwide, there is

a possibility of an increase in the number of herpes zoster cases following COVID-19 vaccination. (**Author's abstract**)

Keywords: *COVID-19, Herpes Zoster, COVID-19 vaccination, Medicine*

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NP

0153

Characteristics of Emergency Room Visits by Older Individuals in a Tertiary Government Hospital in Nueva Ecija *Nolasco, Marjo*

Background: Older individuals are more likely to utilize emergency care services than younger individuals due to the complexity of their condition. The increase in the demand for health services may lead to ER congestion, which may affect the quality of care being rendered. To the best of our knowledge, studies investigating the common medical causes of ER visits among older individuals have not been done in the Philippines.

Objectives: The study aimed to determine the characteristics of emergency room visits by older individuals in a tertiary government hospital in Nueva Ecija.

Methods: The study is a single-center, retrospective study conducted in a tertiary government hospital in Nueva Ecija. A total of 270 ER records of Internal Medicine patients aged 60 years old and above seen from June 2019 to September 2019 were included. Patients who absconded or were dead on arrival were excluded. Descriptive statistics were used for the demographic variables and the characteristics of the ER visits.

Results and Analysis: The mean age of older individuals included was 69.72 ± 7.62 . The average length of stay in the ER was 3.74 ± 2.34 Hours. Majority of visits occurred during the PM shift and were urgent cases. Majority of the patients seen were self-referral and were discharged. Patients commonly presented with difficulty of breathing. Diseases of the respiratory and circulatory system predominated. Chronic obstructive pulmonary disease and pneumonia were the leading causes of ER visits.

Conclusion: Diseases of the respiratory and cardiovascular systems remain to be the leading causes of ER visits among older individuals. COPD and pneumonia were the most common diagnoses identified. Factors associated with the increase in frequency of these preventable and treatable diseases should be investigated. Older individuals often seek consultation in the ER rather than a primary health care provider. Some of the cases can be managed on an ambulatory care basis. (**Author's abstract**)

Keywords: *Emergency room visits, Geriatric, Older adults, Medicine*

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NP

0154

Clinical Characteristics and Outcomes of Coronavirus Disease 2019-infected Adult Cancer Patients in the Philippines from March to December 2020 *Guardiario, Dawn , Buendia, Diane , Barzaga, Melina , Roa, Kathryn , Demegillo, Kenny Jun , Yu-Dela*

Cruz, Perlita , Gaboy-Malundo, Anna Flor , Mendoza, Marvin , Planilla, Jonas , Dala, Brylle Caesar , Igot, Mary Ondinee, Cornelio, Gerardo , Sacdalan, Danielle Bene

Background. Data on the clinical characteristics and outcomes of Filipino cancer patients who acquired the coronavirus disease 2019 (COVID-19) are limited and local information is lacking. Here we characterize the outcomes of patients with cancer and COVID-19.

Methods. Medical records of Filipino cancer patients with COVID-19 from the University of the Philippines – Philippine General Hospital (UP-PGH), Southern Philippines Medical Center (SPMC), De La Salle – University Medical Center (DLS- UMC), and St Luke’s Medical Center (SLMC) from March to December 2020 were reviewed.

Results. Sixty-nine cancer patients were identified to have COVID-19. The mean age was 53 years (range 19-88) and 45 (65%) patients were female. The most prevalent malignancies were from the gastrointestinal tract (16 [23%]) and the breast (14 [20%]). The majority (34 [49%]) had metastatic disease and had a functional status of Eastern Cooperative Oncology Group (ECOG) 2 or worse (39 [57%]). Forty-two (61%) patients had active oncologic treatment given for the past three months and twenty-four (35%) of these patients were on chemotherapy. The most common symptoms upon presentation were cough (34 [49%]) followed by dyspnea (28 [41%]). COVID-19 severity of this series was as follows: 15 mild (22%), 32 moderate (46%), 7 severe (10%), and 15 critical (22%). The majority received intravenous antibiotics (54 [78%]), investigational treatments (27 [39%]), and steroids (20 [29%]). Common complications were acute respiratory failure (20 [29%]), acute respiratory distress syndrome (17 [25%]), and septic shock (15 [22%]). At the end of the collection period, 21 (30%) cancer patients died. The mean length of hospital stay was 22 days.

Conclusion. Based on the findings of our case series, ECOG 2 and higher, metastatic stage, higher neutrophil to lymphocyte ratio showed a trend to worse outcomes. Cancer-related treatment within the past months did not appear to affect outcomes. **(Author's abstract)**

Keywords: COVID-19, SARS-COV2, Cancer, Philippines, Medicine

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0155

Clinical Outcomes of Oral Anticoagulation and No Anticoagulation among End-Stage Renal Disease Patients on Maintenance Hemodialysis with Atrial Fibrillation: A Single-Center Prospective Cohort Study

Darunday, Grecia P. , Polito, Eratosthe

Introduction. The delicate balance of risk versus benefit of oral anticoagulation in the general population is well established but the decision to use these agents in end-stage renal disease (ESRD) remains complex and difficult owing to the paucity of clinical trials and lack of substantial evidence in literature for its safe and effective use in the hemodialysis population. This study aims to determine the difference in clinical outcomes between oral anticoagulation and no anticoagulation therapy among ESRD patients on maintenance hemodialysis with atrial fibrillation.

Methods. This is a prospective, single-center, observational study conducted in Perpetual Succour Hospital that included all ESRD patients on maintenance hemodialysis for at least 3 months with atrial fibrillation. Out of the 188 identified patients, only 69 patients were included in the study and were grouped according to how the cardiac dysrhythmia was approached either with oral anticoagulation or no use of oral anticoagulation. Basic demographic information were obtained as well as the etiology of ESRD, CHA2DS2-VASc Score and the HAS-BLED Score. Lastly, patients were prospectively followed for a period of 12 months and were then assessed for new onset of thromboembolic events, hemorrhagic events, calciphylaxis and all-cause mortality.

Results. At enrollment, 59 (85.5%) patients were identified to have no oral anticoagulation therapy and 10 (14.5%) were already receiving oral anticoagulation. Ischemic strokes were more prevalent among patients who were on oral anticoagulant (80%, $p < 0.0001$). Patient outcomes differ significantly in terms of intracranial hemorrhage (30%, $p = 0.0004$) and gastrointestinal bleeding (50%, $p < 0.00001$) which were noted among patients on oral anticoagulation. In relation to over-all mortality, acute myocardial infarction, peripheral arterial occlusive disease and calciphylaxis, there was no significant difference between the two groups.

Conclusion. This study suggests that the use of oral anticoagulation did not prevent ischemic strokes in ESRD patients on maintenance hemodialysis with atrial fibrillation and its use was associated with increased risk for intracranial hemorrhage and gastrointestinal bleeding. There was no significant difference in relation to all-cause mortality, acute myocardial infarction, peripheral arterial occlusive disease and calciphylaxis between the two study groups. **(Author's abstract)**

Keywords: *End-Stage Renal Disease, Atrial fibrillation, Oral anticoagulation, Medicine*

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0156

Clinical Profile and Outcomes of Adult Filipino Patients with Septic Arthritis: A Descriptive Study

Yano, Mark Andr

Introduction: Septic arthritis is an infection of the joint. Considered a medical emergency, it requires prompt diagnosis and treatment. Local data on the clinical profile of septic arthritis patients in the Philippines are still limited. Therefore, this study aims to determine the clinical characteristics and outcomes of patients with septic arthritis in the local setting.

Objective: To determine the clinical profile and outcome of adult Filipino patients with septic arthritis admitted at a tertiary hospital.

Methodology: This is a retrospective descriptive study of the medical records of patients with septic arthritis admitted at Chong Hua Hospital, Cebu City, from January 2012 to December 2019.

Results: Fifty-seven patients were included in this study. Sixty-four percent were males. Forty-three percent were between the ages of 45 to 64 years old. Diabetes mellitus (49.12%) was identified as the most common comorbidity. 94% of patients presented with monoarthritis, with the knee being the most commonly involved joint (73%). 85% of patients presented with joint pain and swelling. Gram-negative bacilli were the most common pathogen isolated at 31.5%. In addition, 87% of patients had synovial fluid white blood cell counts of more than 50,000/uL. Ceftriaxone was the most commonly used empiric antibiotic (31.5%). Based on sensitivity results, empiric antibiotic treatment was adequate in 66.67% of the cases. 64% of patients underwent surgical intervention in addition to antibiotic therapy.

Conclusion: This study highlights the unique characteristics of septic arthritis in this population, such as its prevalence in middle-aged patients and the isolation of gram-negative bacilli as the most common isolate. This study showed that the majority of patients were male, with monoarthritis as the most common presentation. Half of the studied population had diabetes mellitus. High clinical suspicion and awareness of risk factors should be emphasized so that timely and adequate treatment may be provided. **(Author's abstract)**

Keywords: *Septic arthritis, Filipino patients, Clinical profile, Medicine*

Clinical Profile and Outcomes of COVID-19 Patients with Diabetes Mellitus: A Case Series

Dampil, Oliver Allan , Santos-Caratao, Fa

COVID 19 infection has taken millions of lives to date but knowledge regarding its occurrence is still new and evolving. Among the consistent data gathered over the past few months since it was declared as a pandemic by the WHO is that patients with underlying comorbidities, notably diabetes mellitus, hypertension, and obesity have worse clinical course and outcomes. The time frame when this study was conducted was during the period when the Philippines experienced the so- called “first wave” of the coronavirus in the local setting. This was also the time when any established drug therapy for COVID-19 infection was yet to be supported by any randomized controlled trials.

Of the 12 patients enrolled in the case series, all of them had one or more underlying illnesses; the most common of which were hypertension, Vitamin D deficiency/insufficiency and cancer. Majority of the patients had an HbA1c level between 7.0%-8.0%, while an average HbA1c level of 7.5% was seen in those who expired. A greater proportion of patients (33%) were classified under obese category 1; this was followed by 25% of patients who are overweight. However, 50% of the patients who expired were morbidly obese.

Treatment regimens for both diabetes mellitus and COVID-19 were also taken into consideration. Basal plus rescue dose regimen was the most common therapy comprising 50% of the patients. Only one patient was placed on insulin drip. For COVID-19 regimen, 40% of patients received combination antiviral therapy (ritonavir/lopinavir/oseltamivir) plus hydroxychloroquine. Half of the mortality seen in this study were given the combination of antiviral plus hydroxychloroquine. Thirty-Five percent of patients eventually expired, and these were also the set of patients who were placed on renal replacement therapy, inotropic support and mechanical ventilation during the course of their illness. **(Author's Summary)**

Keywords: *Diabetes mellitus, COVID-19, Comorbidities, Clinical outcomes, Medicine*

Clinical Profile and Treatment Outcomes of Patients with Neovascular Glaucoma in a Tertiary Hospital in the Philippines

Aquino, Jubaida M. , de Leon, John Mark S. , Uy, Angela Ther

Objective: To report the clinical profile and treatment outcomes of neovascular glaucoma (NVG).

Methods: A retrospective cohort study was done in a single tertiary hospital. Medical records of patients diagnosed with NVG from January 2000 to August 2018 were reviewed and pertinent data were collected. Study outcomes included visual acuity (VA) and intraocular pressure (IOP) and were analyzed for eyes that received any of the following: intravitreal bevacizumab (IVBe), pan-retinal photocoagulation (PRP), trabeculectomy with mitomycin (trab-MMC), or diode laser cyclophotocoagulation (DLCP) with at least 1 month of follow-up.

Results: There were 162 patients (181 eyes) diagnosed with NVG. Mean age at the time of diagnosis was 55.6 ± 14 years. Diabetic retinopathy (DR) was observed in 81 (45%) eyes and central retinal vein occlusion (CRVO) in 48 (27%) eyes. Baseline VA was hand movement in 67 (37%) eyes and no light perception (NLP) in 49 (27%) eyes. Only 60 (33%) eyes had ≥ 1 month of follow up (mean of 73 ± 119.1 weeks) after procedures were done. IVBe was done in 22 (37%) eyes, trab-MMC in 20 (33%), PRP in 22 (37%), and DLCP in 24 (40%) eyes. IOP decreased from 45 to 20 mmHg ($p < 0.001$) but VA decreased from LogMAR 1.7 to 2.1 ($p < 0.01$). There was significant VA decrease in eyes that underwent a single procedure ($p < 0.02$) but none in eyes that underwent 2 or 3 procedures. Nonetheless, there was significant IOP decrease ($p < 0.05$) when one procedure was done. Of the 49 eyes that had baseline sight, 19 (41%) converted to NLP ($p < 0.01$).

Conclusion: Most patients presenting with advanced NVG had DR and CRVO. Procedures led to better IOP but not VA and some lost vision. Aggressive screening for NVG among high-risk groups is warranted to institute treatment early. (**Author's abstract**)

Keywords: *Bevacizumab, Central retinal vein occlusion, Diabetic retinopathy, Neovascular glaucoma, Trabeculectomy, Medicine*

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0159

Clinical Profile of Adult Patients with Hyperglycemic Crisis at the De La Salle University Medical Center, A Ten-Year Retrospective Study

Pagsisihan, Daveric, Agoncillo, Andre Luis, Andag-Silva, Ai

This current study aims to report the clinical profiles and characteristics of diabetic patients who had been admitted for hyperglycemic crises from 2007 to 2017 at our institution.

Methodology. We conducted a retrospective study in a tertiary care university hospital outside Metro Manila. The data gathered were divided into three categories: clinical data, biochemical data and precipitating factors.

Results. A total of 3,120 adult patients with diabetes mellitus were admitted for various reasons, and 71 cases presented with DKA or HHS over the 10-year period of review which is equivalent to 2% of all diabetes mellitus cases admitted. Forty-six (64.79%) of the patients with hyperglycemic crises were known diabetics with a duration of 7-13 years. Majority of patients were not taking anti diabetic medications upon admission. Most patients with hyperglycemic crises were tachycardic and hypertensive upon admission. Majority were discharged and improved. Majority of the cases 53 (81.69%) had DKA. The most common precipitating factor in DKA and HHS was infection.

Conclusion. In conclusion, the biochemical profiles in our series did not significantly differ from the past study by Gatbonton et.al (1998). Despite the advent of new therapies for diabetes mellitus control, mortality among the patients with hyperglycemic crises was slightly higher in our study at 11% compared to the global reported data of 2-10%. One of the reasons could be the minimal improvements in our health care delivery system that is still unable to cater to the needs of diabetic Filipinos. Early screening programs should be done for patients beginning age 40 years and even earlier for those with risk factors for prompt detection and treatment of diabetes mellitus. Education and awareness should be strengthened for patients with diabetes mellitus to avoid the crises by emphasizing the importance of regular follow-up, monitoring and compliance with a diabetic regimen, especially with insulin and multiple OADs (oral anti-diabetic drugs) since the disease is progressive, and timely intensification of therapy is needed. (**Author's abstract**)

Keywords: *Type 2 diabetes mellitus, Hyperglycemic crisis, Oral-anti-diabetes drugs, Medicine*

Clinical Profile of Dry Eye Disease at the Philippine General Hospital
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Objectives: To describe the population of dry eye disease (DED) patients seen at the Philippine General Hospital (PGH) Dry Eye Clinic, and to compare the diagnosis, type, and severity of DED using Oculus Keratograph® 5M (Oculus GmbH, Wetzlar, Germany) with clinical diagnosis.

Methodology: This was a single-center comparative, cross-sectional study. Newly-diagnosed DED patients were recruited for the dry eye group. A subset of healthy volunteers without DED was also recruited for the control group. The clinical data for both groups were collected, and the Ocular Surface Disease Index (OSDI) questionnaire was administered. Standard clinical dry eye testing and Keratograph testing were subsequently done. The PGH Dry Eye Clinic definitions were used to classify the types of dry eye.

Results: Eighty (80) eyes of 40 patients per group were examined. For the dry eye group, the mean age and OSDI scores were significantly higher, while the average tear break up time (TBUT) was significantly lower. There was no significant difference in average basal secretion test (BST) and Schirmer 1 measurements between the two groups. 73% had evaporative type dry eye, while 27% had mixed type. Majority of the DED patients were females of >50 years old with mild evaporative type. Foreign body sensation was the most common symptom. Overall, there was poor agreement between clinical and Keratograph assessments of diagnosis and severity among patients in the dry eye group, but there was acceptable agreement when assessment was done in the control group.

Conclusions: DED patients at the PGH have similar characteristics to reported DED of other Asian populations. Evaporative or short TBUT type dry eye is the most frequently seen. Further formal validity study is needed for Oculus Keratograph® 5M to increase the value of its data to be included in routine dry eye screening. **(Author's abstract)**

Keywords: *Dry eye disease, Evaporative, Short TBUT, Philippines, Clinical diagnosis, Keratograph, Medicine*

Community-Academic Partnership in Action: Results of a Pilot Diabetes Intervention Program in Rural Southern Philippines

Cuajotor, Josephine R. , Misoles, Melvin S. , Bandala-Dinga, JC Louise P. , Candelario, Cristela

The increasing prevalence of diabetes in the Philippines is a growing public health concern, especially among prediabetic individuals lacking knowledge and awareness about the disease. This study evaluated the effectiveness of a 6-mo community-based health program in a rural area of southern Philippines. The pilot intervention comprised comprehensive learning modules, lectures, discussions, exercises, personalized nutrition counseling, and house-to-house monitoring visits conducted by healthcare professionals affiliated with a higher education institution (HEI), in collaboration with community leaders and health workers. Twenty-two (22) adults with

hyperglycemia were enrolled in the study, and their knowledge, attitude, and practices were evaluated before and after the intervention. The majority of participants were aged over 50 (90.91%), were female (86.36%), were married (95.45%), had completed secondary education (50.00%), and were unemployed (59.09%). The results indicated a significant improvement in participants' knowledge ($p < 0.001$) and practices ($p = 0.019$). However, the study revealed that attitudes remained predominantly neutral, suggesting challenges in adapting to the condition ($p = 0.266$). This study underscores the significance of community-academic partnerships and the engagement of community health workers in fostering sustainable health promotion initiatives. Future research endeavors could explore the integration of diverse health promotion strategies to enhance positive attitudes toward diabetes management. The findings of this study can provide valuable insights for larger-scale multisectoral investigations, as well as inform the development of effective and tailored diabetes prevention and management programs in the Philippines and worldwide. **(Author's abstract)**

Keywords: *Community-academic partnership, Diabetes, Health education, Health promotion, Philippines, Medicine*

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0162

Comparative Analysis of Meibomian Gland Dysfunction in Eyes with and without Eyelid Margin Tattoos

Tiu, Tommee Lynne T. , Gomez, James Paul S. , Leuenberger, Edgar U. , Garcia, Ma. Joanna Carla Z., Noguera, Sharlen

Objective: To compare the presence and severity of meibomian gland (MG) dysfunction among eyes of female subjects with and without eyelid margin tattoos using infrared meibography and colored photographs.

Methods: This is a cross-sectional, descriptive study that involved 38 Filipino females with and without eyelid margin tattoos. Infrared meibography was performed on the upper and lower eyelids of each eye to assess total or partial MG dropout. Colored photographs were taken to evaluate vascularity, irregularity, thickening of the lid margins, and plugging of MG orifices. Severity of MG dysfunction (MGD) was assessed using Arita's MGD proposed grading scale. Independent t-test was used to compare MG dropout and other lid margin parameters between the two groups. Prevalence ratio and prevalence odds ratio were calculated to measure the likelihood of MGD among eyes with eyelid tattoos.

Results: Seventy-four (74) eyes were included in the study (36 in the tattoo group and 38 in the control group). Scores for abnormal vascularity, irregularity, and thickening of the lid margins were significantly higher in the tattoo group compared to the control group ($p < 0.0000001$). However, plugging of gland orifices scores between the two groups were found to be similar (upper eyelid: $p = 0.65$; lower eyelid: $p = 0.91$). Total MG dropout was significantly greater in the tattoo group (upper eyelid: -1.11 ± 0.82 ; lower eyelid: 1.37 ± 0.75) compared to the control group (upper eyelid: 0.53 ± 0.83 ; lower eyelid: 0.45 ± 0.76) (upper eyelid: $p = 0.003$; lower eyelid: $p = 0.000001$) for the upper and lower eyelid, respectively). Analysis of total MG dropout between the two groups showed a prevalence ratio of 2.13.

Conclusion: Eyelid margin tattoos are associated with several eyelid margin abnormalities and increase the risk of meibomian gland dropout. **(Author's abstract)**

Keywords: *Meibomian gland dysfunction, Eyelid margin tattoos, Infrared meibography, Medicine*

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A Comparative Evaluation of Visual, Refractive, and Patient-Reported Outcomes of Three Diffractive Trifocal Intraocular Lenses

Torres, Ryan S. , Agas, Mark Sylvester F. , Jordan-Yu, Janice Marie N. , Ang, Robert Edward T., Cruz, Emerso

Objective: To compare the visual, refractive, and patient-reported outcomes of eyes implanted with one of 3 trifocal intraocular lenses (IOLs).

Methods: This is a cross-sectional, comparative, non-interventional study wherein subjects implanted with FineVision Micro F, AT LISA tri 839MP or AcrySof IQ PanOptix trifocal IOL after phacoemulsification were recruited. Manifest refraction, uncorrected and corrected visual acuity (VA) at distance, intermediate and near vision, contrast sensitivity, modulated transfer function (MTF) values and questionnaire answers were compared among the 3 groups using analysis of variance (ANOVA).

Results: Fifty-seven (57) eyes were included in the study: 21 eyes with FineVision (group A), 21 eyes with LISA tri (group B), and 15 eyes with PanOptix IOL (group C). The post-operative mean manifest spherical equivalent was -0.01D, -0.07D, and 0.05D, respectively ($p=0.083$). Uncorrected distance VA and best-corrected distance VA were similar among the groups. Groups A and C had better uncorrected and corrected intermediate VA at 80 cm and at 60 cm compared to group B. Group A had significantly better uncorrected near visual acuity than groups B and C ($p=0.032$). Mesopic contrast sensitivity testing showed group C had higher contrast sensitivities without glare in at the spatial frequency of 6 CPD ($p=0.038$) and with glare at 3 CPD ($p=0.039$) and at 12 CPD ($p=0.009$). MTF average height analysis showed that the group A had significantly superior resolution in far targets compared to groups B and C ($p=0.001$). At near targets, groups A and C had better resolutions compared to group B ($p=0.017$). There was no significant difference in patient satisfaction for far, intermediate and near VA among the groups.

Conclusion: Eyes implanted with any of the 3 trifocal IOL designs achieved excellent uncorrected and bestcorrected distance, intermediate and near vision. FineVision and PanOptix provided significantly better intermediate vision than LISA tri at both 80 cm and 60 cm testing distance. FineVision had better near visual outcomes than PanOptix and LISA tri. Patient satisfaction was high in all 3 trifocal IOLS. (**Author's abstract**)

Keywords: Trifocal intraocular lenses, AT LISA tri 839MP, AcrySof IQ Panoptix, FineVision Micro F, Modulated transfer functions (MTF)–average height, Strehl ratio, Visual Strehl optical transfer function (VSOTF), Medicine

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Comparison of Intraocular Lens Calculation Formulas for Phacoemulsification after Corneal Refractive Surgery in Asian Eyes

Sy, Mary Ellen , Jacoba, Cris Martin, Jacoba, Isa Mulingb

Objective: To compare the different intraocular lens (IOL) calculation formulas available on the American Society of Cataract and Refractive Surgery (ASCRS) IOL power calculator website among Asian eyes with previous corneal refractive surgery.

Methods: A retrospective cohort study of 84 eyes in 68 Asian patients who had phacoemulsification with previous

LASIK or photorefractive keratectomy (PRK) was done. Using the post-phacoemulsification manifest refraction spherical equivalent (MRSE) as target refraction, IOL prediction error (PE) for each formula was calculated as the implanted minus the predicted IOL power. Refractive PE was determined by calculating that 1 diopter (D) of IOL PE produces 0.7 D of refractive error at the spectacle plane.

Results: Comparing the Shammas, Haigis-L, Barrett True-K No History, ASCRS Average IOL Power No History, Barrett True-K, and ASCRS Average IOL Power with Change in Manifest Refraction (Δ MR), the mean IOL PEs ranged from -0.23 to -0.62 D, with the Barrett True-K having the lowest PE. The median refractive PEs for all formulas were similar at 0.35 D, except for the Haigis-L at 0.53 D. The ASCRS average with Δ MR had a statistically higher percentage of eyes within 0.5 D of target refraction versus other formulas ($p < 0.05$). The Haigis-L IOL PE and refractive PE were significantly higher than the Barrett True-K ($p < 0.001$), and the ASCRS average with Δ MR ($p < 0.001$) respectively. The ASCRS average with Δ MR produced a significantly smaller variance of IOL PE ($p < 0.05$).

Conclusion: Accounting for PEs and variance, the ASCRS average IOL power with Δ MR is recommended, followed by the ASCRS average IOL power No History if without historical data. (**Author's abstract**)

Keywords: LASIK, PRK, ASCRS, IOL Calculation, Refractive Surgery, Medicine

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0165

Comparison of the Clinical Profile of Patients with Glaucoma Between Private and Government Clinics in the Philippines

Chao-Po, Denise Polly, Felarca, Irene R., Covar, Rainier Victor A., FlorCruz, Nilo Vincent, De Leon, John Mark S., Martinez, Jose Ma. D., Tumbocon, Joseph Anthony J., Yap-Veloso, Maria Imelda, Ang, Robert Edward T., Gomez, James Paul S., Leuenberger, Edgar Felipe U., Siao-Mariano, Shalam, Balgos, Marie Joan Therese D., Atienza, Noe

Objective: To describe the demographic and clinical characteristics of patients with glaucoma managed at private and government institutions in the Philippines between 2009 and 2014.

Methods: A research team from two private and two government institutions in the Philippines reviewed the case records of 1246 patients seen who met the following criteria: intraocular pressure of >21 mmHg, optic nerve and nerve fiber layer abnormalities, and visual field defects. For bilateral cases, we selected the eye with worse glaucoma parameters.

Results: There were 600 and 646 patients in the private and government groups (mean age at presentation, 60.51 and 55.88 years), respectively, with the majority being Filipino (91%). Patients with visual acuity (VA) of 20/20 to 20/40 were more frequently observed in private centers (58.7% vs. 41.3%), while a VA worse than counting fingers was more frequently observed in government centers (66.1% vs. 33.9%). Within-group analysis showed that primary angle-closure glaucoma was the most frequent glaucoma subtype in both private (27.3%) and government institutions (37.8%). In between-group analysis showed the following to be more common in private than government centers: primary open-angle glaucoma (61.3% vs. 38.7%), normal-tension glaucoma (63.9% vs. 36.1%), ocular hypertension (92.3% vs. 7.7%), and glaucoma suspects (80.4% vs. 19.6%) while government institutions registered a larger number of primary angle-closure glaucoma (59.8% vs. 40.2%) and secondary glaucoma (70.3% vs. 29.7%) cases. Medical treatment using a single drug and multiple drugs was employed for 245 (23%) and 825 (77%) patients, respectively. Within-group analysis showed that laser iridotomy and trabeculectomy were the most commonly performed laser and surgical procedures in both institution types.

Conclusion: There is a contrasting profile of glaucoma between clinical institutions in the Philippines with open angle glaucoma being more predominant in private centers while closed-angle glaucoma and secondary glaucoma

being more frequent in government centers. Our findings may provide important preliminary information that can aid future health studies or training programs. (**Author's abstract**)

Keywords: *Glaucoma,, Epidemiology, Private institutions, Government institutions, Philippines, Medicine*

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0166

Comparison of Trabecular Bone in Impacted and Normal Erupted Unilateral Maxillary Canine Teeth Using Cone-Beam Computed Tomography in Patients Scheduled for Orthodontic Treatment at the Universitas Airlangga Dental and Oral Hospital

Narmada, Ida Bagus , Adiwinarso, Bawa, Hamid, Thalca Ag

Background. Cone-beam computed tomography is being utilized in more clinical contexts and determining bone density with this method is becoming more important. Dentists, particularly dentomaxillofacial radiologists, orthodontists, and oral surgeons, must have a solid understanding of gray value. The gray values acquired from cone-beam computed tomography images are used to assess dental implant bone density, diagnose dental ankylosis, and diagnose and differentiate pathological lesions.

Objective. To determine the difference in the gray value of the trabecular bone in the impacted and normal erupted maxillary canine teeth using cone computed tomography.

Methods. We retrospectively evaluated the cone-beam computed tomography images of patients scheduled for orthodontic treatment at the Universitas Airlangga Dental and Oral Hospital. On cross-sectional cone-beam computed tomography images, the region of interest determination of 5 mm² in the area was placed in the trabecular bone and the gray value measurements were collected using Digital Imaging and Communications in Medicine (OnDemand3D™) dental software. The images were categorized by type of impacted canine teeth after assessing the gray values of all the teeth. Using images on the mesial, distal, buccal, and palatal areas, gray values of impacted and non-impacted teeth were compared. We used the SPSS 24 software.

Results. From a total of 13 patient radiographs, we found types I (6/13), II (6/13), and VII (1/13). The mean pixel values of impacted maxillary unilateral canine teeth were 1972.92 (mesial), 2016.55 (distal), 1990.66 (buccal), and 1904.39 (palatal). The mean pixel values of normal erupted maxillary canines were 1754.93 (mesial), 1710.53 (distal), 1852.94 (buccal), and 1674.49 (palatal). There were significant differences between impacted and normal erupted maxillary canines: mesial ($P = 0.018$), distal ($P = 0.000$), buccal ($P = 0.003$), and palatal ($P = 0.036$).

Conclusion. There were statistically significant differences between affected and unaffected gray values in the canines in FOV size 51 × 55 mm. However, no statistically significant differences were found in the gray values in trabecular bone of unilateral maxillary impacted canines and normal erupted canines on the mesial, distal, buccal, and palatal sides. (**Author's abstract**)

Keywords: *Impacted, Canine, Trabecular bone, Maxillary, Cone-beam computed tomography, Medicine*

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Comparison of Visual Performance of Monofocal Intraocular Lenses with Different Asphericities

Cruz, Emerson M. , Torres, Ryan S. , Padilla, Jr., Mario Gerald A. , Geronimo, Ralph Ernesto U. , Figueras, Michel Marco P. , Ang, Robert Edw

Objective: To compare the visual performance and patient-reported outcomes of three types of monofocal intraocular lenses (IOL) with different asphericities.

Methods: This cross-sectional, comparative study comprised of 62 pseudophakic eyes divided into three groups corresponding to the IOL that they were previously implanted with (Tecnis ZCB00 negative aspheric IOL, EnVista MX60 neutral aspheric IOL and Akreos Adapt spheric IOL). Mean refractive spherical equivalent (MRSE), best-corrected far visual acuity (BCVA), spherical aberration (SA), contrast sensitivity (SC), halo and starburst, and responses to a qualitative questionnaire (NEI-RQL) were measured.

Results: There was no significant difference in MRSE ($P=0.74$) and BCVA ($P=0.52$) among the three groups. There was a statistically significant difference ($P=0.00$) in mean internal (lens) SA, measured through a 5mm pupil, among Tecnis ($-0.150 \mu\text{m}$), EnVista ($+0.022 \mu\text{m}$) and Akreos Adapt ($+0.094 \mu\text{m}$). Compared to the Akreos Adapt, the Tecnis and EnVista groups had significantly better CS at 6 CPD and 12 CPD under mesopic testing without glare ($P= 0.01$) and at 6 CPD mesopic testing with glare ($P=0.04$). Halo scores were insignificant among the three groups. However, starburst scores were significantly worse in the Akreos Adapt IOL than the Tecnis and EnVista ($P=0.01$). There was no difference in questionnaire responses among the three groups.

Conclusion: The negative aspheric and neutral aspheric lenses showed significantly lower SA resulting in better CS in mesopic conditions and better starburst scores. MRSE, BCVA and subjective satisfaction were statistically similar regardless of the type of monofocal intraocular lens. **(Author's abstract)**

Keywords: *Spherical Aberration, Asphericity, iTrace, Contrast Sensitivity, Medicine*

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Compassionate Nurse: A Concept Analysis

Ferreras, Gerald

The purpose of this article is to develop a framework on fostering compassion among nurses, by examining the attributes of the concept of compassion. This concept analysis utilized the Walker and Avant Framework. A review of literature indicates that compassion in nursing remains constant throughout the years even with changes prompted by the academe, healthcare and advancement in technology. Results show the defining attributes of compassion include full acceptance of duties and responsibilities and security in workplace to develop compassion. To become compassionate, a nurse must (a) be holistically prepared, (b) experience a sense of personal and professional development, and (c) possess the initiative to fulfill patient's needs. Thus, nurses can provide quality care and prevent the occurrence of patient neglect. This concept of compassion reveals that self-awareness and security from the organization can foster compassion among nurses. **(Author's abstract)**

Keywords: *Compassionate, , Nurse, Caring, Medicine*

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Complete Androgen Insensitivity in Two Filipino Siblings: A Case Report

Lim-Pacoli, Mae Rhea , De la Cruz, Alistair Kashmir C. , Ediza, Vanessa S., Chu, Alber

Androgen insensitivity syndrome is an X-linked recessive condition resulting in a failure of normal masculinization of the external genitalia in a chromosomally male individual. We describe two phenotypically female siblings aged 27 and 18 years, who presented with primary amenorrhea. The older sibling first consulted because of her desire to be pregnant while her younger sibling consulted upon the physician's advice. Clinical presentation, physical examination, hormonal and imaging studies and a male (46XY) karyotype confirmed the diagnosis of Complete Androgen Insensitivity Syndrome (AIS) in both individuals. Both of them underwent exploratory laparotomy with histopathology confirming presence of immature testicular tissue. Hormone replacement therapy was then started. Both were advised to undergo psychosocial counseling and both chose to be women. This case report is significant since there are only a few local case reports about siblings presenting with this condition. **(Case Summary)**

Keywords: *Primary Amenorrhea, Androgen Insensitivity Syndrome, Karyotyping, Medicine*

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Complete Reversal of Severe Pulmonary Artery Hypertension After Antiretroviral Treatment in a 43-year-old Newly Diagnosed HIV-infected Male: A Case Report

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Background: Human Immunodeficiency Virus (HIV) infection can be complicated by pulmonary arterial hypertension (PAH-HIV) wherein it can occur in approximately 0.5% of HIV patients. The benefit of ART in treating PAH-HIV is unclear in this population. Data on its safety, efficacy, and effect on the progression of PAH are conflicting and limited. In this case report, improvement in PAH was noted after ART was started.

Case: A 43-year-old, male, patient with no comorbidities, consulted due to a five-month history of progressive dyspnea, body malaise as well as weight loss. The patient is heterosexual with multiple sexual partners, an injection drug user, and was previously worked up for HIV, Hepatitis B, and C with unremarkable results. Initially managed as a case of Pneumonia but on CT scan was found to have a suprahilar mass which showed chronic granulomatous features. The positive GeneXpert confirms Pulmonary Tuberculosis (PTB). However, dyspnea was noted to progress thus 2D echocardiography was done which revealed severe pulmonary arterial hypertension with normal left ventricular function. Rescreening for HIV turned out positive thus started on anti-retroviral therapy (ART) with a noted improvement of symptoms as well as improvement and eventual normalization in pulmonary artery pressure. One year after initial diagnosis, undetectable viral load for HIV and Hepatitis C were noted along with improvement in CD4 count.

Conclusion: This is a rare case of severe pulmonary hypertension as an initial presentation for HIV infection. The approach to patients with incidental PAH may include work-up for HIV especially when risk factors are present. ART treatment may provide a favorable therapeutic option if initiated early. **(Author's abstract)**

Keywords: *Pulmonary Arterial Hypertension, Human Immunodeficiency Virus, Antiretroviral Therapy, Pulmonary Tuberculosis, Case Report, Medicine*

A Concept Analysis of Role Modeling *Pugrad, Bherit Ke*

Role modeling is a strategy used to teach attitudes and behaviors. It is a modality that may be consciously and unconsciously executed by the role model. This concept is used interchangeably with mentoring. Thus, requires further clarification and understanding. The Walker and Avant method was adopted as the main tool of analysis in understanding this concept. The identified antecedents of role modeling are the role of aspirants' ideals and perspectives and the role models' experiences. The attributes that have emerged are facilitating learning, embodiment, inspiring, transforming, reinforcing, connecting, and caring. The consequences are transforming, reinforcing motivation and goals, and the conception of new role models. This implies that role modeling is a cyclical and interactive process. It is continuously constructed both by the role aspirants and role models. Nurse educators, staff nurses, and managers act as the primary role model of neophyte nurses. Thus, they should remain cognizant in their practice. The way they interact with their subordinates greatly influences their role aspirants' motives and ideals, who will later assume the responsibilities of a future role model. **(Author's abstract)**

Keywords: *Role modeling, Role model, Concept analysis, Medicine*

The Concept of Nursing in the Philippines from the Perspective of Nurses in Region I *Nero, Francis*

This research endeavored to explore the concept of nursing in the Philippines from the perspectives of Ilocano nurses to develop a nursing description based on the Filipino nurses' perceptions of nursing practice that will contribute to the richness of the concept of nursing in the Philippines.

The participants of the study included 16 practicing nurses in Region I (Ilocos Region) who were identified through purposive sampling based on the inclusion criteria. Using phenomenology research design, the researcher utilized in-depth semi-structured individual interviews to gather the data from 2015-2016. Colaizzi's method was used in data analysis. Ethical clearance was granted by the SLU-REC with certification number 2014-013.

The findings of the study revealed four (4) major themes, which are: 1) *Mangtaraken* or Caring, 2) *Mangpasantak* or Nurturing, 3) *Mangipateg* or Valuing, and 4) *Mangsalimetmet* or Preserving. Ilocano nurses explicate the concept of nursing in the Philippines as *mangtaraken*, which is described as the art, science, and discipline of caring; *mangpasantak*, which is to nurture an individual; *mangipateg*, which pertains to valuing the individual, family, and community; and *mangsalimetmet*, which refers to the preservation of the profession, culture, and knowledge generation. The findings revealed that the meaning of nursing is culture-based which is deeply rooted in their traits as Ilocanos. **(Author's abstract)**

Keywords: *Concept of nursing, Perspective of nurses, Ilocano nurses, Region I, Ilocos Region, Medicine*

The Construction of Coping of Adults with Rheumatoid Arthritis

Uy, Moi

Purpose: People living with diseases where symptoms are not visible to the naked eye, such as Rheumatoid Arthritis (RA), are frequently misunderstood by the public and consequently face numerous conflicts in their lives. The study aims to develop an explanatory framework towards the constructions of coping of adults with rheumatoid arthritis (RA).

Design: The study made use of the Straussian Grounded Theory Method. 15 adults with ages ranging from 21 to 50 years old, diagnosed by a licensed physician with rheumatoid arthritis for at least six months at the time of the study, with an active social media account, and are in the convalescence or remission phase participated in the study. The study setting was based on the participants' preferences within the National Capital Region, Central Luzon, and Calabarzon areas. This study has been reviewed and approved by UPManila Research Ethics Board (UPMREB).

Methods: Purposive sampling and theoretical sampling were used in selecting the participants. Unstructured interviews and observation played central roles in the data collection. Consistent with the Straussian Grounded Theory method, the analysis was based on data immersion and iterative open, axial, and selective coding.

Findings: The constructions of coping in persons with Rheumatoid arthritis was presented through a “coding paradigm” of causal conditions (disconnect and invisible suffering), context (isolation and psychosocial burdens), intervening conditions (cultural values and family attitude, values, beliefs, and dynamics), strategies (joining online RA group and sticking with people who understand), and consequences (regaining control and helping others with the same condition) which were further explained in this paper.

Conclusion: The study presents experiences of persons with RA and their constructions of coping, shedding light on the often- misunderstood course of symptomatology and the struggles the afflicted persons go through. Despite having social media as the milieu by which these concepts emerge, this study's theoretical model may help health practitioners understand persons afflicted with diseases with imperceptible symptoms. Understanding their experiences in the context of the theoretical model presented could suggest information and support modalities for these groups of people. **(Author's abstract)**

Keywords: *Medicine, Rheumatoid arthritis, Invisible symptoms, Constructions of coping, Online support group (OSG)*

Convalescent Plasma Therapy in Filipino Patients with Confirmed COVID-19 Infection in a Tertiary Hospital in Cebu City: A Retrospective Cohort Single Center Study

Introduction: Convalescent plasma therapy (CPT) is a type of experimental passive immunotherapy with a sizable background in viral outbreaks. Although there has been documented favorable outcomes in using CPT in the treatment of viral illnesses, its use in COVID-19 is still experimental.

Objectives: To determine if adding convalescent plasma to standard of care is associated with better clinical outcomes than giving standard of care alone to severe and critical COVID-19 patients admitted in a tertiary hospital in Cebu City.

Methods: This is a retrospective cohort study conducted in a tertiary hospital in Cebu between March to September 2020. The data of a total of 22 COVID-19 patients who received convalescent plasma therapy plus standard treatment regimen based on the institution's interim guideline were identified by chart review. The demographic information, laboratory results, management and outcome data from this group were collated, matched with and compared to 43 critically ill COVID-19 patients who received COVID-19 standard treatment regimen only.

Results: Both the CPT and non-CPT groups are comparable in terms of the socio-clinical variables, inflammatory marker levels, laboratory test results and therapeutic interventions. However, there is no relationship between the level of inflammatory markers and the illness day to which CPT was given. Additionally, the outcomes also differ significantly in terms of duration of admission, severity of illness, critical care support and mortalities. The control group has shorter hospital admissions, more patients with critical illness and more mortalities. The intervention arm, however, has more recoveries but longer duration of critical care.

Conclusion: Convalescent Plasma Therapy added to standard treatment is not associated with improved clinical outcomes among Filipino patients with severe or life-threatening COVID-19 infection admitted in a tertiary hospital in Cebu City. (**Author's abstract**)

Keywords: COVID-19, Convalescent plasma, Outcomes, Retrospective study, Medicine

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0175

The Correlates of Health Facility-related Stigma and Health-seeking Behaviors of People Living with HIV

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Objective. This study aims to assess the presence of stigma in health facilities and health-seeking behaviors of persons living with HIV (PLHIV).

Methods. This study utilized a cross-sectional design employing self-report questionnaires answered online. A total of 100 PLHIV participants were recruited using the respondent-driven sampling method.

Results. Results revealed that most participants are young adult men who have been diagnosed with HIV within the last five years. Overall, participants display moderate health-seeking behavior ($M = 2.94$, $SD = 0.54$), and moderate experience of health facility-related stigma ($M = 2.21$, $SD = 0.87$). Further, there is a negative correlation between age and health-seeking behavior ($r = -0.2796$, $p = 0.049$). The type of facility is significantly correlated with HIV stigma ($r = 0.4050$, $p = 0.036$).

Conclusion. A sustained linkage to care is essential for a PLHIV to remain engaged on his health and well-being. Necessary strategies should be implemented to improve the health-seeking behaviors of PLHIV. Public Rural

Health Units are considered to be the most stigmatizing health facility. The presence of health facility-related stigma requires immediate action of the government to reinvigorate these catchment centers as providers of stigma-free and nondiscriminatory primary health care. (**Author's abstract**)

Keywords: *Human Immunodeficiency Virus, HIV, Stigma, Health facility, Health-seeking behaviors, People living with HIV, PLHIV, Philippines, Medicine*

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0176

Correlation Between Admitting Blood Glucose Levels and Hospital Outcome in Patients who Underwent Percutaneous Coronary Intervention

Duyongco-Tiu, Ma. Vircel, Damalero, Alta Gracia B., Lagula-Bilocura, Ime

Objectives: This study aimed to determine the correlation between admitting hyperglycemia and hospital outcome, on the length of hospital stay and mortality on patients who underwent PCI.

Methodology: A single center, retrospective observational study involving patients who underwent percutaneous coronary intervention (PCI). They were divided in four (4) groups according to presence of admission hyperglycemia (capillary blood glucose >140mg/dl) and presence of diabetes: Group 1 (patients with diabetes with admission hyperglycemia), Group 2 (patients without diabetes with admission hyperglycemia), Group 3 (patients with diabetes without admission hyperglycemia), and Group 4 (patients without diabetes without admission hyperglycemia). Length of hospital stay and mortality outcome were compared between four groups and in-hospital mortality related risk factors were analyzed by binary logistic regression analysis.

Results: 133 patients were included in the analysis, of which 50% have admission hyperglycemia. The length of hospital stay was significantly longer in patients with admission hyperglycemia (12 vs 9 vs 7 vs 7 days, $p=0.006$). The mortality rate between 4 groups were non-significant (14% vs 10% vs 9% vs 11%, $p=0.272$). Multiple logistic regression analysis showed the following were associated with increased mortality in patients who underwent PCI: age (odds ratio [OR] 1.1265, 95% CI 1.0497 – 1.2090, $p=0.001$), capillary blood glucose on admission (OR 1.0077, 95% CI 1.0015 – 1.0140, $p=0.015$), presence of ST elevation on ECG (OR 16.5671, 95% CI 3.4161 – 80.344, $p<0.001$).

Conclusion: An elevated admission capillary blood glucose, regardless of presence or absence of diabetes, was associated with longer length of hospital stay; however, it was not predictive of in-hospital mortality. Interestingly, patients with admitting hyperglycemia had earlier mortality. (**Author's abstract**)

Keywords: *Admission hyperglycemia, Capillary blood glucose, Diabetes mellitus, PCI, Medicine*

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0177

The correlation between the professional quality of life and job satisfaction of physicians and nurses currently working in COVID-19 areas of tertiary hospitals in Metro Manila and CALABARZON (Region IV-A)

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Introduction The COVID-19 pandemic put the healthcare worker's professional quality of life (ProQoL) and job satisfaction (JS) at risk. This study determined the correlation between ProQoL, and the nine facets of and overall JS of physicians and nurses working in COVID-19 areas in Metro Manila and CALABARZON tertiary hospitals. It also determined their demographics, and measured the ProQoL, and overall JS and its nine facets.

Methods Physicians and nurses working in COVID-19 areas of tertiary hospitals in Metro Manila and CALABARZON were recruited and asked to answer the Professional Quality of Life Scale Version 5 and Job Satisfaction Survey. Correlation between ProQoL and JS was determined through Spearman's correlation coefficient.

Results High overall JS among 90 physician and nurse respondents correlated with high compassion satisfaction ($\rho = 0.310$), low burnout ($\rho = -0.480$) and secondary traumatic stress ($\rho = -0.240$). Correlations were found between ProQoL, and overall JS and pay, supervision, contingent rewards, coworkers, nature of work, and communication. A strong negative correlation between pay and burnout was observed ($\rho = -0.500$).

Conclusion The overall JS of physicians and nurses has a moderate positive correlation with compassion satisfaction, moderate negative correlation with burnout, and low negative correlation with secondary traumatic stress. Pay and burnout have a strong negative relationship. (**Author's abstract**)

Keywords: *Professional quality of life, Job satisfaction, COVID-19, Compassion satisfaction, Compassion fatigue, Medicine*

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0178

The Correlation of Ankle Brachial Index and the severity of Acute Ischemic Stroke in a Tertiary Hospital in Davao City, Philippines: A Cross-Sectional Study

Lao-Reyes, Annabelle Y. , Fernandez, Sime Raym

Introduction: Peripheral arterial disease (PAD) had been shown to have a higher likelihood of developing cardiovascular events as well as cerebrovascular accidents particularly acute ischemic stroke. However, there are limited data on the association between ankle brachial index (ABI) values and the severity of ischemic stroke. This study aimed to determine the correlation of ABI values and the severity of acute ischemic stroke in Southern Philippines Medical Center.

Methods: A prospective cross-sectional study with 112 patients diagnosed with acute ischemic stroke from June to October 2017. The ABI ratio of the subjects were obtained and correlated with the severity of stroke using National Institutes of Health Stroke Scale (NIHSS). Data analyses utilized chi-square test for categorical variables while ANOVA test for continuous variables. Spearman rho was used to determine the association between ABI and NIHSS.

Results: Majority of patients with acute ischemic stroke had PAD with ABI ratio of ≤ 0.9 (51.8%). Using t-test, the NIHSS was significantly higher among patients with PAD having a mean score of 12.43 ± 5.29 compared to patients with normal ABI ratio having a mean score of 5.13 ± 4.09 ($p < 0.001$). Furthermore, using Spearman's rho statistics, ABI ratio was negatively correlated with NIHSS score ($p < 0.001$).

Conclusion: Our results confirmed that there is a correlation between low ABI value and the severity of acute

ischemic stroke. Routine ABI screening may help physicians intensify treatment strategies for those high-risk patients to prevent future events. **(Author's abstract)**

Keywords: *Peripheral arterial disease, Ankle brachial index, Stroke, Medicine*

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0179

A correlational study of burnout, compassion fatigue, and moral injury related to resilience of nurses in COVID-19 wards of a public hospital in Metro Manila

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Introduction Increased healthcare demands due to the COVID-19 pandemic have overwhelmed nurses worldwide. Resilience of nurses has been impacted due to many factors (e.g., longer work shifts) causing psychological distress. The study aimed to determine the correlation of burnout, compassion fatigue, and moral injury with resilience among nurses assigned in COVID-19 wards.

Methods Virtual survey tools were sent to nurses of a public hospital to obtain data. Data were analyzed using JAMOVI and SPSS.

Results Levels of burnout showed moderate burnout in personal burnout (f=44) (65.7%); Moderate burnout in work-related burnout (f=36) (53.7%); no/low level of burnout in client-related burnout (f=48) (71.6%). Level of compassion fatigue showed job burnout (f=59) (88.1%). Level of moral injury indicated “requiring clinical attention” (f=52) (77.6%). Level of resilience showed medium resilience (f=45) (67.2%). Correlation between burnout and resilience yielded negligible negative correlations between personal burnout and resilience (r=-0.160, p=0.031), work-related burnout and resilience (r=-0.222, p=0.008), and client-related burnout and resilience (r=-0.120, p=0.741). Correlation yielded weak negative correlations between compassion fatigue and resilience (r=-0.254, p=0.038) and between moral injury and resilience (r=-0.318, p=0.009). The linear regression showed no significant correlations between personal burnout and resilience (p=0.063), work-related burnout and resilience (p=0.070), client-related burnout and resilience (p=0.331), compassion fatigue and resilience (p=0.080), moral injury and resilience (p=0.227).

Conclusion The findings showed significant correlations between personal burnout and resilience, workrelated burnout and resilience, compassion fatigue and resilience, and moral injury and resilience. There were no significant correlations between client-related burnout and resilience. Multiple linear regression indicated burnout, compassion fatigue, and moral injury are not predictive factors for resilience. **(Author's abstract)**

Keywords: *Resilience, Burnout, Compassion fatigue, Moral injury, Medicine*

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0180

COVID-19 Guidance on the Resumption of Eye Surgery

Santiago, Maria Donna D. , Rondaris, Maria Victoria A. , de Leon, John Mark S. , Anzures, Rachelle G. , Aquino, Jubaida M. , King, Jacqueline H., Verzosa, Cynthia

This document offers guidance to help the ophthalmologist plan for the safe resumption of elective surgical care. There are 4 sections: (I) COVID-19 Awareness, (II) Preparedness, (III) Patient Issues, and (IV) Delivery of Safe and High-Quality Care. Each section contains key issues to be addressed before elective surgery may be safely reinstated.

Understanding the capabilities of health facilities (e.g., testing, operating rooms) as well as the potential limitations in manpower and supplies will remain important, while keeping an eye out on subsequent waves of COVID-19. **(Author's abstract)**

Keywords: *COVID-19, Elective surgery, Pre-operative testing, Ophthalmic surgery, Medicine*

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0181

COVID-19 Testing Recommendations prior to Elective Ophthalmic Surgeries

Verzosa, Cynthia V. , Santiago, Maria Donna D. , Rondaris, Maria Victoria A. , de Leon, John Mark S. , Anzures, Rachelle G. , Aquino, Jubaida M. , King, Jacqueline H., PAO Committee on Standards

With the resumption of elective surgeries during this COVID-19 pandemic, surgeons and facilities should implement infection prevention and control measures to ensure the safety of patients and health care workers. This advisory highlights the key principles, risk stratification considerations, and recommended approach regarding Covid-19 testing prior to elective ophthalmic surgeries. **(Author's abstract)**

Keywords: *COVID-19, Elective surgery, Pre-operative testing,, Ophthalmic surgery, Medicine*

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0182

COVID-19: UNMASKING DISPARITIES AND INEQUITIES IN HEALTH

Javison, Sherwynn

Health care should be borderless, and people must have liberty and timely access to health services regardless of color and status. Different cultures appear to interconnect the world but threaten conflict because of how public health policies are implemented. Considering the social determinants of health in public health policy is essential to halt the following disparities and inequities in this pandemic: (a) compromised right to education has been linked to poverty and without a regular income, disease conditions aggravate, even worse; (b) due to labor market segregation, people in color were losing jobs at a high rate than whites- these minorities have least to cope on health and economic fall-out of the pandemic; (c) racial residential segregation has forced minorities to live in uncondusive substandard multifamily units; (d) due to food insufficiency related to joblessness, over 21,000 homeless people may need to be hospitalized; (e) Because of the wrong perceptions of the disease, the whites intently discriminate against the East Asian ethnicity for fear of contracting COVID-19; (f) social media has

influenced the development and spread of health-related 'conspiracy' and people became resistant to public health policies; (g) telehealth is advantageous in population with excellent internet service but not for the homeless and those living in depressed areas; (h) urbanization has led to climate change, biodiversity loss, which arises in zoonotic transmission/diseases; (i) pollution was associated with a 15% increase in the COVID-19 death rate in California; and, (j) populations living in coldest areas are at risk of contracting COVID-19 virus. This study unveils racial inequities and disparities in COVID-19. (**Author's abstract**)

Keywords: *COVID-19, Public health, Social determinants, Health disparities, Health inequities, Pandemic, Medicine*

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2020,
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0183

COVID-19 Vaccination: The Greater Manila Experience 2021

Juangco, Jose Ronilo G. , Bool, Richelle Riche S. , Besi±o, Hale Jo-Jariz B. , Binongcal, Mary Anthonette B. , Belleca, Renz Cristoffer S. , Bautista, Ma. Justine Margarette N. , Bautista, Ma. Franzel Loudette H. , Bautista, Jules Maryse G. , Bermejo, Bianca J., Tenorio-Qui±ones, Vinna M

Introduction Almost half of adult Filipinos were unwilling to receive the COVID-19 vaccination in early 2021. This study aimed to describe the COVID-19 vaccination experience in the Greater Manila Area.

Methods An analytical cross-sectional study design was done where Filipinos aged 18-60 years old residing in the Greater Manila Area answered an online survey. Fisher's exact test was used to compute p-values for the association between participants' willingness or refusal to get vaccinated and their sociodemographic and clinical characteristics.

Results Among 1,248 respondents, 97.92% were willing to get vaccinated against COVID-19. The majority who refused strongly agreed that the vaccine could cause serious side effects (46.2%). Being a college graduate (OR = 3.03, p = 0.006) and high income (OR = 5.06, p = 0.003) had a statistically significant positive association with willingness to get vaccinated.

Conclusion There are more individuals willing to get vaccinated and there is a statistically significant association between educational attainment and monthly income with vaccine willingness or refusal. (**Author's abstract**)

Keywords: *COVID-19 vaccination, Vaccine refusal, Vaccine willingness, Medicine*

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NP

0184

The Creation and Maintenance of a Hospital-Based Cancer Registry System

Viray, Ethel Dominique E. , Tiangco, Beatrice J., Parma,

Introduction: Cancer registries contain information essential to any rational program of evidence-based cancer control, including cancer epidemiology and outcomes, and can be site-specific, hospital-based, or population-based. The creation of a national population-based cancer registry and hospital-based cancer registries was

mandated in the National Cancer Control Act of 2019. This paper reports on the creation and maintenance of the Cancer CARE Registry and Research Philippines (CARE PH) app, the country's first hospital-based cancer registry system, and its future directions in registry and research.

Methods: A cancer registry in the form of a web-based application was developed through the collaboration between a clinician and a health information technology specialist. This registry was designed to follow the cancer patient's journey from diagnosis to staging to treatment and cure, relapse, or progression into death. Patient information is collected in a structured and secure process from designated catchment areas in each hospital by trained tumor registrars, with the main catchment area being the hospital's Surgical Pathology department. The CARE PH application is given to member hospitals for free through the support of grants given to the CARE PH Foundation, Inc.

Results and discussion: Today, 31 member hospitals in the CARE PH system have recorded a collective total of 9,880 new cancer patients for the year 2020. The most common cancer types recorded in CARE PH for 2020 include breast, colorectal, cervical, and head and neck cancers. In addition, the registry captures a myriad of information that can potentially answer questions relevant to the individual cancer patient and clinicians, and hospital administrators.

Conclusion: HBCRs are an indispensable part of effective cancer control programs as they facilitate making evidence-based decisions that would result in better healthcare for Filipino cancer patients. (Author's abstract)

Keywords: *Philippines, Cancer, Cancer registry, Epidemiology, Medicine*

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0185

Cross-cultural Visayan Translation and Validation of Beck's Depression Inventory Scale Among Ambulatory Maintenance Hemodialysis at a Tertiary Training Hospital in Southern Mindanao, Philippines (BDI-VISAYAN)

Oco, Marius , Bersales-Masendo, Arnelia , Dimaano, Exequiel P., Pingoy,

Research Question: Is Beck's Depression Inventory Scale – Visayan (BDI-Visayan) an accurate and reliable depression screening tool among ambulatory hemodialysis patients validated against Semi-structured Clinical Interview for Depression for DSM IV?

Background: Depressed dialysis patients are twice likely to die or require hospitalization. Unfortunately, there is a lack of a depression screening tool validated for Filipino patients.

Objectives: Development and validation of Beck's Depression Inventory Scale -Visayan version as a depression screening tool for ambulatory maintenance hemodialysis Filipino patients.

General Study Design: This is a cross-cultural instrument translation and cross-sectional validation study.

Participants: Using non-probability convenient sampling, patients >18years old with eGFR <60mL/min/1.73m² based on CKD-Epi equation and on hemodialysis for ≥3 months were enrolled. Patients with hearing, speech or cognitive deficits, acute kidney injury, dementia, delirium or psychiatric disorders were excluded.

Interventions: BDI Visayan was developed using combined translation technique with depression defined as a score of ≥14.

Outcome measures: Structured Clinical Interview for Depression (SCID) for DSM IV was used as the gold standard.

Analysis: Sensitivity, specificity, predictive values, and likelihood ratios of BDI-Visayan were compared to SCID. Cronbach's alpha, Receiver Operator Characteristics and Area Under the Curve were used to determine reliability, optimal cut-off score, and overall accuracy, respectively.

Results: BDI-Visayan has high reliability with Cronbach's alpha of 0.904 and an accuracy of 0.80 AUC. The optimal cut-off for BDI-Visayan for major depressive disorder for ambulatory hemodialysis patients is 20 with 75% sensitivity, 55% specificity, 22% positive predictive value, 93% negative predictive value, 3.92 positive likelihood ratio, and 0.31 negative likelihood ratio.

Conclusions: BDI Visayan is a reliable and accurate depression screening tool for ambulatory maintenance hemodialysis Filipino patients with higher specificity at an optimum cut-off score of 20. **(Author's abstract)**

Keywords: *Structured Clinical Interview for Depression (SCID), Chronic kidney disease (CKD), Hemodialysis, Medicine*

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0186

A cross-sectional study of the association of social media use during the pandemic to the psychological well-being status of medical students in a private tertiary institution

Bagain, Carolynn Pia J. , Nailes, Jennifer M. , Manlosa, Ma. Bernadette R. , Mangoroban, Athena Louise S. , Manaois, Martin Jerard S. , Malapad, Ella Alessandra L. , Malaluan, Tyrone L. , Lacerna, John Philip L. , Lacanlale, Shaira

Introduction Lockdowns and quarantine measures during the pandemic have led to increased media consumption among students worldwide. This study aimed to determine the association between the status of the psychological well-being of medical students in a private tertiary institution and social media use during the pandemic.

Methods This is cross-sectional analytical study which included medical students in a private tertiary institution. SONTUS was used to measure social media usage, while Ryff's Scales of Psychological WellBeing was used to assess the psychological well-being. PRR and Chi-square test were used for data analysis.

Results There were 317 respondents in the study. Based on the results of SONTUS, there are 114 respondents who have high usage. For the Ryff's scale, there were 76 respondents who have low wellbeing scores. The computed Pearson Chi-square has an associated probability (p-value) of 0.855 which is more than the set significance level of 0.05. For the PRR, the computed value was 1.04.

Conclusion There was no association found between the psychological well-being status of medical students in a private tertiary institution and social media use during the pandemic. **(Author's abstract)**

Keywords: *Social media use, Well-being, Pandemic, Medicine*

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0187

A cross-sectional study on the association between social media addiction, body image, and social comparison among young adult Filipino women aged 18-25 years old in Metro Manila

Garcia, Jr., Ricardo C. , Garcia, Maria Patricia Z. , Garcia, Jewel Ann N. , Garcia, Eunice Joy C. , Garcia, Diana Mae T. , Garcia, Aldre Lorenzo R. , Gamboa, Rochelle Ann P. , Gamboa, Pauline Angela M. , Gamboa, Maria Katrina P. , Gamboa, Alissa Jane R., Gaviola, Kashmeer Georgia M. , Calma-Balderrama, Norieta , Juangco, Jose Ronil

Introduction: The Philippines tops globally for time spent on social media. This study aimed to explore the association between social media addiction, body image, and social comparison among young adult Filipino women aged 18-25 years old in Metro Manila.

Methods: The Social Media Addiction Scale (SMAS), Body Image Questionnaire (BIQ), and Iowa-Netherlands Comparison Orientation Measure (INCOM) were used to assess social media addiction, body image, and social comparison, respectively. PRR (CI 95%) assessed the association between SMA and BI, and SMA and SC.

Results: Majority of participants had social media addiction (91.11%), while most reported a neutral body image (87.64%). Additionally, more than half of the participants exhibited a high tendency towards social comparison (53.15%). The study found a positive association between social media addiction and negative body image, as well as a significant positive association between social media addiction and social comparison. Obesity showed a significant positive association with negative body image perception, while being overweight was significantly associated with a lower likelihood of having a positive body image. Spending at least 4 hours per day on social media was significantly associated with a higher tendency towards social comparison.

Conclusion: These findings suggest the presence of social media addiction among young adult Filipino women and its association with body image and social comparison. Awareness of these associations can contribute to the development of targeted interventions and educational programs to promote healthier social media use and positive body image among young adults. **(Author's abstract)**

Keywords: *Social media addiction, Body image, Social comparison, Medicine*

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0188

Cross-Sectional Study on the Profiles and the Degree of Burnout among Resident Physicians in Private Tertiary Hospitals in Bacolod City: Proposed Life-Skills Program

Baker, Glenda Leslie T. , Espinosa, Wend

Research question: What are the profiles and the degree of burnout among resident physicians in private tertiary hospitals in Bacolod City?

Background: Exhaustion from work may result into negative effects not only to the medical staff and patients. Systematic reviews revealed an association in physician burnout and suboptimal quality of care, patient safety and patient satisfaction. However, the prevalence of burnout among resident physicians in Bacolod City has not been established.

Objectives: The study aimed to determine the profiles and the degree of burnout among resident physicians in private tertiary hospitals in Bacolod City.

Study design: Cross-sectional survey

Participants: We invited all resident physicians in private hospitals in Bacolod City.

Outcome measure: This study used the 22-item Maslach Burnout Inventory-Human Services Survey.

Analysis: IBM SPSS version 22 was used in the data analysis. Mean and frequency distribution were utilized. Analysis of percentage of distribution was used to determine their difference.

Results: From December 2019 to January 2020, ninety-three resident physicians consented to participate in the study. The majority of the participants were young adults, females and single. Only a minority of the residents exercised regularly. The majority were practicing their religion. Most of the residents are in their early years of training. Residents in Internal Medicine comprised the majority of the respondents. Among the respondents, in the Emotional Exhaustion (EE) domain: 24.7% were low, 37.6% were moderate, and 37.6% were high. While in the Depersonalization (DP) domain: 43% were low, 34.4% were moderate, and 22.6% were high. Lastly, in the Personal Achievement (PA) domain: 33.3% were low, 35.5% were moderate, and 31.2% were high. High burnout was present in 22.6% among the respondents.

Conclusions: High burn out was seen among young adults, male, single, and more senior resident physicians. Furthermore, residents who exercise regularly and practice their religion have lower burnout. And Internal Medicine residents were seen to have high burnout compared to other training specialization. Organizational- and physician-directed interventions have an essential role in preventing and reducing burnout in training institutions. **(Author's abstract)**

Keywords: Resident physicians, Burnout, Stress, Private hospitals, Medicine

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0189

A cross-sectional study on the risk factors and prevalence of common warts *Angeles, Camille B. , Naagas, Vanessa S. , Soriano-Perez, Rav*

Introduction Common warts are frequent benign cutaneous and mucosal infections. However, recommendations from previous studies have focused on personal and public factors to prevent warts and reduce its transmission. This study aimed to determine the prevalence of common warts and its relation to individual, family, school, public, and occupational factors.

Methods This is a cross-sectional study wherein the cutaneous surfaces (except the mucosa and genitalia) of residents of Barangay Doña Imelda, Quezon City were examined for the presence of warts. Information on individual, family, school, public, and occupational risk factors was obtained from the respondents themselves, parents or guardian using a data extraction sheet. A PRR of > 1.0 was interpreted as a positive association. Chi-square and Fisher's exact tests were used to test for significance. A p-value of < 0.05 was considered significant.

Results The prevalence of common warts among 315 residents was 7.6 %. The presence of family (PRR = 6.41, 1.91), school (PRR = 1.68), and occupational (PRR = 1.50) factors increased the risk of developing warts. In contrast, a personal history of warts and public factors were not associated with the development of warts.

Conclusion The prevalence of common warts is 7.6%, compatible with the results of previous studies. Having a family member with warts, large family size (more than five family members), having at least one closest school friend with warts, and occupation (fish or meat or poultry vendor) increase the risk of developing warts. **(Author's abstract)**

Keywords: Common warts, *Verruca vulgaris*, Risk factors, Prevalence, Cross-sectional study, Medicine

CULTIVATING CARING BEHAVIORS IN NURSING ACADEMIA DURING THE COVID-19 PANDEMIC

Torres, Gian Carlo S. , Tabudlo, Jer

The imposition of community quarantine due to COVID-19 transformed nursing campuses from traditional teaching and learning to flexible learning and distance teaching. The shift in the approach is a big challenge because teaching caring behaviors often require face-to-face patient interactions. This research note presents teaching and learning strategies in cultivating caring behaviors in nursing academia during the COVID-19 pandemic. Journals articles were read to identify teaching and learning strategies in cultivating caring behaviors. Strategies identified include simulation-based learning, advocacy, professional mentoring, and service-learning. Nursing is caring; despite the limitations posed by this pandemic, there are available teaching and learning strategies to cultivate caring behaviors. Considering the current context, flexibility, sensibility, and equity in teaching and learning should be of prime concern. **(Author's abstract)**

Keywords: *Caring, Enculturation, Nursing education, Simulation, Mentoring, Advocacy, COVID-19, Medicine*

Cultural Adaptation and Validation of The CaSPUN (Cancer Survivors' Partners Unmet Needs) Measure Among Partners of Gynecological Cancers

Besral , Afiyanti, Yati , Haryani, H

Purpose: The partners of cancer patients commonly provide the needs of cancer patients along cancer trajectory except for patients with gynecological cancer. In developing countries including Indonesia, who have strong family bonding, the family of cancer patients are involved more intensely in providing cancer care. This situation may bring the cancer patients' families experience the burden and decrease their quality of life. Therefore, assessing the family's supportive needs are as important as patient supportive needs. There are more gynecological cancer survivors in Indonesia; however, little is recognized about partners' supportive needs due to lack of validated assessment tools to measure it. This study aimed to translate, culturally adapted and test the validity and reliability of the CaSPUN questionnaire among partner of Indonesia gynecological cancer patients.

Design: First, the procedures of forward-backward translation and modification of the CaSPUN were conducted to ensure cultural adaptation. Second, using convenience sampling with 295 partners of gynecological cancer patients, we tested the construct validity and internal consistency of the CaSPUN-Indonesia Version (CaSPUN-I). We conducted Exploratory Factor Analysis to explore the factor structure of CaSPUN-I and Cronbach Alpha to confirm internal consistency reliability.

Results: The CaSPUN were modified to make more understandable and culturally appropriate in the Indonesian context. Five factors were extracted from EFA in the CaSPUN-I with factor loadings of items between 0.41 and 0.85. The Cronbach's alpha coefficient for the CaSPUN-I ranged from 0.96-0.97.

Conclusion: The CaSPUN Indonesia version presents acceptable validity and reliability for assessing supportive care needs among families of Indonesian gynecological cancer patients. The CaSPUN-I can be used by healthcare providers to assess and design the supportive care program for family of Indonesia gynecological cancer patients. **(Author's abstract)**

Keywords: *CaSPUN, Cancer survivor, Cross-cultural adaption, Indonesia, Needs assessment, Medicine*

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0192

Culturally Competent Interprofessional Pediatric Care: A Concept Analysis

Antwi, Fiskvik Bo

The American Academy of Pediatrics describes culturally effective care in a policy statement as the provision of care in the sense of appropriate provider awareness, understanding, and appreciation of cultural differences that contribute to optimal health outcomes. Therefore, clinicians must develop cultural competence to enhance patients' care satisfaction and outcome. Although culturally effective pediatric care has been discussed in the literature, there remains a gap in the process on how an interprofessional health care team can provide culturally congruent care in a pediatric setting. Being part of an interprofessional pediatric care team, nurses hold the responsibility of communication and coordination to ensure culturally competent care by every member of the health care team. Hence, this paper adapts Walker and Avant's (2011) concept analysis process in which the theory, culturally competent pediatric care would be derived. The concept analysis methodology from Walker and Avant (2011) would define the concept, attributes, antecedents, consequences, and cases that would describe culturally competent pediatric care. Cultural diversity and family dynamics are ever-changing. The concept analysis proposes a framework for culturally competent interprofessional care in which culturally competent care is an ongoing team approach. Ultimately, the concept concluded that to provide culturally competent care in pediatric practice, there should be a framework in which the interprofessional team follows, using the principle of cultural humility and illustrating cross-cultural communication to provide culturally appropriate care. **(Author's abstract)**

Keywords: *Culturally competent care, Pediatric practice, Interprofessional health care team, Medicine*

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0193

The Daily, Monthly, and Annual Cost of Glaucoma Therapy Using Ocular Hypotensive Eye Drops in the Philippines Based on a Quantitative Method

Floracruz, II, Nilo Vincent DG., Azarcon, Corr

Objective: This study aimed to calculate and compare the costs of different brands of ocular hypotensive eye drops available in the Philippines.

Methods: This was a single-center research conducted at a local laboratory. Triplicate samples of 21 different brands of locally-available ocular hypotensive drops were tested. The mass of ten drops, total usable mass, number of drops per bottle, and mass of 200- μ L aliquots were measured for each sample. These were used to calculate for

the total usable bottle volume, drop volume, and number of drops per milliliter of each sample. Lastly, the daily, monthly, and annual costs were computed and compared.

Results: Available brands of β -blockers were the most affordable options for topical glaucoma therapy, with costs ranging from Php1,838 to 8,472 per year. Innovator brands of α -agonists and carbonic anhydrase inhibitors were the most expensive, with annual costs ranging from Php7,641 to 24,295 and Php7,361 to 25,327, respectively. Fixed-combination preparations, with yearly costs ranging from Php4,307 to 22,200, were generally more cost-effective than individual preparations. The cost of topical anti-glaucoma therapy can amount up to 3.3 to 66.9% of a minimum-wage earner's annual income depending on the number and combination of drugs being used.

Conclusions: The price range of ocular hypotensive eye drops available in the Philippines is wide. Cost of therapy is an important consideration for patients who acquire medications through out-of-pocket expenditure. Optimization of bottle designs and volumes is crucial to maximize the cost-effectiveness of eye drop solutions. Information on the cost of therapy should be available to both patients and physicians. **(Author's abstract)**

Keywords: *Ocular hypotensive eye s, Anti-glaucoma eye s, Glaucoma therapy, Cost analysis, Quantitative method, Densitometric method, Medicine*

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0194

Definition and Conceptualization of Collaboration in Drug Rehabilitation: Systematic Synthesis and Comparison Using a Scoping Review Approach

Li, Chi Mei Jessica , Antonio, Carl Abela

Objective. Although interagency collaboration in drug treatment and rehabilitation has been substantially studied, a lack of consensus on the nomenclature and definition of collaboration remains an unresolved issue in public health policy and practice. To facilitate further consensus, this review analyses previously used definition, conceptualization, and theorization on interagency collaboration in the field of drug rehabilitation.

Methods. We conducted evidence synthesis using a scoping review approach. This review is based on searches using the MEDLINE, CINAHL Complete, Embase, and PsychINFO databases and used the protocol proposed by Arksey and O'Malley.

Results. A total of 6,259 papers were retrieved from database and citation searches, 33 of which were eligible for inclusion in the analysis after screening and evaluation. Although the definitions varied, the common elements included (a) the presence of at least two entities, which were either services, programs or organizations; (b) these entities collaborated or shared resources; (c) partnership went through a development process; and (d) the intent of collaboration was to achieve a common purpose. There were five means of conceptualizing collaboration: (a) degrees, or level of intensity and formality; (b) elements, or the constitutive structure and activities; (c) stages, or the development of partnership over time; (d) levels, or the focus of the collaborative; and (e) type, or a distinction between collaboration on in policy and practice.

Conclusion. Scholarship in this field can benefit from studies that conceptualize collaboration not only cross-sectionally through the description of degrees, elements, levels, and type, but also by considering the stages dimension of collaboration (i.e., evolution of collaboration initiative over time). Countries or jurisdictions may need to formalize a term and definition for collaboration as it applies to initiatives within their territories. **(Author's abstract)**

Keywords: *Intersectoral collaboration, Substance-related disorders/therapy, Substance abuse treatment centres, Review, Medicine*

Degree Of Burnout and Its Association with Depression, Anxiety and Stress Among Health Care Workers in a Tertiary Hospital in Mandaue City During The COVID-19 Pandemic

Robles, Jeremyjones F. , Baring, Neil Christian D., Ezpeleta, Jr., Raul

Background: On top of adjusting to the societal shifts and emotional stressors faced by everyone, health care workers are also confronted by stressors such as an increased risk of exposure, extreme workloads, moral dilemmas, and a dynamic practice environment that differs greatly from what was familiar. These can lead to burnout, a state of physical, emotional, and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding.

General Objective: This is a descriptive cross-sectional study that intends to measure the degree of burnout and determine its association with depression, anxiety, and stress among health care workers in Chong Hua Hospital Mandaue during the COVID-19 pandemic.

Methodology: The data collection process entailed the researchers' physical and online administration of a questionnaire which included the health care workers' socio-demographic data and questions lifted from both the Copenhagen Burnout Inventory (CBI) and Depression, Anxiety, Stress Scales (DASS) 42-item. Also included was an open-ended questionnaire to enumerate outbreak-specific contributors to burnout.

Results: 222 health care workers were surveyed. Almost half (98, 44.2%) of the health care workers registered moderate to high overall burnout scores on the CBI but none of them had severe burnout. The degree of burnout was determined to be moderately associated with all three negative emotional states using the Cramer's V coefficient: depression ($V = .448$), anxiety ($V = .378$), and stress ($V = .415$). The foremost factor identified to be a contributor to burnout was the high workload which was exacerbated by the onset of the pandemic.

Conclusion: The study showed that burnout and the negative psychological states of depression, anxiety, and stress, are prevalent in health care providers with results comparable to other global studies. The contributors to burnout identified by the respondents were either present pre-pandemic but were aggravated by it and those which were outbreak-specific. **(Author's abstract)**

Keywords: *Burnout, COVID-19, Depression, Anxiety, Stress, Medicine*

Descemet's Membrane Detachment in a Corneal Graft After Removal of a Baerveldt Shunt Intraluminal Stent

Concepcion, Patricia Anne C. , Lim Bon Siong, Ruben , Covar, Rainier Victor A. , Claudio, Karlo Mar

Objective: We reported a case of Descemet's membrane detachment (DMD) following ripcord removal of a Baerveldt shunt in a post-corneal transplant eye, and the interventions done.

Method: This is a case report.

Results: A 65-year-old male with multiple surgeries (phacoemulsification, two corneal transplants, and Baerveldt shunt implantation) in the right eye developed increased intraocular pressures, prompting removal of the intraluminal stent (ripcord) of the shunt. This was complicated by hypotony and DMD. Ripcord reinsertion and viscoelastic injection were performed to reattach the Descemet's membrane (DM) but failed. 0.1mL of 14% perfluoropropane (C3F8) gas was injected into the anterior chamber that successfully reattached the DM with return to pre-operative best-corrected visual acuity after 1 week.

Conclusion: Injection of an expansive gas (C3F8) was effective in repairing a corneal graft DMD in an eye with a Baerveldt shunt. (**Author's abstract**)

Keywords: *Descemet's membrane detachment, Corneal transplant, Baerveldt, Medicine*

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0197

A descriptive cross-sectional study on the motivation of work-from-home office workers in the National Capital Region

Tumabini, Christine Joyce J. , Tuazon, Albertito Luis V. , Trinchera, Katrina Isabel G. , Tria, Sofia Kairie T. , Tria, Marian Angelica C. , San Juan, Jennifer Marie L. , Trovela, Clark Anthony, Adversario, Maria Peñafrañcia L. , Sta. Ana, Maria Lourde

Introduction The landscape of work has changed since the start of the COVID-19 pandemic as more companies shifted from face-to-face to the work-from-home (WFH) setup. This change has affected several aspects of human life especially the motivation to WFH. The study aimed to determine the motivation of WFH among office workers in the National Capital Region (NCR) from March 2020 to February 2022.

Methods Using a descriptive cross-sectional study design, an online survey of WFH office workers around the NCR, Philippines was conducted. A 26-item questionnaire on motivation covering dimensions of availability (flexibility), safety (work-life balance), and meaningfulness (work performance) was used. Data was analyzed using SPSS version 24.

Results A total of 252 respondents were included in the study, with a majority identifying as females aged 21 to 30, never married, and college graduates. Additionally, respondents reported having one to five years of work experience and were employed in professional/technical/managerial fields. Regarding the impact of remote work, the findings indicated that most individuals who worked from home (WFH) felt motivated by this setup due to its positive effects on availability, time and cost savings from reduced commuting, and the flexibility it provided for managing their schedules according to personal preferences. Furthermore, in terms of safety and conducive work environment, WFH office workers expressed agreement that the remote work setup contributed to a favorable work environment, leading to increased job satisfaction. This setup allowed them to effectively balance work responsibilities with personal and family commitments. The study also revealed that WFH office workers perceived a sense of meaningfulness in their work, as they felt trusted and valued by their employers. This sentiment contributed to their overall well-being, both physically and mentally

Conclusion Work-from-home office workers are generally always motivated in terms of availability (flexibility), safety (work-life balance) and meaningfulness (work performance). (**Author's abstract**)

Keywords: *Social media use, Well-being, Pandemic, Medicine*

Designing a Conceptual Framework to Align Learning Objectives to the Interprofessional Education Collaborative Core Competencies: A Narrative Review

Belleza, Norman Cadiz, Johnson, Maur

Introduction. Early placement of interprofessional education (IPE) in academic curricula may foster foundational learning to shape student attitudes, knowledge, and skills and better prepare practice-ready clinicians for future team-based collaboration. The purpose of this narrative review was to investigate and analyze the current use of IPE in OT and PT higher education.

Methods. Three databases, Academic Search Complete, Cochrane Database of Systematic Reviews, and ERIC, were searched from 2017 to 2022. Inclusion criteria were articles with full text availability, published within the 5-year search time range from the time of the narrative review process, peer reviewed studies, original research, meta-analysis studies, case studies, and review articles. Duplicates were removed, and studies were excluded if related to only clinical or practice-based healthcare delivery, community health service-learning, virtual or telehealth platforms, not applicable to the disciplines of OT and PT, or not available in English.

Results. After filtering and screening articles yielded from the literature review, a total of studies (n = 76) provided considerable evidence for contributing to best-practice guidelines in aligning IPE learning with student outcomes and the Interprofessional Education Collaborative Core Competencies. Substantial evidence was found, which resulted in the creation of a conceptual framework to advance IPE health science education and to meet discipline-specific IPE accreditation standards for OT and PT education. The resultant proposed IPE Conceptual Framework provides alignment of course learning objectives, accreditation standards, institutional and programmatic learning outcomes, and IPEC Core Competencies to create authentic IPE learning activities.

Discussion. This study provides a current review for IPE in OT and PT education in the United States and can have application abroad. The findings guided development of a conceptual framework for alignment of IPEC Core Competencies, curricular outcomes, and accreditation standards. Followup studies are recommended to validate the utilization of the proposed framework, and then subsequent research inquiry to further assess IPE effectiveness. (Author's abstract)

Keywords: *Curriculum development, Healthcare academia, Interprofessional education, Occupational therapy, Physical therapy, Medicine*

Detection of Neutralizing Antibodies Among Health Care Workers and Staff Fully-vaccinated Against COVID-19 in a Baguio City Tertiary Hospital: A Cross-Sectional Study

Rillera-Posadas, Karla Rhea, Orallo-Fajardo, Rhoda Lynn, Warren-Baluyut, Hope Co

Background. Coronavirus disease 2019, otherwise known as COVID-19 is caused by the novel coronavirus. The WHO stated that as of April 24, 2020, no study has evaluated if the antibodies against COVID-19 confer immunity. The aim therefore of this research is to determine the presence of neutralizing antibodies among fully vaccinated Health Care workers and staff of Notre Dame de Chartres Hospital

Methods. This study is a single-center, cross-sectional study conducted at Notre Dame de Chartres Hospital in Baguio City. This study was designed to determine the presence of neutralizing antibodies 6 months after the 2nd dose of COVID-19 vaccine, either with Sinovac (CoronaVac®), an inactivated virus, or Oxford AstraZeneca, a non-replicating viral vector. The study was approved by the Ethics Review Board of the Baguio General Hospital Medical Center. A total of 206 participants enrolled voluntarily in the study. Descriptive statistics such as frequency and percentage were used to determine the baseline characteristics of the research participants. The mean amounts of antibodies after vaccination against COVID-19 were determined. Independent-sample t-test was utilized to determine if there was a significant difference in antibody production when comparing the two brands of vaccine, according to sex, employee status, presence of at least one comorbidity, and history of COVID-19 vaccination. One-way analysis of variance (ANOVA) was used for the variable age. All statistical tests were conducted at $p < 0.05$ level of significance. Computations were done using SPSS version 22.0.

Results. A total of 236 healthcare workers and staff of Notre Dame de Chartres Hospital were included in the study. Among the study participants given either Sinovac or AstraZeneca, 52.97% belong to the 20-30 years old age group. Most of them were females (69.92%). For employment status, healthcare workers comprised the majority of the study population at 71.61% while the rest (28.36%) were hospital staff. Most did not have any comorbidities, while 26.27% reported having comorbidities, with hypertension and asthma identified as the predominant diseases at 9.75% and 9.32%, respectively; followed by allergic rhinitis (5.32%) and diabetes mellitus (2.97%). Among the participants, 74.6% were never diagnosed with COVID-19, while 25.4% reported to have been infected, with 16.5% having only mild symptoms. Most of the study participants (67.4%) were inoculated with Sinovac® while the rest (32.6%) received AstraZeneca.

Conclusion. There was no significant difference in the mean amount of antibodies when grouped according to each of the following variables: age, sex, employee status, and comorbidities. These results apply to both SINOVA and AstraZeneca groups. There was a significantly higher mean amount of antibodies in those who had previously contracted COVID-19 than in those who never had a previous infection. On the other hand, comparing the mean amount of antibodies between the two brands of vaccines, SinovacTM and AstraZenecaTM, those who were vaccinated with AstraZenecaTM developed higher amounts of antibodies than those who were vaccinated with SinovacTM. **(Author's abstract)**

Keywords: Neutralizing antibodies, COVID-19 vaccine, Healthcare workers, Medicine

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0200

Determination of Iridotrabeular Contact Using the Anterior Segment Optical Coherence Tomography in Lights-on and Lights-off Conditions

Gomez, James Paul S. , Leuenberger, Edg

Objective: To determine the presence of iridotrabecular contact (ITC) and compare the changes in anterior chamber angle (ACA) measurements in room lights-on and lights-off conditions using the anterior segment optical coherence tomography (AS-OCT) in eyes diagnosed as primary angle closure suspects (PACS) by gonioscopy.

Methods: This is a retrospective review of 144 eyes of 79 patients (70 females, 9 males) with PACS. All eyes were imaged using the Visante® time-domain AS-OCT (Carl Zeiss Meditec, Dublin, CA). Each eye was imaged twice; the first scan was done with the room lights on followed by a second scan done after turning the room lights off for 2 minutes. The principal outcome measure was the presence of ITC in either lighting condition. Other

angle metrics that were assessed included anterior chamber depth (ACD), angle opening distance (AOD), trabecular-iris space area (TISA), and scleral spur angle (SSA). Presence of ITC and differences in the angle metrics between the 2 lighting conditions were then analyzed using the t-tests and logistic regression.

Results: ITC was present in 36.8% (53) of the study eyes. Twenty percent (20%) of the study eyes (29) did not initially exhibit ITC in the lights-on phase but developed ITC when imaged with the lights off. Persistent ITC was seen in 16.6% (24 eyes) in both lighting conditions. ITC occurred in 52.2% of the eyes with ACD less than 2.18 mm. Logistic regression showed that there is a 91% decrease in the odds of having ITC in lights-off condition for every millimeter of ACD increase. Age was not associated with the occurrence of ITC in the lights-off condition. All other analyzed parameters decreased significantly in the lights-off condition ($p < 0.05$) except for the ACD, nasal TISA-500, and temporal SSA.

Conclusions: The presence of ITC is a well-established characteristic of eyes with angle closure. In eyes with PACS, detection of ITC may be enhanced with AS-OCT imaging in lights-off condition. (**Author's abstract**)

Keywords: *Medicine, Iridotrabecular contact, AS-OCT, Angle metrics*

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0201

Determination of the efficacy of okra seed powder in aqueous solution as a glucose lowering agent compared to acarbose in STZ diabetic rats

Solar, Venus A. , Nales, Jennifer M. , Rondina, Melissa Marie R. , Rabe, Milagros B., Adversario, Maria Peñafrañcia L. , Chua, Joseph C

Introduction Okra is reported to have anti-diabetic effects, but the literature shows conflicting results. The experiment aimed to determine the efficacy of three doses of okra seed powder suspension as a glucose lowering agent on streptozotocin-induced diabetic rats and its cellular effects on the liver and pancreas.

Methods Twenty-five Sprague Dawley rats that were given streptozotocin 60 mg/kg intraperitoneally were randomly allocated to one of five treatment groups: okra seed powder at 100 mg/kg, 150 mg/kg and 200mg/kg, acarbose (positive control) and vehicle only (negative control). The treatments were given as a 1.5 mL oral gavage daily for 21 days. Significant differences in blood glucose were determined between treatment groups in terms of relative change from baseline, using One-Way ANOVA with Dunnett's method with acarbose as the referent group. Repeated measures ANOVA was used to analyze the blood glucose levels across the time point collections (baseline, T1 and T2). Histopathologic changes on the liver and pancreas were described using counts and proportions.

Results Mean blood glucose values increased from baseline to T2 in all treatment groups. Increasing trend was observed only up to T1 in the 150 mg/kg and the 200 mg/kg okra seed treatment groups. Comparing okra treatment groups to acarbose, the percentage increase of mean blood glucose from baseline to T2 was lowest in the 200 mg/kg okra group ($p = 0.040$). The okra-treated rats had no fatty change and a dose-dependent decrease in cellular degeneration in the liver and none for the 200 mg/kg treatment group.

Conclusion The 200 mg/kg okra suspension has a potential lowering effect on blood glucose and a hepatoprotective effect. A longer period of observation with higher doses of okra suspension is recommended to study these effects further. (**Author's abstract**)

Keywords: *Okra, Diabetes mellitus, STZ-diabetic rat, Medicine*

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Developing a Professional Identity in Nursing through Reflection *Co-Enarsico, Charma*

Professional identity is the nurse's collection of beliefs about what it “means to be” and to “act like” a nurse. This represents his/her “philosophy of nursing” and it has a direct influence on how actual “roles and responsibilities” are followed. In other words, professional identity is the “foundational reference” in the nurse's cognitive process to which decisions are being made. Moreover, these are the values and beliefs held by the nurse as guiding principles in thinking, behaving, acting, communicating, and interacting with patients, the patient's family, and other members of the healthcare team.

As a practical science, nursing education has introduced the importance of reflective learning in the clinical setting when providing care to patients and in building nurse-patient relationships. This means that there is a developing awareness of assisting, encouraging, and teaching both students and professional nurses to become thoughtful individuals, capable of critical thinking and analogy to come up with innovative ideas. Reflection in this mode of instruction is considered as a tool for the analysis of nursing practice nurturing both the understanding of professional nursing and the building of important thoughtful approaches essential for providing nursing care in multifaceted and dynamic working conditions. As a result, reflection, as an instructional method, has been included in many nursing curricula.

However, the concept of reflection within the context of developing a professional identity has scarcely been defined to adequately identify research and educational indicators. This concept analysis aims to describe attributes, antecedents, and consequences of reflection in the development of professional identity in nursing and to provide clear evidence for nursing educators/faculty that support the systematic development of professional nurses as they advance in practice from the undergraduate to the graduate programs. **(Author's abstract)**

Keywords: *Reflection, Professional Identity, Professional Nursing, Medicine*

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Development and Effect of the Online HIV Prevention and Care Training (HPCT) Program for Student Nurses *Aranil-Palencia, Conchita, de Leon, Rose Zuzette M., De Torres, Ryan Q., Adajar, Gracielle Rut*

Student nurses must be competently prepared to address the rising human immunodeficiency virus (HIV) epidemic in the Philippines. This article presents the development and effect of the online HIV Prevention and Care Training (HPCT) program for student nurses. The Iowa Model-Revised guided the development of the program. Literature review, student and faculty engagements, advocate participation, resources and protocol assessment, and pre-HPCT survey analysis were systematically performed to determine the contents and delivery of the program. The participants were 2nd and 3rd year level student nurses who were asked to answer the pre- and post-HPCT online surveys containing sociodemographic, HIV knowledge, attitudes, and perceived practices, and program evaluation questionnaires. Descriptive and inferential statistics were performed using SPSS version 23. Student nurses in the post-HPCT survey obtained significantly higher HIV knowledge scale mean scores (mean=18.22, SD=4.138) than those in the pre-HPCT survey (mean=15.01, SD=4.069) (p=.000). Pre- to

post-HPCT survey revealed significant decreases in the proportions of student nurses who agreed on the following: HIV-positive patients should not be put in rooms with other patients when admitted to hospital (44.3%, 31.6%; $p=.004$); the need to worry about putting family and friends at risk of contracting the disease when caring for a person with HIV/AIDS (39.7%, 26.4%; $p=.002$); and healthcare workers are worried of getting HIV/AIDS from caring for a person with HIV/AIDS in their work environment (47.2%, 37.5%; $p=.011$). Significantly, more student nurses in the post-HPCT survey agreed in all the items of the HIV practice scale than those in the pre-HPCT survey. The online HPCT program was acceptable with beneficial effects on student nurses' HIV knowledge, attitudes, and perceived practices. There is a need to highlight basic HIV concepts and integrate HIV developments in the education of student nurses. **(Author's abstract)**

Keywords: Evidence-based nursing, HIV, Program development, Student nurses, Online learning, Medicine

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0204

Diabetes Knowledge Among Patients with Type 2 Diabetes at the University of Santo Tomas Hospital Using the Filipino Version of Michigan Diabetes Knowledge Test (Filipino-DKT)

Gomez, Maria Honolina S. , Gomez, Ma. Felisse Car

Background: A well-informed patient with Type 2 diabetes may be more compliant with treatment. This study aims to evaluate the diabetes-related knowledge and socio-demographic determinants of patients seen at University of Santo Tomas Hospital through a translated and validated Filipino-DKT questionnaire.

Methods: Standard translation procedure was used to produce the Filipino version of the DKT2. A convenience sample of 112 outpatients with Type 2 diabetes was identified for six months at the University of Santo Tomas Hospital, Philippines. All data were collected using the Filipino-DKT and a demographic questionnaire.

Results: The Filipino-DKT demonstrated an acceptable Cronbach's alpha of 0.70 and an acceptable average inter-item correlation of 0.40 ($p<0.001$). The test-retest reliability was excellent, with a Pearson coefficient r of 1.00 ($p<0.001$). Our study demonstrated that of the 112 patients with diabetes who answered the general knowledge test, the majority had average knowledge of 78.64%, while 16.07% had poor knowledge. A total of 55 participants on insulin answered the second part of Filipino-DKT that measures insulin knowledge. Surprisingly, 56% of the subjects on insulin had poor knowledge, and only 7% had good knowledge. Results showed that the majority (56%) had poor knowledge. Participants who reported poor control of their diabetes ($HbA1c >7\%$) also reported lower levels of knowledge about diabetes and insulin use. There was no association between duration of diabetes, family history of diabetes, and type of diabetes with knowledge of diabetes.

Conclusion: The Filipino diabetic knowledge of diabetes is poor and not related to age, sex, and duration of diabetes. Filipino-DKT is an acceptable, reliable, and valid measure of diabetes knowledge used in our clinical practice and research. **(Author's abstract)**

Keywords: Diabetes Knowledge, Translation, Validation, Medicine

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NP

Diabetes Self-Management Education Program (DSME) among Adolescents with Type 1 Diabetes Mellitus

De Leon, Anjanette S. , Trinidad, Catherine Mae G. , Robles, Sofia Magdalena N. , Mejilla, Joylyn L. , De Leon, Josephine M. , Urgel, Elv

The DSME program is aimed to educate adolescents about diabetes mellitus: disease process, survival skills, exercise management, drug management, diet management, prevent acute and chronic complications and optimize quality of life. This study utilized the quasi experimental pre and post-test design involving 15 adolescent patients with Type 1 Diabetes Mellitus. The DSME materials were composed of five modules that included topics in diabetes awareness, survival skills, exercise, drug and diet management. Knowledge, Fasting Blood Sugar (FBS), Random Blood Sugar (RBS) and waist and hip ratio (WHR) were tested. The Intervention phase was implemented in three months where each module was completed by patients in two weeks. Pre and post-test examinations were done after each module. Participants have very satisfactory knowledge in diabetes awareness, survival skills, exercise, drug management before and after the DSME program. However, participants knowledge in diet management were unsatisfactory before and after the DSME program. FBS were high but RBS levels and WHR were in normal levels before, during and after the DSME program. Knowledge scores were significantly different before and after the implementation of all the modules (Module 1 to Module 5) to the participants. RBS results were significantly different after the implementation of the Module 1- DM awareness and Module 5- diet management. However, no significant differences were obtained in the RBS results of the participants after the implementation of Module 2, 3, 4, and 5. No significant differences were also obtained in the WHR parameters of the participants in each of the implementation of DSME. No significant differences in the FBS results were obtained after the implementation of the DSME modules. The module type DSME is effective in increasing knowledge of the adolescent patients in diabetes and its management. The content of the diet management module needs to be strengthened and be tested again for its effectiveness in increasing knowledge of adolescent patients. (**Author's abstract**)

Keywords: *Diabetes Management Self Education, Diabetes Type 1, Diabetes Mellitus, Medicine*

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NP

The Diagnosis, Treatment, and Outcomes of Filipinos with Marfan Syndrome

Carandang, Ralph Laurence A. , Lazo, Reynaldo C. , Toledano, Bryan Rene F., Macapagal, Rami

Introduction: Marfan syndrome is an autosomal dominant disorder of connective tissue that results from abnormal fibrillin- 1. It is caused by a mutation in the FBN1 gene making it a multisystemic disease. It is the most common but may have overlap with other thoracic aortic syndromes. It is primarily diagnosed using the 2010 revised Ghent nosology criteria that rely on the presence of family history, progressive aortic root dilatation or dissection, ectopia lentis, genetic testing, and systemic features. Unfortunately, a lack of nationwide awareness, family history, and medical access may lead to delayed diagnosis and treatment in our setting.

Case Summary: We report 4 cases of Marfan Syndrome from May to October 2019, which were seen at our institution. They presented with either recently diagnosed aortic aneurysm, dissection, or severe heart failure. We used the Revised Ghent Nosology for diagnosis and treated them with the standard of care. However, outcomes were different across patients.

Discussion: The life expectancy is comparable to the general population If early diagnosis is achieved. A myriad of known cardiovascular complications can manifest from severe valvular heart disease secondary to mitral valve prolapse, aortic root dilatation, and, most commonly, aortic dissection.

Conclusion: A late diagnosis presenting as aortic dissection or severe valvular heart disease may have a poor quality of life and prognosis. A thoracic aortic syndrome, most commonly Marfan, should still be considered in patients with aortic criterion and premature aortic syndrome even if a systemic score of 7 is not fulfilled. The screening of first-degree relatives of affected patients is an effective strategy to diagnose them at an early stage where they are still asymptomatic. **(Author's abstract)**

Keywords: *Marfan case series, Premature Aortic Disease, Thoracic aortic syndromes, Medicine*

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NP

0207

Diagnostic Accuracies of a Smartphone-Based Fundus Photography and Tablet-Based Visual Field Testing

Covar, Rainier Victor A. , Tecson, Patricia Anne S., Caparas, Victor Jose

Objective: We determined the diagnostic accuracies of the mydriatic, monoscopic, iPhone 6s+ optic nerve photographs with a 20D lens and the Melbourne Rapid Fields (MRF) visual fields iPad application.

Methods: This was a prospective, cross-sectional, single-center study involving 47 non-glaucomatous and 49 glaucomatous eyes. Each eye underwent 2 visual field tests: MRF iPad application and the Humphrey Field Analyzer (HRF). Mydriatic photographs of the fundus were taken with two devices: an iPhone 6s+ combined with a 20 D lens and the Visucam 500 fundus camera. All printouts were evaluated by 2 independent, masked glaucoma specialists. Diagnostic accuracies between the modalities were computed. Agreements between different parameters of both devices were analyzed using Cohen's kappa test.

Results: Smartphone-based (iPhone 6s+) fundus photos had an overall sensitivity of 100%, specificity of 89.36%, positive predictive value (PPV) of 89.36% and negative predictive value (NPV) of 100%, with all kappa values between graders of each parameter above 0.61. Tablet-based Melbourne Rapid Fields test had a sensitivity of 81.82%, specificity of 86.54%, PPV of 83.72% and NPV of 84.91%, showing good agreement with the HRF with a kappa value of 0.68 ± 0.07.

Conclusion: Smartphone-based fundus photography and tablet-based visual field tests are comparable to the standard fundus photos and visual field tests in evaluating the optic nerve and visual field. These portable devices are reliable and appropriate tools for diagnosing glaucoma and can be used for documentation and testing in remote areas and in a wider range of settings. **(Author's abstract)**

Keywords: *Glaucoma, Medication Adherence, Self-Efficacy, Questionnaire, Translation, Medicine*

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0208

Diagnostic Accuracy of Serum 1,5-anhydroglucitol as a Surrogate Measure of Glycemic Variability Among Adult Filipinos with Type 2 Diabetes Mellitus: A Retrospective Cross-sectional Study

Cheng, Christian Bernard T. , Tabora, Joebeth S. , Lee, Ainee Krystelle C., Sy, Rosa A

Background: Among the various glycemic indices in current use, glycemic variability has the greatest contribution in the development of microvascular and macrovascular complications in Type 2 Diabetes mellitus (T2DM). Most metrics that are currently used to measure glycemic variability are derived from continuous glucose monitoring (CGM) data. However, CGM is burdensome to the patient due to its relatively high cost as well as the need for multiple visits with the health care provider. With the use of serum 1,5-anhydroglucitol (1,5-AG) as a biomarker of glucose fluctuations, physicians and patients alike could have an easier surrogate measure of glycemic variability thus aiding in achieving target glucose control. This study aims to determine the diagnostic accuracy of 1,5-AG as compared to the glycemic variability metrics derived from CGM as a surrogate measure of glycemic variability among adult Filipinos with T2DM.

Methods: Retrospective analysis of data of adult patients aged 20 years old and above diagnosed with T2DM referred for CGM at the Diabetes, Endocrine, Metabolic, and Nutrition Center of Cardinal Santos Medical Center from January 2017 to October 2021 who underwent serum 1,5-AG level determination within 2 weeks of CGM were collected. Diagnostic accuracy was obtained by computing the sensitivity, specificity, positive (PPV) and negative predictive values (NPV), and Youden index. Pearson correlation coefficient was used to determine the correlation of 1,5-AG and the different metrics. Analysis of variance (ANOVA) was used to check for statistical significance with 99% confidence interval and a $p < 0.05$ considered as statistically significant.

Results: This study involving 37 subjects showed a good diagnostic accuracy of serum 1,5-AG levels with the different measures of glycemic variability derived from CGM namely mean amplitude of glycemic excursion (MAGE), continuous overlapping net glycemic action at 1-hour intervals (CONGA-1), and mean of daily differences (MODD) with significant correlation among patients with $HbA1c \leq 7\%$. Subjects were on CGM for approximately 6 ± 1 day with statistically significant difference between the good and poor glucose control group ($p < 0.05$). Determination of diagnostic accuracy between 1,5-AG and MAGE showed good accuracy (Sensitivity = 95.3%, Specificity = 100%, PPV = 100%, NPV = 75.43%, Diagnostic accuracy 96%, and a Youden Index of 92.3) with a statistically significant correlation among subjects with $HbA1c$ level $\leq 7\%$ ($p = 0.021$). There is likewise good diagnostic accuracy between CONGA-1 and 1,5-AG level (Sensitivity = 99%, Specificity = 75.29%, PPV = 89.1%, NPV = 97%, Accuracy = 89.50% and Youden index of 58.41) with a statistically significant correlation among subjects with $HbA1c \leq 7\%$ ($p = 0.038$). Comparison with interday glycemic variability showed fair diagnostic accuracy between MODD and 1,5-AG (Sensitivity = 79.17%, Specificity = 78%, PPV = 97%, NPV = 32%, Accuracy = 76.89%, and Youden index of 49.07) and a statistically significant correlation among subjects with $HbA1c \leq 7\%$ ($p = 0.009$).

Conclusion: There is good diagnostic accuracy of serum 1,5-AG levels with the different measures of glycemic variability derived from CGM namely MAGE, CONGA-1, and MODD with significant correlation among patients with $HbA1c \leq 7\%$. Among diabetics with $HbA1c \leq 7\%$, 1,5-AG could be used as a surrogate measure of glycemic variability and excursions. (Author's abstract)

Keywords: Serum 1,5-anhydroglucitol, Continuous glucose monitoring, Type 2 diabetes mellitus, Medicine

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0209

Diagnostic Dilemma: A Case Report on Primary Peritoneal Carcinoma in a Patient with Suspected Ovarian Malignancy

Remotigue, Carmela Rosanne A. , Robles, Jeremy Jones F. , Cercado, Gerald

Introduction. Primary peritoneal carcinoma (PPC) is an uncommon malignancy and is often misdiagnosed as peritoneal carcinomatosis from metastatic gastrointestinal carcinoma and more frequently from ovarian carcinomas due to a common embryonic origin of the ovary and the peritoneum. Its diagnosis is a challenge for clinicians. Herein, we report a rare case of PPC in a 72-year-old woman who was initially suspected with metastatic ovarian malignancy, and emphasizes points that help differentiate PPC from primary ovarian cancer.

Case. This a case of a 72-year-old female with abdominal discomfort and distension, initially diagnosed with ovarian carcinoma, with abdominal CT scan revealing thickening of the omentum multiple enhancing nodules in the left adnexa, within the pouch of Douglas and subdiaphragmatic region compatible with malignancy such as metastases from carcinoma. Cancer antigen (CA) 125 (3476 u/mL) and CA 15-3 (45.94 u/mL) were elevated. The patient underwent dilation and curettage and diagnostic laparoscopy and biopsy with frozen section, which revealed metastatic clear cell adenocarcinoma, favoring primary ovarian carcinoma. The patient then underwent exploratory laparotomy, total abdominal hysterectomy, bilateral salpingo-oophorectomy with bilateral lymph node dissection, and omentectomy. Further histopathological findings later confirmed that the patient had carcinoma primarily from the peritoneum instead of from the ovary. The patient was discharged, improved and underwent chemotherapy post-operation.

Conclusion. This report emphasizes how to distinguish primary malignancy from the peritoneum from that in the ovary, preventing misdiagnosis. The emphasis in considering primary peritoneal cancer as a differential diagnosis in patients with abdominal symptoms suspected due to malignancy should be noted. **(Author's abstract)**

Keywords: *Primary peritoneal carcinoma, Ovarian cancer, Peritoneal carcinomatosis, Case report, Medicine*

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0210

The Dynamic Care Nurse *Labarinto,*

Virginia Henderson defined that the primary role of nurses for individuals, whether sick or well, is to assist them in regaining their health and promoting their independence in activities of daily living (Halloran, 2018). The gap that is noted in the definition of Henderson's role of nurses is the lack of direction as to how will a nurse render care that is unique and satisfying to an individual, knowing that the demand of expectation rises. Thus, it motivated this paper to study the concept of the dynamic care nurse. This concept paper utilized Walker and Avant (2005) method of analysis. The attributes associated with the dynamic care nurse are (1) continuous learning; and (2) the utilization of best practices. The antecedents identified include (1) initiative, and (2) compassion (ICN, 2012, Hemberg et al., 2020, Kroning, et al., 2019). Dynamic care nurse exemplifies the attributes of continuous learning and the utilization of best practices. Nurses can bridge the gaps in the practice through these attributes and by possessing initiative and compassion, it is not by afar to achieve a better health care service and positive health outcomes. **(Author's abstract)**

Keywords: *Dynamic, Dynamic care nurse, Best practices, Continuous learning, Nursing care, Compassion, Initiative, Quality care, Medicine*

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0211

An Economic Analysis of Selective Laser Trabeculoplasty versus Topical Prostaglandin Analogues as Initial therapy for Primary Open-Angle Glaucoma in a Tertiary

Government Hospital in the Philippines

Martinez, Jose Maria D. , Jacomina, James Michael D., de Leon, John Mark

Objective: This study compared the economic viability of initial medical therapy with topical prostaglandin analogues (PGAs) versus selective laser trabeculoplasty (SLT) in the treatment of primary open-angle glaucoma (POAG).

Method: This was an economic analysis using actual, current treatment costs of PGA therapy versus SLT applied to theoretical, literature-derived clinical efficacy data projected for a period of 19 years. A socioeconomic and demographic survey conducted among POAG patients at the Department of Health Eye Center of the East Avenue Medical Center from March-April 2022 provided the economic context and setting for the analysis. The treatment regimens were compared in terms of total cost, clinical efficacy, cost-effectiveness and cost-utility in the setting of a tertiary government hospital.

Results: Thirty-one (31) patients were included in the study. The total annual cost of topical PGAs was Philippine Pesos (Php) 13,532 versus Php 6,195 for SLT. Cost-effectiveness was Php 1,933 for PGAs/mmHg reduction in intraocular pressure (IOP) versus Php 983 for SLT. Cost-utility was Php 59,793/Quality Adjusted Life Years (QALY) gained for PGAs versus Php 27,373/QALY gained for SLT projected for 19 years. With government insurance coverage, cost-utility ratio was Php 47,831/QALY gained for topical PGAs versus 16,327/QALY gained for SLT.

Conclusion: In POAG patients, SLT was more cost-effective versus PGAs with a lower cost per mmHg IOP reduction, and lower cost-utility ratio for every QALY gained. SLT can be recommended as initial therapy for POAG especially for patients being treated at tertiary government hospitals. (**Author's abstract**)

Keywords: *Economic analysis, Cost-effectiveness, Cost-utility, Glaucoma, Selective laser trabeculoplasty, Prostaglandin analogues, Quality adjusted life years, Philippines, Medicine*

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0212

Effect of health education on mother's knowledge to the length of hospital stay of children with pneumonia in Jakarta

Waluyanti, Fajar Tri , Nurhaeni, Dr. Nani , Casma

Purpose: Pneumonia is the most common reason for parents to send their children for hospitalization. Currently, parents still lack knowledge on the proper management of sick children during hospitalization. It causes longer stay of children with pneumonia. This study aimed to identify the effects of giving health education through video and leaflet on mother's knowledge and their children's length of stay in three general hospitals in Jakarta region.

Methods: This study was a quasi-experimental study with pretest and posttest nonequivalent control group design. Health education was given to 64 mothers, 32 of them received it through video, while the other 32 received it through a leaflet. All respondents received health education in three days since their children were admitted. Data was collected through a self-reported questionnaire. Wilcoxon, Mann-Whitney, and t-Test were used for data analysis.

Result: This study showed mother's knowledge increased in both groups, however, the median difference of pretest-posttest on video group was higher than the leaflet one. Median difference value in video group was 8, and for leaflet group was 6 ($p < .001$). Children's length of stay in the video group was shorter than those in the leaflet group ($p < .001$).

Conclusions: Health education through video has a higher impact on increasing mother's knowledge and decreasing children's length of stay as compared through the use of leaflets. (**Author's abstract**)

Keywords: *Children, Health education, Length of stay, Mother's knowledge, Pneumonia, Medicine*

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0213

The Effect of Smoking in the Development of Stroke in Young Patients 19 to 45 Years Old: A Case-Control Study

De Asis Bernardo, Fritz Rinaldi, Fernandez, Marc Laurence L., Manongas, Ken, Bautista, Cherie

Introduction: The increasing incidence of stroke in young adults has been a growing concern, which is why research studies were generated to find out the risk factors contributing to the development of this disease. This study investigated the dose-dependent effect of smoking in the development of stroke in the young ages (19-45 years).

Methods: A case-control retrospective study was conducted using electronic and printed records of the patients admitted to Amang Rodriguez Memorial Medical Center last 2017-2018. There were 275 patients included in the study. The smoking status and pack-years cigarette smoking of the subjects were recorded and were correlated with the duration of hospitalization and the Modified Rankin Scale (MRS). Results were analyzed using student's t-test, ANOVA, and Pearson's Correlation.

Result: The prevalence of stroke was higher in men than in women. The ORs (95% CI) of stroke were significant in current cigarette smoking at 2.71 (CI: 1.6398 to 4.4943). Compared with non-smokers and those who smoked 1 to 9 pack years, the OR of stroke was significantly increased for those who smoked 10 to 19, and ≥ 20 cigarettes per day with OR of 14.0765 (4.10 to 48.35), and 31.5854 (1.82 to 548.97), respectively ($p= 0.032$ for linear trends). There was a weak positive linear correlation between pack years of cigarette smoking (1-9, 10-19, >20 pack years) and days of hospitalization ($r= 0.28$; p for trend = 0.0168). There was also a strong positive linear correlation between stroke outcome using the Modified Rankin Scale and pack years of cigarette smoking ($r = 0.72$; P for trend = 0.001). This study shows an increase in the odds of stroke in current cigarette smokers with a dose-dependent relationship in its outcome.

Conclusion: Smoking is a significant risk factor for stroke with a dose-dependent effect on its outcome. Furthermore, quitting smoking significantly decreases the risk of developing stroke. (**Author's abstract**)

Keywords: *Stroke, Pack Years Cigarette Smoking, Modified Rankin Scale, Case-Control, Retrospective, Pearson Correlation, Medicine*

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0214

Effect of Smoking on the Estimated Glomerular Filtration Rate of Chronic Kidney Disease Patient Prior to Dialysis Initiation

Manongas, Ken P., Larang, Chernob

Introduction. Smoking is prevalent among Filipinos, but little is known about whether this is associated with the rapid decline of the renal function among patients with existing chronic kidney disease (CKD). The purpose of this study is to investigate whether or not there is a direct relationship of smoking to the progression of CKD requiring patient to be on dialysis/renal replacement therapy.

Methods. A cross-sectional, retrospective study design was used. All CKD 5D patients of the Amang Rodriguez Memorial Medical Center (ARMMC) Hemodialysis (HD) Unit in the month of July to August, 2019 were included, if they are > 18yo, regardless of their co-morbidities. Excluded are those with acute kidney injury (AKI), and iatrogenic, surgical or trauma complications that cause renal dysfunction. Charts were reviewed and 55 patients qualified. Smoking status were grouped according to the US Centers for Disease Control (CDC) smoking definitions, either never, former and current smoker. Estimated glomerular filtration rate (eGFR) Creatinine were computed using the CKD-Epi formula 3-yr, 2-yr, 1-yr and 0-yr prior to HD. The main outcome measure was whether and what among the smoking status hastens the progression of CKD. Descriptive statistical analyses were done along with one-way variance, two-way variance, and chi-square.

Results. Most of the smokers were males ($p < 0.001$). Most of the participants had diabetes as the primary illness. All of the participants had same endpoint of having eGFR < 15 at the time of dialysis initiation. There was a significant progressive decrease from eGFR3 to eGFR0 in all smoking status. Current smokers have the highest significant reduction in eGFR ($p < 0.001$).

Conclusion. Smoking hastens the progression of CKD among Filipinos. With that, we support the smoking cessation campaign of the ARMMC and the DOH. In addition, further work up is suggested to determine the primary mechanistic pathway of smoking that affects the renal cells. **(Author's abstract)**

Keywords: *Chronic Kidney Disease, Smoking Status, eGFR, Medicine*

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(Filipiniana Analytics)
NP

0215

The Effect of Wearing N95 Respirator Masks on Intraocular Pressure of Health Care Workers

Covar, Rainier Victor A. , Silva, Paolo S. , Granada, Denise Patri

Objective: We determined if there was a significant change in the intraocular pressure (IOP) of healthcare workers with extended use of N95 masks.

Methods: This was a prospective time-series study involving 58 eyes of 29 healthcare workers who were assigned to 3 groups: surgical mask (control) and 2 intervention arms consisting of valved N95 (8511, 3M, USA) and non-valved N95 (8210, 3M, USA) masks. Each participant underwent IOP measurements of both eyes by Goldmann applanation tonometry at baseline, 5 minutes, 1 and 4 hours of mask use on three separate days. The primary outcome was the difference in IOP between the N95 and surgical mask groups.

Results: Mean baseline IOP of the cohort was 13.85 ± 1.11 mmHg with no significant difference among the groups. Compared to surgical mask use, mean IOP was increased at the 1 hour and 4 hour time points with valved N95 use (+0.88, $p < 0.001$; +1.48, $p < 0.001$ respectively) and increased at the 5 minute, 1 hour and 4 hour time points with nonvalved N95 use (+0.52, $p = 0.01$; +1.07 $p < 0.001$; +1.62, $p < 0.001$, respectively).

Conclusion: There was a statistically significant increase in IOPs with prolonged N95 mask use. However, the levels of IOP increase were less than 2 mmHg and may be not clinically significant. **(Author's abstract)**

Keywords: *Goldmann applanation, Intraocular pressure, N95 mask, Glaucoma, Surgical mask, Breathing resistance, Medicine*

Effectiveness and Safety of Therapeutic Plasma Exchange as an Adjunctive Treatment for Coronavirus Disease 2019 (COVID-19) Patients: A Systematic Review

Mesina, Flordeluna Z. , Julian, Jomell C. , Sy, Charles Er

Rationale: COVID-19 is a new, rapidly emerging zoonotic infectious disease. Addressing the cytokine storm and coagulopathy associated with this disease can minimize its severity and complications. Therapeutic plasma exchange (TPE) can be potentially used to remove these deleterious cytokines and procoagulant proteins.

Objective: This study aims to assess the effectiveness and safety of TPE as an adjunctive treatment for COVID-19 patients.

Research Design and Methodology: A systematic search of databases was conducted utilizing PubMed and Cochrane databases to identify relevant literature until December 31, 2020. All publications were included if they use TPE in COVID-19 patients. The exclusion was applied in publications written in language other than English, review papers, or on-going clinical trials. No restrictions on age, sex, or clinical setting were applied. The eligible studies were reviewed in full text independently by two authors. Methodological quality and risk of bias assessment were done. The findings from the individual studies were summarized.

Results: A total of 21 studies were included. Overall risk of bias was high within and across the studies. All studies reported marked improvement of clinical status and laboratory results after receiving the TPE. The use of TPE among COVID-19 patients resulted in no serious or life-threatening adverse events.

Conclusion: The available studies on the use of TPE for COVID-19 patients is still limited and evidence is of low certainty. However, based on the available data, it has an encouraging result to be used as effective and safe adjunctive treatment in COVID-19 patients. **(Author's abstract)**

Keywords: *Therapeutic plasma exchange, COVID-19, Cytokine storm, Coagulopathy, Medicine*

Effectiveness of an Isotonic Carbohydrate-Electrolyte Sports Beverage in Preventing Hypokalemia and : A Pilot Study: A Pilot Study

Biaoco-Young, Beverly, Bito-onon, Mar

Colonoscopy is the gold standard for imaging the colonic mucosa to identify lesions for excision biopsy. For a colonoscopy to be successful, a thorough bowel cleansing is necessary; however, it can result to electrolyte imbalances. Co-administration of carbohydrate-electrolyte solutions may help prevent such complications. This study evaluated the effectiveness of an isotonic carbohydrate-electrolyte sports beverage in preventing hypokalemia and hyponatremia, when given for fluid replacement during bowel preparation for colonoscopy. This pilot study was conducted in a tertiary hospital for 6 months after approval from the Ethics Review Committee.

Patients scheduled for elective colonoscopy were included. Two tablets of Bisacodyl 5mg/tablet per orem, followed by 1 tablespoon of phosphosoda dissolved in 1L Sprite was used for bowel preparation in both groups. Patients with normal baseline sodium and potassium were included. Group A patients were given the sports beverage while Group B patients were given distilled water. The post-bowel preparation serum sodium and potassium of the two groups were compared. For the Sports Beverage Group, both the serum sodium and potassium increased from baseline in 60% of patients, respectively. For the Distilled Water Group, the serum sodium decreased in 70% of patients and the serum potassium also decreased in 80% of patients after bowel preparation. For the Sports Beverage Group, 100% had normal sodium and 10% had hypokalemia while for the Distilled Water Group, 10% had hyponatremia and 40% had hypokalemia. None of the patients developed hypernatremia and hyperkalemia in both groups. The mean serum sodium between the two groups after bowel preparation was not statistically significant (p-value=0.531 vs 0.425). For the serum potassium, the mean values of the two groups after bowel preparation was statistically significant (p-value=0.044). Co-administration of an isotonic carbohydrate-electrolyte sports beverage is effective in preventing hypokalemia among patients undergoing bowel preparation for colonoscopy. **(Author's abstract)**

Keywords: *Isotonic sports beverage, Colonoscopy, Hypokalemia, Hyponatremia, Medicine*

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NP

0218

Effectiveness of chia (*Salvia hispanica* L.) as an adjuvant therapy for Type 2 diabetes mellitus: A systematic review and meta-analysis

Gallera, Joseph Francis D. , Galicia, Klarizza V. , Gacute, Ma. Cristina J. , Fullero, Pamela Marie G. , Fuentes, Anthony Joseph M. , Fredeluces, Mariah Mae E. , Flores, Bea Steffi C. , Fider, Rowena Alysha F. , Fernandez, Thea Katrina I. , Fernandez, Lorenzo Victor D., Gan, April Ann K. , Gapuz, Alyssa Nicole L. , Juangco, Jose Ronil

Introduction Salba-chia (*Salvia hispanica* L.) is a popular functional food containing high levels of protein, total dietary fiber, and is an excellent source of α -linolenic acid. Chia seeds significantly decreases weight, suppresses appetite, and has a potential benefit in the management of Type 2 diabetes mellitus (T2DM). This study aimed to determine the effectiveness of chia seeds as an adjuvant treatment for T2DM.

Methods Randomized controlled trials from 1990 onwards involving Type 2 diabetic patients given chia seed were included. PubMed, Cochrane, ClinicalKey, Google Scholar, and Hinari were searched systematically using MeSH terms “chia”, “*Salvia hispanica*”, “dietary supplement”, and “diabetes”. The quality of trials was assessed using the Cochrane Collaboration tool. Data on the study design, blinding status, characteristics of participants, medications taken by participants, chia seed intervention, comparator, duration of intake, and interval of assessment were extracted. The percent change of outcome from baseline was compared between the chia and control groups.

Results Four randomized trials with a total of 213 diabetic patients were enrolled in the treatment group using ground salba-chia or the control group using bran. The supplementation of chia resulted in a statistically significant decrease in fasting glucose (-2.90 mmol/L; 95% CI, -3.08, -2.72; $p < 0.001$), waist circumference (-2.49 cm; 95% CI -2.81, -2.17; $p < 0.001$), total cholesterol (-2.72 mmol/L; 95% CI -3.68, -1.74; $p < 0.001$), HDL (-3.69 mmol/L; 95% CI -3.95, -3.42; $p < 0.001$), LDL (-3.22 mmol/L; 95% CI -4.08, -2.36; $p < 0.001$); and an increase adiponectin levels (6.50 mg/L; 95% CI 6.25, 6.25; $p < 0.001$).

Conclusion Intake of chia seeds resulted in a statistically significant decrease in fasting blood glucose, waist circumference, total cholesterol levels, HDL and LDL cholesterol levels, and increased adiponectin. Chia seeds are generally safer and have lesser side effects compared to the placebo. Chia is effective as adjunctive treatment for Type 2 diabetic patients. **(Author's abstract)**

Keywords: *Chia, Type 2 diabetes, Glycemic control, Appetite suppression, Dietary supplement, Adjunct, Adjuvant, Medicine*

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0219

Effectiveness of the Otago Exercise Programme in falls reduction among community-dwelling older people in Southeast Asia: A systematic review

Husaini, Hjh Asmah Haji , Johar, Amal Azimah Haji , Teo, Shy

Background: Falls are common in older people and a leading cause of injury. Exercise programmes are available for falls prevention, including the Otago Exercise Programme (OEP). The Southeast Asia region has a rapidly ageing population with unique aspects to consider in falls prevention. This systematic review aims to explore the effectiveness of OEP in Southeast Asia for falls prevention.

Methods: A literature search conducted in April 2020 of PubMed and Google Scholar databases was performed to identify randomised controlled trials on OEP in Southeast Asia.

Results: Three studies met inclusion criteria for the systematic review. The studies in Malaysia and Thailand did not identify any differences in the rate of falls with the modified OEP intervention compared to conventional treatment. The study from Indonesia inferred a reduced fall risk with improved Timed Up and Go with the intervention, but did not quantify fall rates.

Conclusion: The three studies identified used a modified OEP, with limited evidence of efficacy or reduction in fall rates. Further research is required, particularly randomized controlled trials to evaluate OEP for falls prevention in Southeast Asia. **(Author's abstract)**

Keywords: *Medicine*

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0220

Effects of a Self-determination Theory-Based Intervention on CPAP Treatment of Patients with Obstructive Sleep Apnea

Cura, Jonathan D. , Felipe, Rey Jo

Purpose. With continuous positive airway pressure (CPAP) being the treatment of choice for Obstructive Sleep Apnea (OSA), adherence rates to CPAP are still low without a clear consensus of causes. The Self-Determination Theory (SDT) is a general theory of human motivation that emphasizes the extent to which behaviors are relatively autonomous based on the psychological needs that are critical to supporting the process of internalization and the development of optimal motivation. This study sought to determine whether the implementation of an SDT-based intervention is effective in improving: (1) perceived competence, (2) treatment self-regulation, (3) CPAP treatment adherence, and (4) Apnea-hypopnea index (AHI) of OSA patients.

Methods. Using a true experimental pretest-posttest design, 30 purposively selected participants were randomly allocated to experimental and control groups. The SDT-based intervention included group sessions, individual sessions, and follow up phone calls in three weeks. Written permission to conduct the study was obtained from the Institutional Review Board of the University of the East - Ramon Magsaysay Memorial Medical Center, Inc. (UERMMMCI) and the Lung Center of the Philippines. Participation was voluntary and all participants had the right to refuse or discontinue their participation at any time during the study. Data were analyzed using two- way repeated-measures ANOVA, student's T-test, and chi-square.

Results and Conclusion. The participants in the experimental group have increased adherence rates from Time 1 (60%) to Time 2 (92.9%) and Time 3 (85.7%). Although, when compared to the control group, no significant difference was noted across the different periods of measurement ($p=0.70810$, $p=0.870$, $p=0.2403$). There were higher proportions of patients who eventually became adherent in the experimental group compared to the control group immediately after and 5 weeks after the intervention ($p=0.0001$). The experimental group had significantly better improvement in AHI compared to the control group immediately after ($p=0.0152$) and 5 weeks after the intervention ($p=0.0022$). Considering the importance of CPAP adherence in effectively treating OSA, measures to improve adherence such as SDT-based intervention could be usefully incorporated into OSA patients' treatment plans. **(Author's abstract)**

Keywords: *Obstructive Sleep Apnea, Continuous Positive Airway Pressure, Adherence, Self-determination Theory, Medicine*

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0221

Effects of Liberal Visitation on Anxiety, Satisfaction, and Length of Stay Among Intensive Care Unit Patients

Ramos, Rita , Rama, Lito P

Several organizations recommended liberalization of ICU visits; however, the majority of the ICUs maintained restrictive visitation causing further lower social support to critically ill patients. The objective of the study is to determine the effects of Patient-Centered Liberal Visitation in the patients' level of anxiety, satisfaction, and ICU length of stay. The study used a quasi- experimental, non-equivalent control group before-after design. It was conducted in an ICU in North America for a 5-month period using validated instruments. The study utilized consecutive sampling, 30 patients for the control and 30 for the intervention group. The control group had restricted visitation, wherein ICU visits were limited to specific hours per day. Patient- centered liberal visitation based on Levine's Conservation Principles was implemented on the intervention group where visitations in ICU were more flexible. The study was approved by the Ethical Review Board. Sixty participants were included in the study with no significant difference when control and intervention group were clustered according to age ($t=0.591$, $p=0.557$), gender ($X^2= 0.069$, $p=0.793$), marital status ($X^2= 5.524$, $p=0.137$) and ethnicity ($X^2= 1.024$, $p=0.795$). A significant difference within the intervention group's pre-test and post-test Faces Anxiety Scale (FAS) Score ($t=4.287$, $p=0.000$) was noted. Similarly, the study found significant difference within the intervention group's pre-test and post-test overall 6-item State Anxiety Inventory (SAI) Score ($t=4.774$, $p=0.000$). Pre-test anxiety scores in the intervention group were higher compared to post-test anxiety scores. Furthermore, a significant difference ($t=3.831$, $p=0.000$) was noted on patient satisfaction. The result showed higher patient satisfaction among the participants in the intervention group (4.73, SD 0.521) compared to the control group (3.97, SD 0.964). Lastly, when measuring the participants' length of stay, no significant difference ($t=-0.397$, $p=0.693$) was noted. Patient-centered liberal visitation in the ICU decreases the patients level of anxiety and improves patient satisfaction. However, liberal visitation does not have a significant effect on the patients' ICU length of stay. **(Author's abstract)**

Keywords: *Anxiety, Liberal visitation, Open visitation, Intensive care unit, Nursing, Satisfaction, Holistic care, Critical illness, Medicine*

Effects of proprioceptive neuromuscular facilitation on spine joint position sense in adolescent idiopathic scoliosis: A case report

Garces, Eun

Introduction. Adolescent idiopathic scoliosis (AIS), described as a complex three-dimensional spinal deformity, is thought to affect neurophysiological processes that result in a loss of proprioceptive input. The main purpose of this case study is to investigate the effect of Proprioceptive Neuromuscular Facilitation (PNF) on spine joint reposition (JR) sense in a 20-year-old with AIS.

Methods/ Case Description. The subject was a 20-year-old college student with moderate dextrothoracic and levolumbar scoliosis. She has structural scoliosis-related impaired posture, as evidenced by findings of impaired JR sensation in all directions, postural deviations, and patient-reported deformity perception using the Walter Reed Visual Assessment Scale. She was seen 4 times a week for 3 weeks.

Results: The most recent radiographs analyzed by a radiologist revealed that the curvature of the thoracic spine had decreased from 38° to 32° and the curvature of the lumbar spine had decreased from 26° to 24°. There were also improvements noted in JR sensation, postural deviation, and deformity perception.

Discussion: Incorporation of PNF in the patient's plan of care may have positively contributed to improvement in JR sense of the spine, postural symmetry, and deformity perception. Future studies should examine the other components of proprioception, the effect of PNF in subjects with greater or more severe curvature, and information on joint position perception in healthy subjects. **(Author's abstract)**

Keywords: *Proprioceptive neuromuscular facilitation, Spine joint position sense, Adolescent idiopathic scoliosis, Case report, Medicine*

Effects of Visual Impairment on Quality of Life in Children Aged 3-7 Years

Monzon-Pajarillo, Andrea Kristina, Buño, II, Bon

Objective: The primary goal of this study was to determine the effect of visual impairment (VI) on the quality of life (QoL) in children aged 3-7 years.

Methodology: This was a cross-sectional study involving 138 parents or caregivers of children aged 3-7 years from Pediatric Ophthalmology and General Ophthalmology Clinics of a tertiary government hospital. The Filipino version of the Children's Visual Function Questionnaire (CVFQ3plus), an instrument that measures the impact of visual impairment on the QoL of children aged 3-7 years and their families, was used. It has 6 subscales: general health, general vision, competence, personality, family impact, and treatment. T-test was used to compare the total index QoL score and subscale scores between children with VI (n=69) and the control group (n=69). The

multivariate regression model based on the total index QoL score in children with VI was used to assess the effect of other demographic factors.

Results: Children with VI had significantly lower total index QoL score ($p=0.02$), general vision ($p=0.04$), competence ($p=0.00$), and personality ($p=0.02$) subscale scores than the control group. The visual acuity of children with VI had a significant effect on the total index QoL score ($p=0.04$). Demographic factors like patient's age and sex, and parental age, sex and educational attainment had no effect on total index QoL score.

Conclusion: Visual impairment has a negative effect on the quality of life of Filipino children aged 3-7 years as shown by the use of the CVFQ3plus. (Author's abstract)

Keywords: Corneal laceration, Corneal lenticule, Fibrin glue, Corneal patch graft, Ocular trauma, Medicine

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0224

Efficacy and Safety of Corticosteroid Administration in Moderate to Severe COVID-19: A Meta-analysis

Mendoza, Clarissa M. , Bantolo, Alena Pias , Talamayan, Erika Xandra N. , Talamayan, Erika Xan

Background. Adding to the current available evidence on the efficacy of exogenous corticosteroids as an adjunct to standard of care in improving the clinical outcomes of COVID-19 patients. This meta-analysis examined the experimental and clinical data supporting this therapeutic intervention in improving clinical outcomes.

Objectives. This meta-analysis aimed to assess the efficacy of corticosteroids in improving outcomes in COVID-19 patients.

Search methods. Literature searches of electronic databases (PubMed, Cochrane Library, Science Direct, Google Scholar) were performed to identify relevant studies.

Data Collection and Analysis. Meta-analysis was performed using Review Manager (RevMan) software, version 5.4.1. Intervention effects were expressed in terms of mean differences and risk ratios for continuous and dichotomous variables, respectively. Fixed-effect or random-effects model was adopted according to heterogeneity.

Main Results. A total of seven studies were included in the quantitative synthesis. Analysis of pooled data showed a 12% reduced risk of mortality in COVID patients given corticosteroids (RR 0.88, 95% CI 0.81 to 0.95). Patients who were administered with corticosteroids also had 22% decreased risk of requiring invasive ventilation support (RR 0.78, 95% CI 0.64 to 0.95). Number of adverse events were similar between the two groups (RR 1.10, 95% CI 0.49 to 2.46).

Conclusion. Adjunct corticosteroid therapy provided improvements in clinical outcomes such as decreased deaths and decreased need for invasive ventilation support. There was no sufficient evidence of a significant adverse effect, hence it is relatively safe and beneficial to use in COVID19 patients. (Author's abstract)

Keywords: Corticosteroids, COVID-19, Meta-analysis, Clinical outcomes, Medicine

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The Efficacy and Safety of *Emblica officinalis* Aqueous Fruit Extract among Adult Patients with Dyslipidemia: A Systematic Review and Meta-analysis

AA±onuevo-Cruz, Ma. Cecile S., Arcellana, Anna Elvira S., Larrazabal, Jr., Ramon B., Chiu, Harold Henrison C., Acampado, Laura Rosa

Background. Flavonoids from *Emblica officinalis* effectively reduced serum and tissue lipid levels through their inhibitory effect on the hepatic β -hydroxy- β -methylglutaryl coenzyme A reductase activity. This study aimed to determine the efficacy and safety of *E. officinalis* extract in adults with dyslipidemia.

Methods. We searched the following electronic databases: MEDLINE (PubMed), MEDLINE (Ovid), Google Scholar, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Web of Science, and ClinicalTrials.gov from inception until January 31, 2022. Two reviewers independently screened the abstracts, reviewed full-text papers, and critically appraised the quality of included studies. Meta-analysis was performed using the random-effects model. Our primary outcomes were total cholesterol, LDL-C, serum triglycerides, and HDL-C levels, while secondary outcomes included adverse events.

Results. A total of four randomized trials (N = 227) were included in the final analysis. There were statistically significant decreases in total cholesterol levels (SMD = -21.23 mg/dL, 95% CI: -34.22, -8.25; P = 0.001) and LDL-C levels (SMD = -25.12 mg/dL, 95% CI: -40.24, -10.00; P = 0.001) and significant increase in HDL-C levels (SMD = 4.74 mg/dL, 95% CI: 0.40, 9.07; P = 0.03) after 12 weeks of intervention favoring the use of the *Emblica* extract over placebo. However, there were no statistically significant difference in the serum triglycerides levels following 12 weeks of treatment (SMD = -22.28 mg/dL, 95% CI: -53.33, 8.76; P = 0.16). There was high heterogeneity noted across all outcomes: total cholesterol (P = 0.01, I² = 72%), LDL-C (P = 0.0004, I² = 83%), HDL-C (P < 0.00001, I² = 91%) and serum triglycerides (P < 0.00001, I² = 93%). The intervention was well tolerated and adverse events reported in the three of four studies were all mild: dyspepsia (7 events – treatment), mild diarrhea (3 events – placebo), fever (1 event – placebo), headache (1 event – placebo).

Conclusion. Compared to placebo, *Emblica officinalis* fruit extract resulted in lower total cholesterol and LDL-C levels and increased HDL-C levels but with no effect on serum triglyceride levels based on low certainty of evidence. Trials with a larger sample size that directly compare *E. officinalis* extract to statins, preferably local data, are needed to support its use in patients with dyslipidemia further.
(Author's abstract)

Keywords: *Dyslipidemia, Emblica officinalis, Phyllanthus emblica, Meta-analysis, Medicine*

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Emerging Utility of Endovascular Thrombectomy in the Philippines: A Single-center Clinical Experience

Soliven, Jo Ann R., Constantino, Glenn Anthony A., SeÃ±ga, Miguela Marie A., Jocson, Victor Erwin

Background and Objective. Stroke has remained one of the primary causes of significant morbidity and mortality. Among the therapeutic options for acute stroke management, endovascular thrombectomy is intended to remove the thrombi within the intracerebral vasculature and restore adequate perfusion to the surrounding penumbra. It is recommended up to 24 hours from onset of neurologic symptom. In the Philippines, only a few

tertiary healthcare institutions are able to offer and perform endovascular thrombectomies. The aim was to describe the profile and discharge outcomes of endovascular thrombectomy for acute ischemic stroke at a tertiary hospital in our country.

Methods. We conducted a retrospective records review among 924 patients admitted for acute ischemic stroke from October 2018 to August 2021 who underwent mechanical thrombectomy. Clinical and functional outcomes were measured using the National Institutes of Health Stroke Scale (NIHSS) and Modified Rankin Score (mRS).

Results. Among 31 patients included in the study, 29 subjects (93.5%) had moderate to severe disability (mRS 3-5), and 25 (80.6%) had moderate stroke (NIHSS \geq 21) on admission. The identified site of the cerebrovascular thrombi was within the M1 segment of the middle cerebral artery (41.9%, n=13). The stent retriever approach was performed in 19 participants (61.2%). Upon discharge, only 7 (22.6%) had favorable functional outcomes (MRS \leq 2), and 9 (29.0%) resulted in mortality. Successful reperfusion was achieved in 92.3% of the patients.

Conclusion. Overall, endovascular thrombectomy is a possible treatment option for large vessel acute ischemic stroke in developing countries. **(Author's abstract)**

Keywords: *Thrombectomy, Endovascular procedures, Ischemic stroke, Treatment outcomes, Medicine*

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0227

Work Environment and Workload of Staff Nurses in Level 2 Hospitals at Cavite, Philippines *Javier, W*

One of the greatest healthcare challenges for today's generation is the improvement of the nursing work environment. Despite the challenges brought by the unhealthy working environment and high workload demand, Filipino nurses stood up high in maintaining professionalism towards their work. The goal of this study is to determine the relationship between the work environment and the workload of staff nurses in level 2 hospitals in Cavite, Philippines. Quantitative non-experimental descriptive correlational design was used, and the standardized questionnaires namely: Practice Environment Scale of the Nursing Work Index (PES-NWI) and NASA Task Load Index (NASA-TLX) were used to gather data from 70 respondents. Results showed that majority were female, belonging to Millennial age (23-38 years old), had baccalaureate degree in Nursing, with a gross monthly salary of Php 15,000.00- 19,999.00, being in the institution for more than 6 months to 5 years, and have an average nurse to patient ratio of 11.30. Their level of work environment was favorable in all subscales with a composite score of 3.13 (SD= 0.570). Their perceived workload was high, with a mean score of 71.24 (SD= 12.78). Likewise, nurse to patient ratio had a significant relationship with nurse manager ability, leadership, and support of nurses ($X^2= 94.26$, $p= <.001$) and staffing and resource adequacy ($X^2= 75.06$, $p= 0.002$). Moreover, significant relationships among the variables of age and physical demand ($p= .004$), length of institutional experience and physical demand ($p < 0.001$), educational attainment and performance ($p= .018$), educational attainment and effort ($p= .005$), and length of institutional experience and effort ($p= .001$). Last, there is no statistically significant correlation between the overall work environment and the overall workload of nurses ($r= -.084$, $p= .491$). These findings underscore the importance of measures aimed at enhancing the work environment and workload of staff nurses to prevent further challenges among them. **(Author's abstract)**

Keywords: *Work environment, Workload, PES-NWI, NASA-TLX, Staff nurses, Medicine*

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Evaluation of Urine L-FABP Point of Care Kit in the Philippines as Predictive Marker of Clinical Severity of COVID-19 (EPOCH COVID study)

Uichanco, Ann Celestyn , Lee, Nica , Chan, Erika , Pasilan, Renz , Chua, Eric , Beltran, Kay , Solante, Rontgene , Gomez, Lynn , Chua, Alberto, Diego, Micaela San , Danasen, Abe

Background: The search for simple clinical and laboratory markers to help predict the clinical severity of patients presenting with COVID-19 has prompted this study to look at the predictive value of urine L-FABP (Liver Type-Fatty Acid Binding Protein) point-of-care test kit at the initial presentation of COVID-19 patients to the hospital.

Methods: The validation study prospectively included 109 consecutive patients with mild to moderate COVID-19, mean age of 52.2 years (range 19-84) presenting at the Emergency Rooms of 4 participating Metro-Manila hospitals from February to April 2021, with available data for analysis for 103 patients. Urine L-FABP POC (Point-of-Care) test and other clinical parameters and the level of severity of COVID-19 were determined at Day 0, Day 4 and Day 7. Computations for Sensitivity, Specificity, Positive and Negative Predictive values and Likelihood ratios were performed

Results: Twenty-three patients tested positive for urine L-FABP, out of the 103 patients analyzed, while 80 tested negative. Of the 23 patients who tested positive for urine L-FABP, 6 has progressed in severity, while 17 did not progressed. Of the 80 patients who tested negative for urine L-FABP, 13 progressed, while 67 did not progressed in severity. Giving a Sensitivity of 31.58%, Specificity of 79.76%, Positive predictive value of 26.09%, Negative predictive value of 83.75%. Combining urine L-FABP and initial clinical parameters like SIRS (Systemic Inflammatory Response Syndrome) criteria to predict progression of severity yielded a higher Specificity of 91.67% and Negative Predictive value of 84.62%.

Conclusions: The study shows the utility of initial urine L-FABP POC test as a negative screening test in triaging adult patients presenting to the ER with mild to moderate COVID-19. Patients at the ER with a negative urine L-FABP test, will most likely not progressed to severe COVID-19. Combining clinical parameters like SIRS Criteria with the urine L-FABP result can increase the negative predictive value. (**Author's abstract**)

Keywords: COVID-19, Urine L-FABP POC (Point-of-Care) test, SIRS Criteria, Medicine

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Evidence-Based Practices in Mentoring Student Nurses in Clinical Placement: A Meta-Analysis

Bascos, Mark

Purpose: Mentoring is an essential variable in the learning process of student nurses. This study aimed to identify effective mentoring practices in the clinical placement of student nurses.

Design and methods: Systematic review and meta-analysis were conducted. The main databases used were PubMed, Cochrane Central Register of Controlled Trials, JBI Database of Systematic Reviews and Implementation Reports, CINAHL, and Medline. The risk of bias was assessed utilizing the JBI appraisal tool. The data were summarized and statistically analyzed using the Comprehensive Meta-Analysis version 3.0

software.

Results: Out of 17,946 records screened, six studies met the inclusion criteria. Peer and nurse-led mentoring practices were reported to have positive outcomes in the students' clinical placement. Meta-analysis revealed a statistically significant effect of mentoring in the students' clinical placement (SMD 0.357, 95% CI 0.038, 0.677, I² = 69.26%, p = 0.028). A subgroup analysis resulted in a statistically significant effect of mentoring by nurses and peers in the improvement of students' knowledge and skills (SMD = 0.426, 95% CI, 0.202, 0.650, I² = 0%, p = 0.000).

Conclusions: Mentoring can positively influence the interaction between a conducive clinical learning environment and positive learning outcomes. Specifically, this meta-analysis suggests that student nurses can benefit from peer and nurse-led mentoring in improving knowledge and skills. It is suggested that effective mentoring practices be utilized to inform the development of a student mentoring program. (**Author's abstract**)

Keywords: *Mentoring, Students, Clinical placement, Meta-analysis, Medicine*

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0230

Executive Summary of the 2020 Clinical Practice Guidelines for Sepsis and Septic Shock in Adults in the Philippines

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Sepsis is thought to affect over 30 million individuals all over the world annually, and puts at risk of death some six million of these people. The incidence of sepsis throughout the world had been reported to be 22 to 240 cases per 100,000 persons using the old sepsis definition. In February 2016, the Sepsis-3 definitions drastically changed the paradigm for sepsis. This 2020 Clinical Practice Guideline (CPG) adopted the new definitions and the latest evidence on sepsis and septic shock to (1) establish the definition and clinical criteria to be used in the Philippines, (2) present evidence-based recommendations with regard to screening, diagnosis, treatment, and prognostication of sepsis and septic shock in immunocompetent adults, and (3) aimed to reduce practice variability among healthcare practitioners and improve clinical outcomes in patients with sepsis and septic shock. The preparation of the guideline was spearheaded by the Steering Committee who selected the members of the multidisciplinary Technical Working Group (TWG) and the Consensus Panel. The TWG, composed of experts across various fields and specialties, conducted a comprehensive review of evidence relevant to each guideline question. The Consensus Panel consisted of different stakeholders who voted for the recommendations. The GRADE (Grades of Recommendation, Assessment, Development and Evaluation) Approach was used to determine the quality of evidence and guide the strength of recommendations. Publication of this CPG is part of the dissemination process, which will be followed later on by monitoring and updating. (**Author's summary**)

Keywords: *Sepsis, Septic shock, Guideline, Definition, Criteria, Diagnosis, Treatment, Medicine*

Exhaustive Review on Nail Lacquer in the Treatment of Nail Diseases

Butola, Mansi , Nainwal, Nidhi , Chauhan, Ayushi, Jakhmola, Vi

The delivery of drugs through the transungual route is necessary because many nail diseases such as onychomycosis, psoriasis, paronychia, and onycholysis require topical drug delivery through the nail plate to avoid the systemic side effects of drugs first-pass hepatic metabolism and to provide direct benefits at the site of disease. However, topical delivery is associated with the main drawback of poor permeability of drugs through the nail plate. The nail plate contains tight networks of cross-linked protein (keratin) that provide hardness to the nail. Successful permeation of drugs through this nail barrier can be achieved by mechanical or chemical approaches. The chemical methods (penetration enhancers) are mainly associated with the disruption of nail integrity. Nail lacquers are the most popular dosage form from the formulation viewpoint. As the solvent evaporates, lacquers create polymeric drug-loaded films on the nail tissue that have a high concentration of the drug and allow for prolonged contact with the tissue. The present article focuses on the emergence of nail lacquers as prospective transungual delivery systems for the treatment of various mild to moderate nail diseases. (**Author's abstract**)

Keywords: *Clinical trials, Evaluation, Formulation, Nail fungal infections, Nail lacquers, Patents, Transungual drug delivery, Medicine*

Experiences and Perspectives of Filipino Patients with Stroke on Physical Therapy Telerehabilitation: A Phenomenological Study Protocol

*Martin, Kristian Joseph C. , Celso, Adellene Therese S. , Taguinod, Hanz Lauren A. , Cardenas, Arianne B. ,
Quizzagan, Mirzi Chelsea R. , Lau, Janelle Meara Y. , Dismaya, Micah L. , Loa, Beatrice Ann Q. , Esplana,
Nicole Trizia S. , Lipardo, Donald S. , Cruz, Christopher G., Uy, III, Leonardo*

Introduction: Stroke is the third leading cause of death in the Philippines, so these patients must continuously undergo rehabilitation for faster recovery. With the rise of COVID-19, physical therapy (PT) telerehabilitation (TR) has emerged, where services are provided outside the usual rehabilitation setting for patients with stroke to continue their treatment while reducing the risk of acquiring COVID-19. However, it is a relatively new service in the country; hence, further research is needed to identify the factors and needs of these patients during TR, which may help improve PT TR services.

Objective: This study aims to explore the experiences and perspectives of Filipino patients with stroke who have undergone PT TR in the Philippines since March 2020. Administrators of healthcare facilities, policy-makers, and other decision-makers involved in evaluating, implementing, and developing PT TR may benefit patients with stroke. This can expand the scope of rehabilitation to patients with stroke who have no access to face-to-face rehabilitation or improve the training or education of Physical Therapists who are providing TR to stroke patients.

Methods: This will be a qualitative phenomenological study design that will use purposive sampling to recruit

participants. Semi-structured interviews (SSI) will be conducted online using Google Meetings®, Zoom®, or Facebook Messenger® to record their experiences and perspectives. The NVivo data analysis software will be used to create codes and identify themes from the data gathered. The data that will be obtained is about the experiences and perspectives of Filipino patients with stroke regarding PT TR. The insights of the participants will undergo Thematic Analysis until no new information will be discovered from the analyzed data.

Expected Results: This study will identify facilitators, barriers, recommendations for improvement, and the needs of these participants during TR. **(Author's abstract)**

Keywords: *Stroke, Telerehabilitation, Physical therapy, Medicine*

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0233

External Beam Radiotherapy for Bilateral Leukemic Infiltrative Optic Neuropathy in a Pediatric Patient

Pajarillo, Junn , Oropilla, Amap

Objective: To describe a rare case of acute lymphocytic leukemia (ALL) with optic nerve head tumor cell infiltration treated with external beam irradiation.

Methods: This is a case report.

Results: A 13-year old female with ALL complaining of blurred vision was found to have leukemic optic nerve head infiltration as evidenced by the presence of bilateral large, poorly-circumscribed, white masses covering the optic discs. She underwent external beam radiotherapy with total dose of 3000cGy. Four months posttreatment, there was marked reduction in tumor bulk with corresponding partial but significant visual improvement. No post-radiation complications were noted.

Conclusion: External beam irradiation is an effective treatment in reducing tumor bulk secondary to leukemic infiltration of the optic nerve with no significant collateral damage to adjacent ocular and periocular tissue. Early intervention is warranted to maximize visual recovery. **(Author's abstract)**

Keywords: *Acute Lymphocytic Leukemia, Optic Nerve, Pediatric, Radiotherapy, Medicine*

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NP

0234

Factors affecting mental health outcomes of healthcare workers at Cardinal Santos Medical Center during the Coronavirus Disease (COVID-19) pandemic

Molina, Marc Conrad C. , Sy, Rosa Allyn G. , Apa-ap, Archime

Background. Studies show that healthcare workers from previous pandemics have experienced high levels of stress, anxiety with negative psychological impacts. This paper aims to identify factors affecting mental health outcomes of healthcare workers during Coronavirus Disease (COVID-19) pandemic.

Methods. A cross-sectional design was used to determine factors affecting mental health outcome of healthcare workers with direct contact to patients with COVID-19. Depression, anxiety and distress were measured by the nine-item Patient Health Questionnaire, seven-item Generalized Anxiety Disorder scale, and 22-item Impact of Event Scale–Revised, respectively. Binomial multiple logistic regression model was used to identify the factors associated with mental health outcome.

Results. 172 healthcare workers were included. Prevalence of depression, anxiety and distress symptoms among all healthcare workers were 57%, 47.7%, 65.1%, respectively. Age and living with a family with comorbidities are significantly associated with depression and anxiety. Healthcare workers aged 31 years and above are 70% less likely to have depression symptoms (OR 0.278, CI 95%, 0.11-0.72 p=0.008 and OR 0.273, CI 95%, 0.12-0.61, p=0.002). Those living with relatives with comorbidities are 2.7 times more likely to experience depression symptoms (OR 2.731, CI 95%, 1.36-5.5, p=0.005). Healthcare workers age 31-40 years has 80% less likely to experience anxiety symptoms (OR 0.212, CI 95%, 0.09-0.5, p<0.001), and those age 41 and above have 73% less likely to have anxiety symptoms (OR 0.37, CI 95%, 0.14-0.98, p<0.045). Those living with relatives with comorbidities are 2.9 times more likely to have anxiety symptoms (OR 2.889, CI 95%, 1.46- 5.73, p=0.002). Level of knowledge on COVID-19 among health care workers significantly differs across severity but has no significant association with prevalence of depression. No factors were associated with distress symptom.

Conclusion. Cognizant of high rates of depression, anxiety and distress among our younger healthcare workers living with relatives with comorbidities will be a challenge to establish and/or improve existing programs to promote and address mental health needs. Psychological stress can accumulate over time and have an impact later in the outbreak which should be investigated in future studies. **(Author's abstract)**

Keywords: *Mental health outcomes, Healthcare workers, COVID-19, Medicine*

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NP

0235

**Factors Affecting the Outcome of Adult Patients with Methicillin-resistant *Staphylococcus aureus* and Non-Methicillin resistant *Staphylococcus aureus* pneumonia:
A Retrospective, Cross-sectional Cohort Study
Obillo, Froilan Jacinto R. , Manongas, Ken P. , Yap, Mari**

Introduction: Pneumonia continues to be a leading cause of morbidity and mortality worldwide. Locally, pneumonia is the 3rd cause of death (2016). Currently, one of the concerns is the rise of resistant microorganisms particularly MRSA. Knowledge regarding MRSA pneumonia is mostly from international data.

This study aims to determine the factors that may affect the outcome of MRSA and non-MRSA pneumonia as well as describe the susceptibility patterns of its etiologic agents.

Methods: This is a retrospective, cross-sectional cohort study. The setting is a tertiary government hospital. The target subjects are patients 18 y/o and above, with bacteriologically-confirmed pneumonia, and were admitted in 2017.

Results: The results revealed a high rate of MRSA pneumonia (88.2%), most are community-acquired (90%), and factors associated with mortality were: male, Type 2 DM, smoking history, radiographic findings of congestion, and atheromatous/tortuous aorta. For hospital length of stay, no significant difference was noted. For Non-MRSA pneumonia factors associated with mortality were: erythrocytosis, kidney and liver disease, cancer, previous cerebrovascular disease, previous admission (ARMMC), number of comorbidities, findings of altered sensorium, chest retractions, DBP ≤ 60 mmHg, radiographic findings of pulmonary congestion, and classification of CAP-MR. Morbidity factors included: anemia, trauma, multiple comorbidities, radiographic findings of

bilateral infiltrates, unilateral/bilateral consolidation, unilateral/bilateral minimal pleural effusion, subcutaneous emphysema, congestion, and infection with multiple bacteria.

The first antibiogram for the institution revealed a poor susceptibility pattern for the usually used empiric treatment.

Conclusion: This study reveals a high rate of MRSA pneumonia, with several factors associated with its mortality. In terms of morbidity, no significant difference was noted from the variables measured. For Non-MRSA pneumonia which is seen in the majority of the subjects, several factors associated with mortality were noted and unlike MRSA pneumonia the morbidity is affected by the presence of anemia, trauma, multiple comorbidities, etc.

The antibiogram showed a poor susceptibility to the usually used empiric treatment. (**Author's abstract**)

Keywords: MRSA pneumonia, Empiric treatment, Clinical outcomes, Medicine

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NP

0236

Factors Affecting Voluntary Blood Donations among Adults in Metro Manila, Philippines, as a Basis for Policy Improvement on Donor Recruitment
Utanes, Beatrice Ysabel G. , Clemente, Benjie M. , Dulay, Daphne Cherlott T. , Mancita, Sophia Catherine A. , Alican, Chloie Anne L. , Mappala, Arnold Christ

Background. Blood donation practice in the Philippines is low despite numerous efforts to recruit potential donors and increase blood supply.

Objectives. This study aimed to explore the sociodemographic profile of potential donors and their perceived level of knowledge, motivators, and hindrances on blood donation practice to recommend improvements in policies and strategies regarding blood donation recruitment.

Methods. A descriptive study design was utilized to attain the objectives of the study. A piloted questionnaire was floated through various social media platforms to gather data. Data were analyzed using descriptive statistics and Pearson's product-moment correlation.

Results. We included 260 Metro Manila residents, 18 to 65 years old and without conditions that merited permanent deferral in blood donation. Overall, the respondents had an adequate perceived level of knowledge ($\bar{x}_1 = 3.13$, $SD = 0.70$) on blood donation but the lowest level of knowledge on the interval between successive blood donations ($\bar{x}_2 = 2.71$, $SD = 1.04$). Furthermore, respondents were considerably motivated to donate blood ($\bar{x}_3 = 2.67$, $SD = 0.42$) mainly due to relatives and friends requiring blood ($\bar{x}_4 = 3.73$, $SD = 0.60$), and have minimal discernment of being discouraged from blood donation ($\bar{x}_5 = 2.09$, $SD = 0.48$) mainly due to time constraints ($\bar{x}_6 = 3.23$, $SD = 0.78$). Moreover, there is a significant but low inverse correlation ($r = -0.151$, $p = 0.015$) between age and motivation, suggesting younger individuals have more motivation to donate blood. Thus, policies and strategies that target young donors are highly suggested.

Conclusion. Poor blood donation practices in the Philippines suggest recalibration of policies and strategies by targeting young individuals and showcasing altruism to improve donor recruitment. Moreover, it is recommended to strategically establish blood service facilities in accessible areas with flexible operating hours to accommodate potential donors with hectic schedules. (**Author's abstract**)

Keywords: Blood donation, Philippines, Donor recruitment, Medicine

Factors Associated with Length of Stay in the Emergency Department: A Narrative review

Rasmussen, Philippa , Kusumawati, Happy Indah, Judy Magar

Background: Increasing demand and complex procedures may associate with the length of stay (LOS) in the Emergency Department (ED). Prolonged LOS may decrease the quality of ED care and increase patient harm. Therefore, it is pivotal to analyze factors that may contribute to ED LOS.

Objective: This review aimed to identify and discuss factors that contribute to the Emergency Department length of stay (ED LOS) to improve the quality of care.

Methods: Relevant healthcare databases including PubMed and CINAHL were searched using the combinations of search terms: length of stay, length of visit, emergency department, emergency room, and patient flow. Inclusion criteria included publications between 2007-2017.

Results: A total of 24 relevant papers was selected. The literature indicates that three main factors are associated with ED LOS: input (older patients and acuity level), throughput (diagnostic tests and or radiology, specialist consultation), and output (need for admission and boarding time).

Conclusion: Input, throughput, and output factors are contributed to ED LOS. Further review is necessary to determine organizational factors that may contribute ED LOS including the number of health staff, staff workload, flow studies, and health system. **(Author's abstract)**

Keywords: *Length of stay, Length of visit, Emergency department, Emergency room, Patient flow, Medicine*

Factors Predictive of Treatment Response and Survival in Filipino Patients with Autoimmune Hepatitis

Romano, Rommel P. , Dalupang, Carmelita D. , Dy, Frederick T. , Mampao-Gentallan, Jessa Monalee, Velasco, Alvin Brian C. , Wong, Stephe

Background: There is a dearth of data on Filipino patients with autoimmune hepatitis (AIH). We aimed to describe the demographic and clinical profiles of patients with AIH and to characterize clinical outcomes and treatment responses.

Methods: A retrospective cohort study involving patients from two tertiary centers diagnosed with AIH from January 1, 2007, to December 31, 2019, was included. Disease remission was defined as the normalization of ALT levels, while failure was defined as an increase in ALT levels over baseline or clinical deterioration.

Results: A total of 48 patients were identified between 2007 to 2019. The median age at presentation was 51 (27-79 yrs.). Liver cirrhosis was already present in 37.5% (27.1% decompensated) on diagnosis. Aside from a higher histologic activity index in females (p=0.047), there were no gender-specific differences. Disease remission was achieved in 41.9% of patients at 6 months, while only 9.3% failed. At the final disposition, remission rates had slightly increased to 58%, but failure rates had risen to 12%. Treatment responses at both 6 and 12 months and MELD and Child-Pugh class influenced treatment responses at final disposition. Median overall survival was 102 weeks and was influenced by the presence of liver dysfunction and 12 months and final treatment responses.

Conclusion: Autoimmune hepatitis remains an important cause of morbidity and mortality. The results of the study highlight the need for immunosuppressive therapy to induce early remission for a higher likelihood of subsequent biochemical remission to reduce the risk of liver-related mortality. **(Author's abstract)**

Keywords: *Autoimmune Hepatitis, Treatment response, Liver Cirrhosis, Steroids, Azathioprine, Medicine*

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0239

Family caregiver: Caring on family carers

Javison, Sherwynn

This study was conducted to clarify the idea of caring for non-professional family caregivers and identify their vulnerabilities while caring for their patients. This concept was developed because of the non-availability of structured caregiving programs for non-professional family caregivers in the hospitals and community. This issue might lead to potential health and safety hazards for patients and caregivers. Nurses and non-professional family caregivers can co-create a safe and loving environment ideal for patient care. Nurses are essential to upholding the health and safety of non-professional family caregivers while developing their confidence and care performance. Moreover, training the non-professional family caregivers in the hospital and communities would promote safe and effective nursing practice in preparation for a smooth patient transition at home. **(Author's abstract)**

Keywords: *Family caregiver, Non-professional family caregivers, Nursing, Caring, Work-related hazards, Collaboration, Medicine*

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NP

0240

Feasibility and Acceptability of an Electronic Mobile Device Application Among Physicians from the Private Sector for Reporting Cases to the National TB Program

Roman, Arthur Dessi E. , Garcia, Jemelyn U., De Los Reyes, Mari Ros

Introduction In the 2016 National TB Prevalence Survey, the prevalence-to-notification ratio for smear-positive pulmonary tuberculosis was 3.1. In the TB registry, 94% of cases were reported by public providers, suggesting insufficient reporting from private physicians. This study describes the feasibility and acceptability of an electronic mobile device application for possible use among private physicians for reporting their TB cases.

Methods This interventional, pre-, and post-test study uses an electronic mobile device application to report TB cases. Using the application, physicians collected and uploaded specific information for reporting cases. The participants were duly-licensed physicians and board certified in any of the following: Internal Medicine, Adult Infectious Diseases, Adult Pulmonology, Pediatrics, Pediatric Infectious Diseases, or Pediatric Pulmonology. The participants used an electronic mobile device application for reporting TB cases. Feasibility and acceptability were assessed using a questionnaire and through a focus group discussion. Data were summarized with mean and standard deviation for continuous variables and proportions for categorical variables.

Results The study was conducted at the Research Institute for Tropical Medicine, a government hospital with a Tuberculosis Directly Observed Treatment Short-Course (TB DOTS) facility. Of the 30 physicians invited to participate, 24 provided consent, but only 15 downloaded the application (age range 34-61, mean 39 years, 11 females). Eleven of 15 physicians (73%) assessed the mobile application as easy to navigate and felt that information encoded was relevant to patient care. However, the internet connection affected the speed of the application. The physicians said they had no time, were too busy, or simply forgot to encode patient data.

Conclusion The use of the application is acceptable but not feasible for use by private physicians. Modification to the application may be done to improve uptake by private physicians. (**Author's abstract**)

Keywords: *DOTS, Tuberculosis, Case reporting, Digital mobile device, Medicine*

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NP

0241

Fertility Desire and Associated Factors Among HIV/AIDS Women with Antiretroviral Therapy in Yogyakarta, Indonesia

Lutfiyati, Afi, Sari, Ike Wuri Winahyu, Rukmi, Dwi K

Women living with HIV/AIDS (WLHA) in Indonesia face a lot of stigma in their communities, even in healthcare settings. Because of this, their desire to have biological children is suppressed. However, some positive changes to the desire to have children may be apparent with the introduction of antiretroviral therapy (ART). Fertility desires may also have implications for unprotected sexual intercourse. To date, there is limited knowledge about the fertility desires of WLHA receiving HIV care in Yogyakarta, Indonesia. Hence, the present study explores the extent of this fertility desire and its associated factors among WLHA in Yogyakarta, Indonesia. Using a cross-sectional quantitative research design, 303 WLHA who are receiving ART, were obtained via convenience sampling in five districts in Yogyakarta between March and August 2019. WLHA with a hysterectomy and permanent contraception were excluded. Data were collected using a questionnaire and analyzed using descriptives, chi-square, and logistic regression. Just over half of the WLHA (50.8%) wanted to have at least one biological child without gender preferences. Bivariate correlations showed that younger age, formal employment, and not having a living biological child correlated with greater fertility desire ($p < .05$). A logistic regression further indicated that age (35 years or younger) ($p < .001$; AOR: 3.33; 95% CI: 2.00 to 5.53) and being childless ($p < .001$; AOR: .13; 95% CI: .52 to .33) were the most influential factors associated with the fertility desire among WLHA in Yogyakarta. We found that the WLHA, who were receiving ART in Yogyakarta, wanted to have their biological children. Since fertility concerns are an integral part of HIV patients' care, health workers can help the groups of WLHA who desire to have biological children make the right reproductive decisions by letting them know the benefits and risks of childbirth and measures to prevent HIV from spreading. (**Author's abstract**)

Keywords: *HIV, Women, Art, Fertility desire, Medicine*

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2020 July to December,
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NP

The Filipino Adaptation of the Glaucoma Medication Adherence Self-Efficacy Questionnaire

FlorCruz, II, Nilo Vincent dG., Batcagan, Ian

Objectives: This study translated the Glaucoma Medication Adherence Self-Efficacy Questionnaire (GMASQ) and tested the reliability of Filipino-adapted GMASQ.

Methods: A Filipino-adapted GMASQ was developed using the guidelines recommended for translating a validated health-related questionnaire into a culturally-adapted one. The methods included: (1) forward translation, (2) back-translation, (3) review and modification, (4) pre-testing and cognitive interviewing, and (5) final version testing. The provisional questionnaire was pre-tested on 20 glaucoma patients to determine its value and correspondence, generating a final forward questionnaire. The final version was administered to 48 patients. Its reliability was determined by computing for the Cronbach's α for each item, per section, and overall. An item was removed if the α was <0.7 .

Results: Eleven (11) pre-test subjects (55%) preferred the Filipino-adapted questionnaire, 6 (20%) had no preference, and 3 (25%) preferred the source questionnaire. The provisional Filipino-adapted GMASQ proved to be acceptable and with no changes made, the questionnaire was marked as the final version. The medication adherence self-efficacy scale showed Cronbach's α of > 0.8 for all items with a section $\alpha = 0.84$. The eye-drop technique had an $\alpha > 0.7$ for each item and a section $\alpha = 0.80$.

Conclusion: This study provided preliminary evidence of the feasibility, acceptance and reliability of the Filipino GMASQ. (**Author's abstract**)

Keywords: *Glaucoma, Medication Adherence, Self-Efficacy, Questionnaire, Translation, Medicine*

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(Filipiniana Analytics)
NP

A Filipino Child with Schinzel-Giedion Syndrome

Salonga-Quimpo, Rhea Angela M., Abacan, Mary

Schinzel-Giedion syndrome is a rare condition characterized by dysmorphic features, neurologic features, urogenital abnormalities, and radiographic changes. The etiology has been traced to mutations in the SETBP1 gene. We report a Filipino patient with features suggestive of Schinzel-Giedion Syndrome and the first to be confirmed through molecular testing. (**Author's abstract**)

Keywords: *Schinzel-Giedion, SETBP1, Coarse facies, Midface retraction, Medicine*

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2023,
(Filipiniana Analytics)
NP

The Filipino family in a pandemic: A crosssectional study on the state of the household environment of COVID-19 patients in the Philippines

Agreda, Jill Andrea S. , Agbayani, Daniella L. , Abrilla, Denise Michelle A. , Abne, Vince Joshua L. , Abello, Patricia Nicole M. , Abeleda, Harold Emman P. , Abayon, Devann Ross O. , Abarca, Angela Nicole D. , Abad, Miguel A. , Abuda, Katrina Nicole B., Sison, Jr., Leopoldo P. , Uy, Norbert Lingling

Introduction Under COVID-19 guidelines, families are spending extended hours together within a limited physical space, giving rise to a living situation that can bring families closer together and/or lead to conflicts. This study aimed to determine the current state of household cohesion and conflict among families with confirmed COVID-19 cases in the Philippines.

Methods This was a cross-sectional study using the COVID-19 Household Environment Scale (CHES) as a self-administered questionnaire among adult persons who belonged to households with at least one family member previously diagnosed or currently with COVID-19 in August and September 2021. Participants were recruited online using convenience and snowball sampling. The CHES is a 30-item tool which measures conflict and cohesion through the Conflict and Togetherness Subscales, respectively.

Results The composite median values of 386 participants surveyed reveal scores that were clustered to the left for the Conflict Subscale and neutrality for the Togetherness Subscale.

Conclusion There is a general increase in household conflict and a non-significant change in togetherness among the surveyed families. The composite median values, if taken compoundly, imply the existence of more conflict and less togetherness. **(Author's abstract)**

Keywords: *COVID-19, Family household, CHES, Medicine*

Health Science Journal, Volume No. 11 Issue No. 1, 18-29
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NP

Filipino Health Care Professionals' Knowledge, Attitude and Perception regarding Drug-Susceptible and Drug-Resistant Tuberculosis in a High TB Burden City in Central Luzon: A Cross- Sectional Study

Tanwani, Albert , Nocum, Maria Lourdes , Redondo-Samin, Divina Cristy , Manzano,

Introduction: Tuberculosis (TB) is one of the major diseases responsible for the public health and economic crisis in low-income countries, with the Philippines as one of the eight countries in 2020 that accounted for two thirds of the new TB cases worldwide. Its three most populous regions which are the National Capital Region, Calabarzon and the Central Luzon Region reported the highest number of TB cases in 2015. One important consideration is that health care providers' knowledge, attitude and perception regarding TB largely affects the success of TB treatment.

General Objective: This study assessed the knowledge, attitude and perception among health care professionals who manage tuberculosis, using a validated questionnaire regarding drug-susceptible and drug-resistant tuberculosis in Cabanatuan City, Nueva Ecija.

Methodology: Cross-sectional study was used in this research. All health care professionals assigned in each identified health facility were asked to participate in the study. After obtaining informed consent, a self-administered questionnaire was given to all participants to answer. Descriptive statistics and Chi-square tests were used in data analysis.

Results and Discussion: A total of 113 participants were included in the study. Physicians, nurses and medical technologists were found to have good TB knowledge compared to pharmacists. Those who had training on TB DOTS were found to have good knowledge towards tuberculosis compared to those who had no training. Most participants, regardless of their profession, length of stay at TB DOTS Centers, and their training on TB DOTS, had a favorable attitude and perception towards patients infected with TB.

Conclusion: The lack of training may have largely contributed to the poor knowledge of HCPs which may possibly hinder the success of providing TB treatment. It is therefore of paramount consideration that prior to the HCPs' assignment in TB DOTS centers, all HCPs must first undergo training in order to manage TB treatment properly and successfully. **(Author's abstract)**

Keywords: *Health Care Professionals, Knowledge, Attitude, Perception, Drug-Resistant Tuberculosis, Medicine*

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(Filipiniana Analytics)
NP

0246

Filipino next generation nurses as frontliners amid COVID-19 pandemic: A Husserlian phenomenology study

Miranda, Melvin D. , Valencia-Raymundo,

Purpose: Since the outbreak of the unprecedented COVID-19 health crisis, Filipino nurses are one of the vital health workers in fighting its devastation in the Philippines. The study aimed to describe the lived-experiences of Filipino next generation nurses as frontliners in the midst of COVID-19 pandemic.

Design: The paper espoused the qualitative research design of inquiry exclusively Husserlian descriptive phenomenology. Study participants were selected using non-probability, purposive sampling design. The sample (N=19) was consisted of Filipino nurses with less than 10 years of practice experience, referred to as next-generation nurses, who function as frontline healthcare workers in healthcare settings, both male and female. The study was conducted in the national capital region (NCR), which has the most COVID-19 cases in the country. Due to the community quarantine imposed by the national government, the corpus of data was collected through virtual semi-structured interviews and from the participants' testimonies posted in social-media.

Method: An adaptation of Colaizzi's empirical phenomenological research approach was utilized to obtain an in-depth understanding and analysis of study participants' experiences.

Findings: The profound, life-changing experiences of a select group of Filipino next- generation nurses were unified in three interesting themes, namely,: acclimatization to the challenges of the novel clinical situation, affirmation of the spirit of resiliency, and actualization of the valued calling.

Conclusion: The contagion has demanded a new way of working, and these nurses have risen to the challenge, and demonstrated how capable they are at responding to new situations and uncertainty. Despite facing dire challenges, they demonstrate the spirit of resiliency. This health crisis enables them to impart the value of the nursing vocation. As they navigate this unprecedented contagion, their experiences and status could likely alter at different phases of the pandemic. Hence, the provision of long-term and holistic support for them is necessary to preserve their welfare. **(Author's abstract)**

Keywords: *COVID-19 pandemic, Frontliners, Husserlian phenomenology study, Next generation nurses, Medicine*

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2021 January to June,

Filipino Physical Therapists' Practice and Perspectives on Non-Treatment Physical Activity for Older Adults

Katakura, Jr., Koji A. , Tan, Jem Bettina G. , Orlino, Ma. Anna Carmina D. , Martinez, Claire Beatrice , Chua, Daniel C. , Chan, Beatrice Camille E. , Kandal, risten Mari R. , Tanchuling, Alexa DS. , Alog, Attilah Mae B. , Lunar, Frances Rom M. , Ignacio, Marvin Lou

Introduction: Studies have already investigated the practice of physical therapists (PTs) in promoting non-treatment physical activity (NTPA). However, these were done in the context of mostly western settings or were not specific to older adult practice. It is still unclear if a similar level of practice and perspectives on NTPA promotion exists in a setting where physical therapy is more associated with rehabilitation than health promotion, such as in the Philippines. Therefore, this study aimed to describe Filipino PTs' knowledge of WHO physical activity (PA) guidelines and their use of behavioral change techniques (BCTs) and theories when promoting PA in older adults. This study also explored factors that potentially influenced their engagement in PA promotion.

Methods: Filipino PTs who were handling or interested in handling older adult clients from March to April 2020 answered an online/printed survey.

Results: More than half of 72 respondents were unaware (59.72%) and most were unable to recall the WHO guidelines (98.61%) correctly. Respondents used a limited range of BCTs when promoting PA. While some (66.66%) were aware of at least one behavior change theory, a number were unfamiliar with all (33.33%) and only a small proportion reported regular use in practice. A number of factors and respondent characteristics were found to have a statistically significant positive relationship with PA promotion.

Discussion: Study results can serve as preliminary basis for programs that improve promotion of NTPA on older-adult clients by Filipino PTs, specifically regarding knowledge on WHO PA guidelines and their use of a wide range of BCTs and theories. This can potentially place them at the forefront of addressing this health concern in the aging population. (**Author's abstract**)

Keywords: *Medicine, Physiotherapy, Behavior change, Older adults, Sedentary behavior, Philippines*

Filipino Psycho-emotional States and Behaviors at the Onset of the COVID-19 Pandemic

Aguirre, Alwin , Quiñones, Diwa Malaya , Ilustrisimo, Ruby , Labor, Paul Danielle , Quinain, Khael , Gastardo-Conaco, Maria C

The onset of the COVID-19 pandemic in the Philippines has induced significant disruptions and upheavals in the daily lives of Filipinos. Consequently, various feelings, thoughts, and behaviors have been elicited in reaction to the information and actions of different societal actors (i.e., government and media). It is essential to examine these beginning stages in crisis situations as they provide a baseline for developing management strategies in similar future contexts. Using a mixed-method triangulation design, the study explored these initial pandemic-related reactions from January to April 2020. Sentiment analysis of people's online comments indicated that the

onset of the pandemic was associated with a rise in reported negative emotions, with the top emotions being worry and anger. The only positive emotion reported was a certain level of hope. These results in emotionality complemented those from the online survey where the reported negative emotions during the news of the outbreak only intensified with the declaration of Enhanced Community Quarantine (ECQ) and ECQ extension. In addition, there was a strong overall perception of threat stemming from the pandemic and low confidence in the country's medical system to handle the emerging crisis. Moreover, negative emotions stemming from the unfolding pandemic were seen to negatively affect mental health. Emotional support from family and friends, on the other hand, was seen to sustain the mental well-being of the respondents. The results from the sentiment analysis and the online survey highlight the role of emotions in emerging crises and emphasize the urgency of developing interventions which address the pandemic's detrimental effects. **(Author's abstract)**

Keywords: Behaviors, Cognitions, COVID-19, Feelings, Mixed methods, Prediction, Medicine

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2022,
(Filipiniana Analytics)
NP

0249

Fitness Nursing: A Concept Analysis *Almazan, Anthony*

The concept of fitness nursing has not been fully defined in the nursing profession but has slowly emerged due to the increasing interest of people in physical fitness and a healthy lifestyle. Hence, this analysis aims to add Fitness Nursing to the body of nursing knowledge that is currently undefined. Walker and Avant's framework for concept analysis will be used to discover the concept. Definitions of the concept are presented along with related terms. Antecedents, attributes, and consequences of the concept are presented in detail. Model, borderline, related, contrary and invented cases are presented to provide a rich representation of the concept. Empirical referents and nursing implications are presented. The concept of Fitness Nursing can be defined as the combined science of nursing with the art of personal training that focuses on health promotional activities and disease preventive measures through physical fitness. The defining attributes are physical training and health coaching. The consequence of Fitness Nursing may be presented in two aspects, Individual aspect includes increased vitality, a better body shape, higher self-esteem, better fitness overall, and most importantly, avoidance of chronic illnesses. As for the community, the outcome would be a healthier community with increased productivity and increased lifespan. **(Author's abstract)**

Keywords: Fitness Nursing, Physical Fitness, Medicine

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NP

0250

A Five-Year Trend Analysis of the Philippine Nurse Licensure Examination (2014-2018) *Montegrigo,*

Purpose: This study analyzed the trend of the Philippine Nurse Licensure Examination (NLE) results from 2014 to 2018.

Design: A retrospective research design was used to describe the five-year trend in the NLE. It determined the association between NLE outcome (pass/fail) and the type of examinee (first time vs. repeat examinees) and timing (month) of taking the exam (May/June vs. November).

Methods: Trends in NLE results were examined to determine the pass and fail rates over five years as an indication of the quality of nursing education. Secondary data analysis was conducted after collecting publicly available NLE data. Odds ratios were estimated to express whether the odds of passing differ for the type of examinee and month of taking the NLE.

Findings: The overall pass rates indicated a decreasing trend over the past five years (47.5% to 41.3%). The first-time pass rates showed an increasing trend (70.6% to 77.3%) while the repeat pass rates revealed a decreasing trend (31.6% to 28.2%). The odds of passing the NLE among first-time examinees is 7.01 times the odds of passing the NLE compared to repeat examinees [OR = 7.01 (95% CI = 6.86, 7.12)]. The odds of passing the NLE in November is 1.32 times the odds of passing in May/June [OR = 1.32 (95% CI = 1.29, 1.34)].

Conclusions: Despite the increasing first-time pass rates, a large number of nursing graduates still fail the NLE, especially among the repeat-takers. The results of this study can be used to improve nursing programs by developing measures to increase the NLE passing performance through assisting at-risk first-time examinees prior to taking the NLE and developing programs to assist graduates who will retake the NLE. (**Author's abstract**)

Keywords: *Nurse licensure examination, First-time pass rates, Nursing education, Philippines, Medicine*

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2019 July to December,
(Filipiniana Analytics)
NP

0251

FOSTERING PARTNERSHIPS BETWEEN THE ACADEME-GOVERNMENT AND COMMUNITY IN THE COVID-19 PANDEMIC RESPONSE IN THE PHILIPPINES

Bonito, Sheila R. , Abad, Peter James B. , Mabale, Maria Angela A. , Tomanan, Kristine

This paper describes the COVID-19 response efforts through strategic partnerships of a nursing school in the Philippines. The roles of the academe through teaching as well as continuing education and community extension services programs were particularly harnessed. Existing academe-government-community partnerships were leveraged, and personal networks mobilized to provide support on risk communication, community engagement, and capacity building. Challenges and limitations encountered serve as points for improving the academe's strategies and activities. The lessons from this undertaking highlight the crucial role of nursing schools as relevant resources in COVID-19 pandemic response initiatives. Partnerships and networks built prior to the pandemic are instrumental in providing the space and opportunities for faculty and student nurses to aid in strengthening the local response. Recommendations are outlined to enhance current roles, strategies, and activities of the academe in the COVID-19 pandemic and lay future directions for Philippine nursing schools given the increasing incidence and severity of disasters in the country. (**Author's abstract**)

Keywords: *Academe-government-community partnership, Public health nursing, Disaster response, Disaster nursing, COVID-19, Public health emergency, Medicine*

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Framework for the Priority Actions of Filipino Physical Therapists in Disaster Risk Reduction and Management

Obra, Cheryll Didi Nellie N. , Chua, Francis Clare

Introduction: The study was conducted to develop a framework where physical therapists could be integrated into the disaster risk reduction and management (DRRM) initiatives of a province in the northern Philippines.

Methods: This was a mixed-methods study that utilized a research and development design. A validated questionnaire on the experience and perceptions of DRRM was administered to 20 selected physical therapists. A validated interview guide was administered to 10 local disaster control office head and members. Descriptive statistics were used to analyze the quantitative data. Thematic analysis was used to synthesize and examine the qualitative data.

Results: Physical therapists were found to have minimal exposure to disaster scenarios due to lack of training and experiences in disaster response. However, the physical therapists perceive that they are prepared to participate in DRRM and should be included. The study also revealed that physical therapists are not part of the local disaster management team because of limited awareness of leaders and members of the disaster control office on the roles of physical therapists in disaster management.

Discussion: This study developed an action-oriented framework to guide physical therapists' active involvement in all phases of disaster management. Specific strategies for the priorities for action of physical therapists in DRRM were identified based on the results of the study and its theoretical underpinnings. **(Author's abstract)**

Keywords: *Disaster, Disaster framework, Disaster management, Physical therapy, Physical therapist, Medicine*

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Glycemic Gap as a Predictor of Adverse Outcomes in Patients with Type 2 Diabetes Diagnosed with COVID-19 in a Tertiary Hospital in Metro Manila: A Retrospective Cohort Study

Montano, Carolyn N. , Isidro, Maria Jocelyn C. , Enverga, Mar

Background: Although elevated glucose levels are associated with adverse outcomes in the critically ill, HbA1c-based adjusted glycemic variables have not been extensively utilized as a tool to evaluate patients in the acute critical condition.

Objective: This study aims to determine whether glycemic gap can predict adverse outcomes in patients with type 2 diabetes diagnosed with COVID-19.

Methodology: A single center and retrospective study of adult patients with type 2 diabetes diagnosed with COVID-19. Glycemic gap was calculated as the difference between the admission blood glucose and Alcâ€• derived average glucose. Logistic regression was used to determine association of glycemic gap and several adverse clinical outcomes. A decision curve analysis was used to determine the clinical utility of a clinical decision model based on this cut-off.

Results: A total of 150 diabetic patients with COVID-19 were analyzed. Median baseline HbA1c was 7.5% (range 4.79–18.42), while median admitting blood glucose was 196 (range 71–506) mg/dL. From these, computed glycemic gaps ranged from -180.5 to 312.8 mg/dL, with a median of 13.75 mg/dL. On univariate analysis, for every unit increase in glycemic gap, odds of developing ARDS increased five times (cOR 4.798, 95% CI 2.08 to

11.09); odds of developing shock increased four times (cOR 4.48, 95% CI 1.48 to 13.44). No single cut-off value for glycemic gap was able to discriminate patients with favorable outcome from those with adverse outcome. The decision curve analysis graphically shows that glycemic gap has a positive net benefit for threshold risk of 50% or higher.

Conclusion: Higher glycemic gaps were significantly associated with increased risk for poor outcomes in diabetic patients with COVID-19. Glycemic gap should be correlated with clinical status and other laboratory parameters to make it a more powerful discriminant among COVID-19 infected patients. (**Author's abstract**)

Keywords: *Glycemic gap, Type 2 diabetes, Adverse outcome, COVID-19, Medicine*

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0254

Guillain-Barre Syndrome after Appendectomy: A Case Report

Ong, Marissa , Salcedo, Von Edw

Background: Guillain-Barre syndrome (GBS) is an acute monophasic paralyzing illness that typically occurs after gastroenteritis and respiratory tract infection. Antecedent surgical procedures are less recognized trigger of GBS.

Objectives: This paper aims to report a case of demyelinating variety of GBS that developed after appendectomy.

Methods: This is a case of a 39-year-old Filipino male who was admitted due to acute appendicitis. He developed lower extremity weakness 4 days after appendectomy. His motor deficit initially presented distally from lower extremities, which advanced to the trunk, upper extremities, and muscles of speech and deglutition. Paresthesia of the fingers and toes and distal areflexia on both lower extremities were also elicited.

Results: Diagnosis was done clinically. Nerve conduction study showed demyelinating variant, uncommon for a post traumatic GBS. Supportive care was rendered which resulted in complete recovery.

Conclusion: Surgery is a known but less identified cause of GBS. Although rare, we should consider GBS in patients presenting with ascending or progressive weakness after recent surgery because its early identification renders immediate and appropriate treatment. (**Author's abstract**)

Keywords: *Guillain-Barre Syndrome, Acute Inflammatory Demyelinating Polyneuropathy, AIDP, Appendectomy, Medicine*

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0255

Hairy Cell Leukemia in a Filipino Male during the COVID-19 Pandemic – Report of a Rare Case

Mayo, Maribeth Buan , Viray, Karmina Via

Hairy cell leukemia (HCL) is a rare, chronic, mature B-cell lymphoproliferative disorder accounting for 2% of all leukemias. In this paper, we would like to present our experience in the management of HCL in a financially limited setting where other diagnostic tests and chemotherapy are unavailable. The case report aims to emphasize the recognition of the distinctive morphology of hairy cells in the peripheral blood in the consideration of the initial diagnosis.

A 60-year-old Filipino male was incidentally found to have anemia, thrombocytopenia and an absolute neutrophilic count below 1,000 in a pre-operative clearance for elective herniorrhaphy. Blood smear revealed atypical lymphocytes with hair like cytoplasmic projections. CT-scan of the abdomen showed splenomegaly and prominent paraaortic nodes. Flow cytometry of the bone marrow aspirate was consistent with an involvement of a Mature B cell neoplasm markers CD19, CD20, CD22 and surface immunoglobulin lambda and hairy cell leukemia markers CD11c, CD103 and CD25. He responded to six-weekly sessions of Cladribine with remission of the bone marrow and hematologic parameters.

HCL is a rare type of a mature B cell neoplasm characterized by pancytopenia, splenomegaly, bone marrow fibrosis and the presence of atypical lymphoid cells with hairy projections in blood, bone marrow and spleen. Immunophenotyping express CD11c, CD103, CD123, and CD25. BRAF V600E mutation is the disease defining genetic event. Cladribine and Pentostatin are the first line of treatment.

Cases of leukemia can be easily overlooked because of the mild derangement in the complete blood count. A meticulous differential review of the atypical lymphocyte, is the first step in the diagnosis of this rare disease. (Author's abstract)

Keywords: *Hairy cell leukemia, Cladribine, Immunophenotyping, Medicine*

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0256

Health Promoting Lifestyle Behaviors of University Employees in Work-From-Home Arrangement during the COVID-19 Pandemic

Mañago, Raymund Kernell B. , Tiamzon, Mary Joy C. , Bernal, Alexandra Belle S. , Manalo, Jorel A. , Valera-Kourdache, Mary Joan Therese C. , Seludo-Ballena, Nares

Since the COVID-19 emerged, a work-from-home (WFH) arrangement was implemented as an infection containment measure among employees. This lifestyle change is bound to affect health-promoting behaviors. The study aims to determine the health-promoting lifestyle behaviors of university employees in a WFH arrangement during the COVID-19 pandemic. This study utilized a quantitative descriptive research design. After consecutive sampling of employees of a state university in Manila, the response rate was 33.1% (395 out of 1,195 eligible respondents), but only 31.8% or 380 respondents completed the validated online questionnaire through Google Forms™ from August to October 2021. The instrument was based on the Health Promoting Lifestyle Profile (HPLP) survey by Walker and Hill-Polerecky (1996). Descriptive data analysis was done via IBM® SPSS® Statistics v22. Majority were females (70.3%) and single (51.8%). Approximately 70% were staying at home with their family. The mean scores for the subscales of inner development, interpersonal relations, and stress management were 3.08 (SD±.24), 3.00 (SD±.30), and 2.70 (SD±.30), respectively. These were observed to be higher than other HPLP subsets. Subscales garnering the lowest mean scores were physical activity at 2.32 (SD±.21), nutrition at 2.68 (SD±.31), and health responsibility at 2.56 (SD±.12). The mean HPLP score of faculty members was the highest at 2.74 (SD±.36) as compared to administrative staff and research extension and professional staff (REPS) with mean scores of 2.73 (SD±.36) and 2.71 (SD±.39), respectively. Overall HPLP scores suggested that the majority (60.8%) practice “good” health-promoting lifestyle behaviors. These findings indicate that the WFH arrangement allows employees to develop social and coping skills while staying in their residences. Whereas limitations to opportunities for a more active lifestyle, availability of nutritious food, and access to health care also contribute to the low HPLP scores. Health promotion and protection strategies such

as nurse-led health programs must be instituted to improve and develop the knowledge, skills, and attitude among employees working from home in the aspects of nutrition, physical activity, and health responsibility. Nurses must also use this opportunity to promote occupational health among employees through lifestyle programs in coordination with universities and colleges or other workplaces of similar nature. Health programs must capitalize on the increase in the utilization of social media and the Internet during the pandemic. There is a need for further research to examine associations between the variables in various institutions and settings. **(Author's abstract)**

Keywords: *Health promotion, Lifestyle behaviors, Work-from-home, COVID-19 pandemic, Medicine*

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0257

The Health-Seeking Behaviors Among the Older Adults of Central Aurora *Magadan, Pe*

This descriptive cross-sectional study presents the health-seeking behaviors among older adults in Central Aurora, Philippines. Using a survey questionnaire, 179 older adults from 4 municipalities were interviewed. Participants were mostly 60-64-year-old married females, living with spouse, children, and grandchildren, with an average monthly income of 1001-5000 pesos, working as farmers, were self-employed, were Roman Catholics, and with an elementary level of education. The health-seeking behaviors were described in terms of physical, emotional, mental, social, and spiritual dimensions, with the spiritual dimension garnering the highest average mean of 4.01 (scale of 1 or never to 5 or always), and physical and mental dimensions the lowest average means of 3.58 and 3.31, respectively. These results attest to the Filipino value for the spiritual realm as an important dimension of health-seeking behaviors and the physical and the mental dimensions of lesser concern. Recommendations include creating a wellness program to enhance health-seeking behaviors in all dimensions. **(Author's abstract)**

Keywords: *Health-Seeking Behaviors, Older Adults, Central Aurora, Medicine*

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0258

History of falls, mild cognitive impairment, and the presence of home environmental hazards among community-dwelling older persons in District V, Manila *Raval, Marilou J., Lipardo, Donald*

Introduction: It is important to investigate factors that may increase the fall risk in the geriatric population in the Philippines. This study aimed to determine the relationship between 1) mild cognitive impairments (MCI) and history of falls; 2) home environmental hazards (HEH) and history of falls; and 3) MCI and HEHs among older adults.

Methods: Community-dwelling older persons of District V, Manila were random sampled to participate in this cross-sectional correlational study. The Home Falls and Accidents Screening Tool for Health Professionals (HOMEFAST-HP) and Fall History Questionnaire were used to collect information on the presence of HEH and history of falls, respectively. Chi-Square test was used to determine the relationships between variables.

Results: Thirty-seven (37) older adults, with a mean age of 69.8 + 8.1 years (range = 60-95), 84% female, participated. Majority (78.4%) have MCI. Seven (18.9%) have a history of falls. However, no significant association ($p=0.12$) exists between MCI and history of falls. About 68.2% of fallers were noted to have HEH, with improper bed ($p=.04$), inaccessible kitchen items ($p=.02$) and unidentifiable step edges ($p<.01$) as HEH which are significantly associated with fallers. While HEH are more observed (72.73%) in MCI older adults' homes compared to their peers, only loose mats ($p=.04$) and improper bed ($p=.01$) as HEH reached significant association with MCI.

Discussion: In this study, MCI is not associated with the history of falls. HEH are more common in MCI and fallers, particularly the inaccessible kitchen items, improper bed, loose mats, and unidentifiable edges of steps. Home modifications to address these identified HEH may decrease the fall risk of Filipino older adults with and without MCI. Further investigation using a bigger sample size across different dwelling situations should be considered. **(Author's abstract)**

Keywords: *Home environmental hazards, Mild cognitive impairment, Fall, Medicine*

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0259

HUMANistic Caring: An approach for meeting the care needs of Filipino gay and lesbian older persons

Luna, Evelyn Acas , Catalan, Jed Patrick M

Quality care is a basic human right and a core foundation for a patient's health, recovery, and well-being. In the current Philippine context, gay and lesbian older persons face gender-care disparities in the caring dynamism. Until now, their care needs are not articulated in the country's basic nursing curriculum. Consequently, the care approach is incongruent, biased, and risky. In response to this gender-care disparity, participatory action research (PAR) was used to identify this cohort's care needs and their meaning by developing a nursing care hub called the 'Gay Care Center' for older gays and lesbians. This paper focuses on describing: (a) the current situation of nursing care among the gay and lesbian older persons; (b) the meaning of care needs from their perspective; and (c) the Gay Care Center's tailored approach and services to meet their care needs. Multiple sources were utilized to collect data: focus group discussions, in-depth interviews, and observations. Data were then analyzed using Mayring's qualitative content analysis. Findings revealed that caring practices for older gays and lesbians could only be effective, satisfying, and holistic when the meaning of their individual needs are sensitively listened to, understood, and met. This led to the coined term HUMANistic caring, a new approach that emerged as their preferred mode of care. It is recommended that extensive gender-care training be conducted among gerontological nurses, and this be incorporated in the nursing curriculum to ensure that the provision of care is safe, respectful, humane, and just. **(Author's abstract)**

Keywords: *Humanistic caring, Gay-friendly care hub, Gerontology nursing, Gender-care disparity, Care approach, PAR, Medicine*

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0260

Hypertension as a prognostic factor in the prediction of mortality in patients with COVID-19: A systematic review and meta-analysis

San Pedro, Patricia Anne C. , San Miguel, Maria Emelyn P. , San Juan, Mary Ann D. , San Felipe, Pia Loraine P. , Samonte, Louriz Maveric S. , Salvacion, Vita Iris A. , Panalondong, Jonaima S. , Palmares, Nina Rose G. , Palaspas, Maria Angelica C. , Paguio, Uriel Gem A. , Pagdanganan, Carmela D., Sanchez, Izza Anamiel V. , Juangco, Jose Ronil

Introduction Hypertension was identified by the CDC to be one of underlying medical conditions that might pose an increased risk for severe illness from COVID-19. This study aimed to determine the effect of hypertension on the morbidity of COVID-19 patients to help physicians in adjusting the management plans for a better prognosis.

Methods Participants included all COVID-19 patients with hypertension as a pre-existing medical condition. Studies were selected based study design, participants, exposure, outcome, timing, setting and language. MEDLINE and CINAHL, ScienceDirect, Clinical Key, OVID database, Wiley Online library, and UpToDate were searched. The risk of bias in selection, comparability and outcomes were evaluated. All information gathered were collated and evaluated using the Newcastle-Ottawa Quality Assessment Scale and CEBM.

Results There was a statistically significant positive association between mortality and hypertension as a prognostic factor (OR = 5.25, 95% CI 2.42, 11.40; HR = 2.21, 95% CI 1.75, 2.80). Individual studies all showed a significant relationship between hypertension and mortality in COVID-19 patients with OR ranging from 1.75 to 28.88, and HR of 1.49 to 3.32.

Conclusion Hypertension as a comorbid condition is a significant prognostic factor in the prediction of mortality in hospitalized COVID-19 patients. **(Author's abstract)**

Keywords: *COVID-19, Hypertension, Mortality, Prognosis, Medicine*

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0261

Ibaloy Traditional Pregnancy and Child Care Practices in Bokod, Benguet *Basatan, Christ*

The Cordillera is home to indigenous pregnancy and childcare practices. This study describes the Ibaloy traditional health practices of which little are known. It seeks to contribute to the literature about indigenous pregnancy and childcare practices. This two-year ethnographic study was conducted in Mangagew, Poblacion, Bokod, Benguet. Data was gathered through field observations and interviews with mothers, elders, and traditional birth attendants. The findings showed that Ibaloy are strongly connected to their traditional beliefs and possess strong family and community support for pregnant women and their children. Most of the traditional beliefs and practices of caring are still observed, alongside modern healthcare principles and practices. There are myriad of factors that influence Ibaloy health care decisions apart from their traditional beliefs and practices. Achieving health for these vulnerable groups requires multi-sectoral linkages and active community participation. The result of this research serves as a basis for culturally appropriate evidence-based care for both the Ibaloy and similar groups, and as reference for the Ibaloy's slowly fading traditional beliefs and practices. **(Author's abstract)**

Keywords: *Ibaloy, Childcare, Healthcare, Indigenous health practices, Pregnancy, Traditional practices, Medicine*

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Idiopathic Pyoderma Gangrenosum a Rare Cause of Ulcerative Lesion in the Leg: A Case Report

Robles, Jeremyjones F. , Vergara, Jovy Louie Anth

Background: Pyoderma gangrenosum is a rare ulcerative skin disease that can present as an ulcerative skin disease with the prominence of pain. The pathogenesis may be related to disruptions in the immune pathways. Targeted therapy is lacking and current treatment is largely empirical and consists of corticosteroids and cyclosporine first line. Early recognition can improve clinical outcomes.

Case: This case is a 67-year-old male diabetic who was admitted for a progressive ulcerative lesion on the right leg. Arterial Doppler studies and CT angiogram of the right lower extremity were normal. Blood and deep wound cultures of the lesion showed *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Multiple antibiotic regimens were given with no improvement of the ulcerating lesions of the leg. Pain on the lesion remained persistent. The tissue biopsy of the lesion taken during debridement revealed that it was a pyoderma gangrenosum with dystrophic sclerosis. Oral prednisone at 1 mg/kg was added to the regimen which improved pain but the lesion did not improve. The persistence of the pain and progression to sepsis during the hospital course prompted the decision to do an above-knee amputation of the right leg. He was discharged improved.

Conclusion: Pyoderma gangrenosum is a rare non-infectious cause of an ulcerative lesion in the lower extremity. Diabetes is a strong risk factor for this disease. The course is prolonged with the possibility of secondary infections. Upon histopathologic confirmation, an anti-inflammatory regimen could help improve outcomes. **(Author's abstract)**

Keywords: *Pyoderma gangrenosum, Diabetic foot, Leg ulcer, Inflammation, Anti-bacterial agents, Amputation, Medicine*

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NP

Impact of Frailty in Non-Surgical Fractures in Elderly Population with Vitamin D Deficiency: How Much Is Little?

Hernandez, Amairani Sierra , GÃ³mez-PiÃ±a, Juan

Vitamin D is associated to bone health and reduction in the incidence of fractures. However, this condition remains increasing specially during elderly, predisposing to frailty and increasing hospital stay days. The reduction in vitamin D levels could explain the high incidence of fractures as well as mortality. This is an observational transversal retrospective study. This study aimed to determine the relation between frailty and fractures in patients with low vitamin D levels. We found 914 patients with vitamin D levels; however, we included just 319 patients who had previous imaging study, vitamin D determination, and confirmed diagnosis of frailty. Patients with surgical fractures, chronic kidney disease or vitamin D supplementation were excluded from this study. The main fractures related to long hospital stay (> 5 days), frailty, and low vitamin D levels were clavicle fracture; however, scaphoids fracture was related to shorter hospital stay and higher vitamin D levels. Most of fractures happened over 60 years old in women and under 60 years old in men. Vitamin D deficiency was related to long hospital stay in all fractures, despite the deficiency, vitamin D levels over 12 ng/mL were related to better outcomes in all

patients; however, serum vitamin D levels related to the incidence of fracture were lower than reported in literature. **(Author's abstract)**

Keywords: *Vitamin D, Frailty, Deficiency, Fractures, Hospital stay, Medicine*

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0264

The Importance of Encouraging Child Development *Trakooltorwong, Pimka*

Quality child growth and development are important tools in assisting today's children to become the adults of the future. Hence, developmental delays in young children have an impact not only on a child's abilities to learn new skills, but also in the opportunities of the greater community or society. In this regard, parents and caregivers are the most well-equipped to prevent the child from experiencing developmental delays. Children will learn to trust the person who sensitively interacts with them and this trust provides a foundation for future learning, growth, and development. This paper looks at the importance of encouraging child development through the parents or guardians of children, since they are inevitably linked to a child's learning, and they know their own children better than anyone else. Parents and guardians who do not have the skills required to monitor and encourage the development of young children can and should be trained by professionals. This research reveals that training parents and guardians to use the Developmental Surveillance and Promotion Manual in monitoring and encouraging development of young children is a very important way to prevent future developmental delays. **(Author's abstract)**

Keywords: *Child development, Developmental delays, Quality child growth, Medicine*

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0265

Improvement in Specimen Adequacy with Ultrasound-guided Fine-Needle Aspiration Biopsy (FNAB) of Thyroid Nodules Using Rapid On-site Evaluation (ROSE): A Cross-sectional Study

Alcazaren, Elizabeth Ann S. , Chua, Francis Bryant G. , Dungca, Pia Pam

Background. Fine-needle aspiration biopsy (FNAB) is the most accurate and cost-effective method to evaluate thyroid nodule for possible malignancy. However, an adequate specimen is required for proper examination by a pathologist. Rapid on-site evaluation (ROSE), a service typically provided by pathologists, is the real-time evaluation for adequacy of FNAB smears which can help improve adequacy rates by allowing the submission of additional thyroid samples when the submitted samples are inadequate. This study aims to investigate if ROSE done by trained Endocrinologists can improve specimen adequacy in our patients.

Methods A total of 192 patients were included in this study and were divided in two groups: a ROSE group (n=96) and a non-ROSE group (n=96). In the ROSE group, the smear of thyroid aspirate was evaluated for adequacy by a trained Endocrinologist in real time. In the non-ROSE group, specimens are directly sent to the Pathologist.

Results ROSE done by Endocrinologists had 94% sensitivity, 46% specificity and 82% accuracy compared to a Pathologist. The adequacy rate under the ROSE group was 84.38% and 81.25% in non-ROSE group.

Conclusion Our study showed that ROSE can improve adequacy rate in our center. ROSE can also be used by physicians in the provinces who are performing FNAB of the thyroid without ultrasound guidance to improve specimen adequacy and lessen repeat biopsy. (**Author's abstract**)

Keywords: *Rapid on-site evaluation (ROSE), Thyroid fine-needle aspiration biopsy, FNAB, Specimen adequacy rate, Medicine*

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0266

***In Silico* Assessment of the Role of Iridoid in the Treatment of Zika and Influenza Virus Infection**

Dobhal, Kiran , Srivastava, Saloni , Mahato, Arun Kumar , Jakhmola, Vikash , Prinsa, , Saha, Supriyo, Kawsar, Sarkar

Iridoids have been showing anticancer, antiproliferative, cardioprotective, hepatoprotective, antihyperglycemic, and immune stimulatory activities. Zika and H3N2 viruses belong to the RNA virus category, which was responsible for the reoccurrence of epidemics and pandemics in the last decades. Both infections are the type of zoonotic diseases that transmit very fast. In this manuscript, we selected 59 iridoids (iridoid glycosides, secoiridoids, bis-iridoids, and nonglycosidic iridoids) and performed molecular docking (MD) interaction studies against PDB ID: 7VLG (Zika virus receptor) and PDB ID: 6EUY (H3N2 influenza virus receptor). MD interaction revealed that 2'-O-(4-methoxycinnamoyl) mussaenosidic acid and 6-O-trans-p-Coumaroyl-8-O-acetylshanzhiside methyl ester showed a maximum dock score of -8.6 kcal/mol and -9.2 kcal/mol against PDB ID: 7VLG and PDB ID: 6EUY, respectively. The MD interaction data was confirmed by MD simulation and MMPBSA analysis. MD simulation data showed that RMSD and RMSF were within the limit. MM/PBSA analysis data showed that free binding energy of -21.398 kJ/mol and -127.169 kJ/mol observed with 2'-O-(4-methoxycinnamoyl) mussaenosidic acid-7VLG and 6-O-trans-p-Coumaroyl-8-O-acetylshanzhiside methyl ester-6EUY, respectively. ADMET studies showed that both the final molecules were nontoxic in nature, but they required modification during formulation development. These data confirmed that if we reroute these iridoids toward Zika virus and influenza (H3N2) strains, it will be beneficial for mankind. (**Author's abstract**)

Keywords: *ADMET, Influenza H3N2, Iridoids, MD simulation, MMPBSA, Molecular docking, Zika virus, Medicine*

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0267

Incentivizing (and Disincentivizing) Mothers to Utilize Maternal Health Services: A Focus Group Study

Pagatpatan, Jr., Celso , Perez, Amihan, Ramirez, Caroline

Background. In ensuring access to maternal health services, various strategies toward safer health practices and improved health service delivery are important ingredients to eliminate avoidable maternal deaths. A recent household survey showed that access to antenatal care (ANC) (89%) and facility-based delivery (FBD) (82.4%) in the Eastern Visayas region is significantly high, despite the extensive damage to over 500 health facilities caused by Typhoon Haiyan in November 2013. Postpartum care (PPC), however, was relatively low (37.4%). As these findings needed further elaboration, a qualitative study using focus groups was conducted.

Method. The focus groups method was utilized to elicit responses from the mothers, BHWs, and midwives to explain what contributed to the high ANC visits, high FBD, and low PPC. Sixteen focus groups were conducted in the local dialect (Waray and Cebuano), and all discussions were audio recorded. Focus groups data were transcribed and subsequently translated to English text, then reviewed and validated by socio-linguistic academics from the region. Other data sources included debriefing session reports and expanded field notes. Nvivo 10 software was used in the coding process and data management. The data analysis referred to the principles of thematic analysis.

Results. The findings showed that incentives in the form of free maternal services and cash grants drive mothers to go to the health facility for antenatal care and facility-based deliveries. The free services were provided by PhilHealth (the country's social health insurance), while cash grants were awarded through the government's conditional cash transfer program and other community partners. Mothers were provided with some financial risk protection through these financial incentives. The disincentives came in the form of local ordinances, which prohibited home births. Penalties included fines for both mother and birth attendant when the mother was found to deliver outside the health facility. The unintended stigma, shame, and fear that developed in response to these ordinances also deterred home births. The significantly low use of PPC services in the health facility was attributed to the lack of advices given to mothers regarding the need for follow-up care after delivery. It is also noted that there are no incentives for PPC, which may contribute to its low rates. The role of the community health workers and midwives were to inform and educate the mothers on these incentives and disincentives. However, these incentives and disincentives are extrinsic motivators and are deemed insufficient to provide long-term impact.

Conclusion and Recommendations. The implementation of the incentives and disincentives in Eastern Visayas has increased rates of ANC and FBD. The presence of these in the current environment has initially facilitated behavior change, shifting home births to facility births. However, we argue that financial incentives, with a lack of intrinsic motivation, may be insufficient to sustain long-term impact. Disincentives, in the form of local ordinances, forced mothers instead to seek care in facilities. Such an approach may eventually become less effective over time. Incentives and disincentives are both demand-side factors, and to sustain change, concurrent improvements in the supply end need to be implemented. The capacity of facilities to absorb the increased demand should be in place to provide positive experiences for mothers in the health facilities. (**Author's abstract**)

Keywords: *Antenatal care, Facility-based delivery, Postpartum care, Home-based delivery, Access, Medicine*

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0268

Increased Intraocular Pressure in Patients with Carotid-Cavernous Fistula Seen at a Tertiary Eye Care Center

FlorCruz, II, Nilo Vincent dG., Concepcion, Patricia A

Objectives: We described the demographic and clinical profiles of patients with carotid-cavernous fistula (CCF), determined the prevalence of increased intraocular pressure (IOP), and described the IOP outcomes after endovascular treatment.

Methods: This was a single-center, retrospective review of records of patients with clinical signs and radiologic evidence of CCF from January 2012 to December 2017. Outcome measures included the prevalence of increased

IOP in those with CCF, mean and range of IOPs, average number of IOP-lowering medications needed, and percentage of eyes with normal, controlled, and uncontrolled IOP before and after endovascular intervention.

Results: Ninety-six (96) eyes of 92 patients with radiologic evidence of CCF on 4-vessel cerebral angiography were included. Fifty-nine (59) percent were between the ages of 20 to 39 years. Majority (65%) were males. Direct CCFs accounted for 70% of cases. Increased IOP was the third most common ocular sign with a prevalence of 78%, ranging from 10 to 56 mmHg (mean 20.3 ± 8.0). The average number of antiglaucoma medications for IOP control was 2. Eleven (11) underwent definitive management for CCF. Post-treatment, 33% of 13 eyes had normal, 27% controlled, and 40% uncontrolled IOPs.

Conclusion: There was a high prevalence of increased IOP in patients with CCF. Those who did not achieve IOP control should be referred for endovascular intervention to prevent serious complications, including secondary glaucoma. **(Author's abstract)**

Keywords: *Secondary ocular hypertension, Secondary glaucoma, Intraocular pressure, Carotid-cavernous fistula, Episcleral venous pressure, Medicine*

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0269

Integration of Geriatric Content in Entry-Level Physical Therapy Education in the Philippines: A Pilot Study *Perez, Charlemaine De*

Introduction: Physical therapy (PT) practice is expected to dynamically respond to the growing needs of older adults. Currently, there is paucity in meeting the demands of the aging Filipino population that may be linked to the status of undergraduate PT education. To date, there are no known systematically analyzed data that explores the breadth of geriatric content in the local BSPT programs. This study aimed to describe the integration of geriatric-related content in the pre-clinical and clinical entry-level PT curricula.

Methods: Descriptive cross-sectional research design using survey instrumentation was conducted among heads and PT educators in higher educational institutions and healthcare institutions located in the National Capital Region, Philippines from December 2015 to March 2016.

Results: Fifty-two responses from a total of 87 physical therapists were included in data analysis after screening. Many of the participants (>50%) determined that pre-clinical and clinical geriatric-related PT competencies were always (81-100% of the time) and often (61-80% of the time) taught. Among pre-clinical and clinical competencies, clinical attitudinal skills were the most taught. Clinical practical skills, pre-clinical practical skills, and pre-clinical knowledge competencies were never taught (0-20% of the time). Majority of the participants (93.3%) perceive the importance of integrating geriatric PT-related content in the curriculum but, only 65.8% perceive that the integration is sufficient.

Discussion: The integration of geriatric-focused content on psychosocial changes with aging, multifactorial conditions, airway clearance techniques, use of best available evidence, interprofessional collaboration, and on clinical training is insufficient despite its importance. The incongruity may be influenced by lack of intentional exposure and role-modeling to students. The study findings should be interpreted with caution because of low sample size. Further research is recommended to understand the depth of integration of geriatric-related content in entry-level PT programs in the Philippines. **(Author's abstract)**

Keywords: *Education, Physical therapy, Geriatric, Medicine*

The Interplay of C.P.A. in Elderly Care Towards Client Care Satisfaction

Nemenzo, Endrex P. , Palompon, Da

This study explored the interplay of the care culture (C), caring process (P) and care agent (A) in the care of older adults towards care satisfaction and quality of life. Two elderly care facilities (public and private) were considered as cases of this study. Using case study design, four elderly clients were asked to answer the Modified Patient Satisfaction Questionnaire, and five care facility personnel were interviewed and observed. The cross-case analysis derived the themes: a) a caring governance is a felt privilege for the elderly; b) housing arrangement: security or vulnerability?; c) How did you take care of me?: Its influence on patient care outcomes; and d) Elderly care provider: What am I?. The landscape of elderly care is a combination of the environment, culture, process and the agent who made the care more effective through patient outcomes and satisfaction. These factors have interacting relationship which one to the other but ultimately leads to a question of the elderly clients' present disposition and conditions. **(Author's abstract)**

Keywords: *Elderly care, Care culture, Care process, Care agent client care satisfaction, Medicine*

Juvenile Onset Open-Angle Glaucoma in a Large Family in Cebu, Philippines

Siguan-Bell, Christine , Torregosa, Justine

Objective: This study described the clinical profile of a four-generation Cebuano family with juvenile-onset open-angle glaucoma (JOAG).

Methods: This is a case series conducted in the out-patient department of Cebu Velez General Hospital. Thirtyeight (38) members in a four-generation family from the northern part of Cebu province were investigated. General medical and ophthalmologic histories were taken. Complete ophthalmologic examination was done.

Results: Forty-two (42%) percent of participants examined had increased intraocular pressures (IOP); 15 were diagnosed with JOAG, one had ocular hypertension. There were more females than males affected. Mean age when symptoms were first noted was 14.56 ± 6.63 years and mean age at diagnosis was 16.3 ± 7.84 years. The most common initial symptom was rainbow or halos around lights (87.5%). Mean refraction was -3.09 ± 2.54 diopters for both eyes. Mean IOP on examination was 24.56 ± 20.17 mmHg. Gonioscopy showed open angles with flat iris plane. All affected participants underwent medical treatment and 69% needed surgical interventions.

Conclusion: This family demonstrated the typical JOAG phenotype consisting of early age of onset, strong family history with an autosomal dominant pattern of inheritance, myopia, open angles, and increased IOP refractory to medical treatment. **(Author's abstract)**

Keywords: *Glaucoma, Juvenile open-angle glaucoma, Ocular hypertension, Hereditary, Phenotype, Pedigree, Medicine*

Knowledge and Attitude on the Nurse Practitioner Role of Nurses and Physicians in Two Tertiary Hospitals in Metro Manila

Duller, Sa

The role of the nurse practitioner (NP) has been successfully implemented globally including in some Southeast Asian countries. However, the Philippines has yet to enact this expanded role, notwithstanding being faced with the common factors influencing the evolution of the NP role indicated in the literature. With the proposed repeal of the current Philippine Nursing Law to include Advanced Practice Nursing, this study aimed to determine the knowledge and attitudes of nurses and physicians in the Philippines on the NP role. Sixty-six participants (41 nurses and 25 physicians) completed the survey on the knowledge and attitude on the NP role, conducted in two tertiary-level hospitals in Manila. Nurses have statistically higher scores on items regarding general understanding of the NP role, and on the difference of the NP from senior nurses. However, the difference of overall survey scores on the knowledge and attitude on the NP role between nurses and physicians was statistically non-significant. These results support the need to raise awareness on the role of the NPs by educating nurses, physicians, and other healthcare professionals in the Philippine setting. **(Author's abstract)**

Keywords: *Advanced practice nursing, Nurse practitioner, Knowledge, Attitudes, Medicine*

Knowledge and Attitudes towards COVID-19 Infection and Anxiety Levels of Nigerian Youths Regarding the COVID-19 Pandemic

Chidimma, Nwankwo, Chullapant, Kanokwan, Ede, Sunday Stephen, Emeka, Anyiam Felix, Mary, Aroh Chinazaekpere, James, Batholomew Chibuike, Michael, Uhwo Ikec

Objectives. Youths can function as agents of change by disseminating essential information, but they are also considered a vulnerable group in the COVID-19 pandemic. Literature on COVID-related knowledge, attitude, and anxiety has not focused comprehensively on youths. This study assesses the knowledge, attitudes, and anxiety level of youths in eastern Nigeria during the COVID-19 pandemic.

Methods. We conducted a descriptive cross-sectional study using an online survey among young people between the ages of 18 and 35 years in southeastern Nigeria during the COVID-19 pandemic. We analyzed data using the Statistical Package for Social Science (SPSS) version 25 software. We used descriptive statistics, the Chi-square test, and bivariate and multivariate logistic regression analyses to measure the associations. A p-value of < 0.05 was considered statistically significant at a 95 percent confidence level.

Results. We included 397 participants. Majority of the study participants (88%) had a high level of knowledge about COVID-19. Around 68% showed a good attitude toward COVID-19 prevention, overall low anxiety related to the COVID-19 pandemic was proportionally higher at 57.43%. Knowledge and educational level were statistically

significantly associated with anxiety levels related to the COVID-19 pandemic.

Conclusion. The young adults had a good knowledge of the COVID-19 transmission and symptoms, positive attitude, and low anxiety levels. Those with higher educational levels had good knowledge and lower anxiety level. Public health and mental health experts can use this material to help reduce high levels of anxiety among the vulnerable population affected by the pandemic. (**Author's abstract**)

Keywords: COVID-19, Knowledge level, Attitudes, Anxiety level, Nigerian youths, Medicine

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0274

Knowledge and Compliance to Standard Precautions and General Self Efficacy among Nurses in a Tertiary Hospital *Gatbunton, Crisa*

Purpose: This study aimed to evaluate the level of knowledge on Standard Precautions, level of compliance to Standard Precautions, and General self-efficacy of nurses in a tertiary hospital. Also, this study aimed to identify the relationship between those variables.

Design and Methods: A descriptive correlational research design was utilized in the study. 168 nurses from the tertiary hospital from Nueva Ecija, Philippines were recruited to complete a questionnaire about their knowledge and compliance to Standard Precautions and their General self-efficacy. The data was coded, encoded, and statistically analyzed using PSPP 1.2.0 (GNU Project. New York City, New York, USA).

Results: Findings indicated that nurses have good knowledge and high compliance concerning standard precautions; also, findings showed that nurses have a moderate level of general self-efficacy. However, there was no remarkable relationship between the level of knowledge, level of compliance in Standard Precautions, and general self-efficacy.

Conclusions: Although the researcher concluded a high level of knowledge among nurses, statistical analysis showed no relationship when correlated with compliance. This concluded that knowledge of Standard Precautions does not necessarily influence compliance and its application. Also, findings inferred that a moderate level of general self-efficacy did not act upon the level of compliance of nurses to Standard Precautions. (**Author's abstract**)

Keywords: Standard Precaution, Compliance, Knowledge, General Self-efficacy, Medicine

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NP

0275

Knowledge and Preference of Filipino COPD Patients on Advance Care Planning: A Cross-sectional Survey *Jorge, Manuel C. , Angeles, Roland Reuben B. , Abat, Marc Eva*

Objectives. To explore the current experiences and perspectives of patients with chronic obstructive pulmonary disease (COPD) with advance care planning (ACP).

Methods. A cross-sectional survey was conducted among patients diagnosed with COPD in the Philippine General Hospital. Results were illustrated using descriptive statistics.

Results. A total of 90 patients were interviewed and included in the analysis. Nearly all patients were unfamiliar with the terms ACP (95.55%), end-of-life care (99.89%), and do-not-resuscitate order (100%). The majority expressed

a desire to have ACP discussions (94.44%) which were not viewed as distressing and were deemed beneficial (96.67%). Patients who were employed were more likely to express readiness to sign legal papers. Patients living with their nuclear family or living alone, and those with higher COPD assessment test (CAT) scores were more likely to relegate health care decisions to their doctors.

Conclusion. Most patients with COPD in our cohort are unfamiliar with ACP and have not received ACP discussions. Most think that it will improve healthcare and quality of life. Some demographic and clinical factors may make patients more likely to engage in ACP-related activities. (Author's abstract)

Keywords: *Medicine, Advance care planning, Chronic obstructive pulmonary disease, Palliative medicine*

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0276

Knowledge, Attitude, and Intention to Practice Pre-Marital Testing Among Midwifery Students in Vietnam

Nguyen, Tram Thi My, Nguyen, Nhan Thi, Nguyen, Chi

Background: Hereditary diseases are considered one of the most common causes of death and morbidity in infants and children. It significantly burdens the health system, family, and society. Pre-marital testing is one of the most proactive and effective ways to prevent hereditary diseases, infectious diseases, and congenital abnormalities.

Purpose: To examine the level of knowledge and attitudes regarding pre-marital testing and the intention to practice pre-marital testing; and, To identify the correlation between knowledge, attitudes, and intention to practice pre-marital testing among midwifery students.

Methods: A descriptive correlational study was conducted from May to July 2020 among 150 midwifery students at the University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam. The research consists of a questionnaire with four main parts: demographic characteristics, knowledge about pre-marital testing, attitudes toward pre-marital testing, and intention to practice pre-marital testing. Descriptive statistics and univariate analysis were used for data analysis. The significance level of the statistical test was set up at $\alpha = .05$.

Results: The average age of students was 21.73 years old, most of them were unmarried (98%). More than three-quarters (80.7%) of them had good knowledge about pre-marital testing and (88.7%) of them had a positive attitude towards pre-marital testing. Most students (94.7%) have an intention to use a pre-marital test and believe in its benefits. Knowledge was positively correlated with intention to practice pre-marital testing ($X^2 = 5.10$, $p = 0.02$). Likewise, attitude toward pre-marital testing was positively correlated with the intention to practice pre-marital testing ($X^2 = 12.57$, $p < 0.001$).

Conclusions: The findings emphasized the important role of health education which is a keystone in improving pre-marital knowledge, attitudes, and the practice of pre-marital testing to prevent hereditary diseases and improve people's health. (Author's abstract)

Keywords: Knowledge, Attitudes, Practices, Pre-marital testing, Midwifery students, Medicine

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0277

Knowledge, Attitudes, and Practices of Telemedicine in Ophthalmology in a Tertiary Hospital: A Cross-Sectional Survey

Valero, Sherman O. , Vega, Angelica Antoine

Objective: The purposes of this study were to (1) describe the perceptions and practices of telemedicine among ophthalmologists in a tertiary hospital; and (2) evaluate knowledge, satisfaction, and perceived patient outcomes in using telemedicine to provide eye care in a time of a global pandemic.

Methods: This was a descriptive, cross-sectional study using a self-administered online survey. Thirty-two (32) ophthalmology consultants and residents-in-training in a single tertiary, private hospital who practiced telemedicine participated in this study. Descriptive statistics was used to summarize the data. Responses to open-ended questions were analyzed thematically.

Results: The respondents were somewhat knowledgeable (75%) and somewhat confident (72%) in using telemedicine. Respondents strongly conveyed their satisfaction with telemedicine outcomes (56%). Majority also believed that their patients were satisfied with teleconsults (69%). Majority agreed that telemedicine can be effective for select types of care [i.e., chronic condition management (66%), follow-up care (62%), and acute non-emergency care (53%)]. Telemedicine also proved to be a boon during a pandemic due to its convenience (59%) and efficiency (63%). However, it is limited by the imperative need for face-to-face consults (69%) and technological constraints (44%).

Conclusions: Telemedicine was perceived to be a valuable solution during the present pandemic due to its convenience, safety, and ability to provide remote diagnosis and management of urgent and non-urgent cases. Although the current practice of telemedicine still has plenty of room for improvements in the standardization of training, connectivity and technological constraints, and addressing liability concerns, it can serve as an adjunct to face-to-face consultations to provide optimal care for patients. **(Author's abstract)**

Keywords: Telemedicine, COVID-19, E-health, Teleophthalmology, Pandemic , Medicine

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0278

Knowledge, Attitudes, Risk Perceptions, and Intention toward COVID-19 and COVID-19 Vaccination among Adults in the City of Manila, Philippines

Ramos-Mortel, Buenalyn Teresita M. , Lomboy, Marian Fe Theresa C. , Estrada, Crystal Amiel M. , Roxas, Evalyn A. , Gregorio, Jr., Ernesto R., Palatino, Mayli

Vaccination is a crucial strategy to prevent new COVID-19 infections; however, it will only be optimally effective if people, especially those who are at a higher risk of

COVID-19 infection, will not hesitate to receive the vaccines. The current study utilized an analytical cross-sectional study design to measure the knowledge, attitudes, risk perceptions, and intention toward COVID-19 and COVID-19 vaccination among adult residents of the City of Manila, Philippines. A total of 385 respondents participated in this study. A self-administered questionnaire was used to measure the aforementioned study variables. Frequencies and proportions were calculated to describe the level of COVID-related knowledge, attitudes, risk perceptions, and intention to receive the COVID-19 vaccination. Logistic regression analyses were done to determine the factors associated with the outcome variable (intention to receive the COVID-19 vaccine). The results show that a majority of the respondents had good knowledge about COVID-19, with news media as the main source of COVID-related information. Around 40% expressed hesitance and concerns over the safety of the vaccines. Catholics, those with at least a monthly income of 5,000 pesos, who had good knowledge of prevention, positive behavioral intention, and positive perceived benefits of COVID-19 vaccination were more likely to have the intention to get vaccinated. The study highlights the importance of correct, easy-to-understand, and accessible information so that individuals can make informed choices about their health, especially during the COVID-19 pandemic. Stakeholders must collaborate in developing effective strategies focused on addressing the public's hesitancy and building trust toward COVID-19 vaccines and the government's vaccination program. (Author's abstract)

Keywords: *Attitudes, COVID-19, Knowledge, Philippines, Risk perception, Vaccine, Medicine*

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0279

Landmark Studies in Neuro-Ophthalmology

Cruz, Franz Marie, Subramanian, Prem S

High-quality clinical evidence, derived from well-designed and implemented clinical trials, serves to advance clinical care and to allow physicians to provide the most effective treatments to their patients. The field of ophthalmology, including the subspecialty of neuro-ophthalmology, abounds with such high-quality clinical trials that provide Level 1 clinical evidence. This review article summarizes the research design, key findings, and clinical relevance of select monumental clinical studies in neuro-ophthalmology with the primary goal of providing the readers with the rationale for current standard of care of various neuro-ophthalmic diseases. This includes the Optic Neuritis Treatment Trial, Ischemic Optic Neuropathy Decompression Trial, Idiopathic Intracranial Hypertension Treatment Trial, Rescue of Hereditary Optic Disease Outpatient Study, and Controlled High-Risk Avonex® Multiple Sclerosis Study (Author's abstract)

Keywords: *Optic Neuritis Treatment Trial, Ischemic Optic Neuropathy Decompression Trial, Idiopathic Intracranial Hypertension Treatment Trial, Rescue of Hereditary Optic Disease Outpatient Study, Controlled High-Risk Avonex Multiple Sclerosis Study, Medicine*

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0280

Landmark Studies in Uveitis

Cruz, Franz Marie, Onghanseng

This paper provides the summaries on nine (9) important and clinically relevant publications in the field of uveitis. The first is on the standardization of uveitis nomenclature, more popularly known by its acronym - SUN, which was a result of an international workshop participated by uveitis experts in 2004. Five (5) papers were large, multicenter, clinical trials that demonstrated safety and efficacy of two (2) corticosteroids delivery devices (dexamethasone implant [Ozurdex] and fluocinolone acetonide implant [Retisert™]) and one (1) immunomodulatory drug (adalimumab). The POINT trial compared various delivery approaches when using corticosteroids for the treatment of uveitic macular edema. The FAST trial compared two (2) durable and commonly-prescribed steroid-sparing immunosuppressants, methotrexate and mycophenolate mofetil, for the treatment of non-infectious uveitis. Lastly, the SITE study, which was a large retrospective cohort study, determined the risks of overall and malignancy-related deaths among patients with inflammatory eye diseases receiving systemic immunosuppressants. Findings of these studies provide basis and rationale for the care and management of patients with uveitis and lay the groundwork for future research. **(Author's abstract)**

Keywords: *Uveitis, Clinical trial, Review, Inflammatory eye disease, Corticosteroids, Medicine*

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0281

Lessons from Asia: A Review of Five National Responses to the COVID-19 Pandemic *Palaganas, Erli*

The outbreak of COVID-19 triggered various responses from nations in an effort to control its spread. This review aimed to assess the responses of China, South Korea, Japan, Singapore, and the Philippines, and identify effective strategies to address the pandemic's incidence and mortality rate. Using a descriptive review of existing literature, their responses were evaluated using the World Health Organization (WHO) Strategic Preparedness and Response Plan (SPRP) and the Sendai Framework for Disaster Risk Reduction (SFDRR), which outline long-term objectives of reducing viral transmission, and reducing disaster risks and losses respectively. The countries studied were able to engage and mobilize communities; find, test, and isolate cases; provide clinical care, and maintain essential health services. However, countries differ in implementation, mainly due to their varying Social Determinants of Health (SDH) and disparities in resources. The countries' common goal was to control COVID-19 and return to economic normalcy. This study showed that effective strategies in handling the pandemic contain the following aspects: 1) strategic preparedness by drawing from past experiences, 2) tactical restructuring of the healthcare system, 3) effective resource mobilization and management, and 4) effective use of communication and technology to engage with the public. The SFDRR global targets were clear long-term goals for countries to base their pandemic responses on. This could equip the countries with the right tools and policies for future disasters, including a pandemic. Glaring issues on countries' SDH should also be foremostly addressed. Economic inequality, communication gaps, and issues on governance are primary factors that hinder the effective management of the pandemic for countries. Policy makers and social development workers, including nurses, need to adopt a holistic framework in analyzing situations confronting their work such as disasters. **(Author's abstract)**

Keywords: *COVID-19, World Health Organization (WHO), Strategic Preparedness and Response Plan (SPRP), Sendai Framework for Disaster Risk Reduction (SFDRR), Medicine*

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0282

Level of Depression, Anxiety, Stress, and Coping Strategies among Filipino Healthcare Workers (HCW) with Confirmed Covid-19 Infection using the Filipino-translated Depression Anxiety Stress Scale (DASS) 21 and Filipino Coping Strategies Scale in Perpetual

Mangubat, Jill Henriett T. , Vista, Giovanni A. , Conopio, Arnel Y. , Banquirigo, Raym

Introduction: COVID 19 has become the most important public health issue today. It has the potential to significantly affect the mental health of frontline healthcare workers (HCW) putting them at a higher risk of developing psychological problems especially to those who acquired COVID19 infection.

Objectives: To determine the level of depression, stress, anxiety and coping strategies among Filipino HCWs with confirmed COVID-19 infection and its association with demographic and clinical profiles.

Study Design: Single center Descriptive study

Materials and Methods Consisted of 114 Filipino HCW with COVID 19 infection. Data were collected utilizing the Filipino translation of DASS 21 and Filipino Coping Strategy scale.

Results: There was a significant increase of HCWs with moderate depression, anxiety, and stress. A large proportion of the HCWs were also severely depressed, severely anxious and severely stress. Majority of the COVID19 positive HCWs were nurses accounting to 35%. More likely, the occupation was significantly associated with their degree of depression and stress. Hypertension associated significantly with elevated stress while having diabetes was instrumental for the depression, anxiety and stress. Moreover, appreciation was more felt at the workplace, then at home. While discrimination was prevalent in the community, workplace and social media. Religiosity ranked the most sought coping strategy.

Conclusion: The study has found that a large percentage of HCWs had moderate level and a notable portion of respondents had severe to extremely severe level in each of the psychological domains in which factors such as gender, occupation, comorbidities, area of assignment and disease severity have brought significant impact. Discrimination is prevalent in the community and surprisingly in the workplace. In contrast, appreciation was felt more at home and in the workplace. Religiosity was shown to be the top coping strategy among HCWs who tested positive. **(Author's abstract)**

Keywords: HCWs, COVID-19, DASS21, Medicine

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0283

Lip Trill Effects on Vocal Function, Vocal Pitch, and Harmonics-to-Noise Ratio: A Multiple Baseline Study of Three Vocally Healthy Females

Rotor, Esmerita R. , Chua-Lawas, Ma.

Background. The lip trill is a semi-occluded vocal tract exercise found to have positive outcomes on vocal parameters of healthy individuals after a single session. However, the effect of several lip trill sessions has not been studied.

Objective. This study investigated the effect of a 3- to 4-week lip trill exercise program on Maximum Phonation Time (MPT), Maximum Phonation Frequency Range (MPFR), Harmonics-to-Noise Ratio (HNR), and mean Speaking Fundamental Frequency (mean SFF).

Methods. Three vocally untrained healthy females with perceptually normal voices participated in a multiple-

baseline, single-case experimental research. Five to seven direct training sessions were randomly assigned. Self-implementation was encouraged thereafter. Participants were assessed on all outcome measures for 15 sessions. Data were visualized and inspected. Cohen's *d* was also derived using Standardized Mean Difference for single-subject research.

Results. Visual and statistical analyses revealed a decreased MPT when training was introduced, increased MPFR variability during the training phase, and increased stability in mean SFF post-training. Perceived effects include vocal freedom, decreased laryngeal stress, and vocal conditioning. Vocal outcomes in one participant yielded a significant effect on MPFR and mean SFF and a small effect on HNR.

Conclusion. There is evidence of lip trill effect on pitch control and vocal conditioning. Findings also revealed that motivation, exercise frequency, and adherence could contribute to positive gains in vocally healthy speakers. Further investigation in consideration of the study findings and limitations is warranted. **(Author's abstract)**

Keywords: *Lip trill, Prevention, Vocal health promotion, Acoustic vocal parameters, Normal voice, Medicine*

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NP

0284

Lithium as Pre-radioablative Treatment of Graves' Disease Complicated by Thyroid Storm and Methimazole-induced Agranulocytosis: A Case Report

Angeles, Roland Reuben B. , Tuazon, Cecileen Anne M. , Panuda, Jose Paolo P. , Ramiro, Valerie R., Isip-Tan, Iris Thi

Thyroid storm and thionamide-induced agranulocytosis are both rare and serious medical emergencies. We report a case of a patient in which these two rare events simultaneously occurred. A 33-year-old male, maintained on Methimazole for Graves' Disease, presented with fever, throat pain, and uncontrolled thyrotoxic symptoms. Methimazole was promptly discontinued. Thyroid storm was alternatively treated with lithium, hydrocortisone, and propranolol. Agranulocytosis was managed supportively with GCSF and empiric antibiotics. Lithium was maintained until after radioablation. When thionamides are contraindicated, lithium is a viable option for the acute management of thyroid storm and a bridge to definitive therapy. **(Author's summary)**

Keywords: *Lithium, Thyroid Storm, Methimazole, Agranulocytosis, Medicine*

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0285

Lived experiences of Filipino Red Cross volunteer nursing students in COVID-19 vaccination programs

Reyes, Seth Matthew C. , Quiambao, Ma. Wyrone G. , Oyos, Nicole Rose G. , Oasan, Anika Camille S. , Granado, Ysabela Gabrielle D., Palola, Ma. Denise

Introduction Student volunteers in COVID-19 vaccination activities help augment the health care workforce. However, there is a lack of literature that explores student volunteerism in the Philippines. This paper analyses the shared meanings of the lived experiences of volunteer nursing students during a pandemic.

Methods Student nurses who had joined Red Cross vaccination activities were recruited by purposive sampling and interviewed online using a pilot-tested interview guide with open-ended questions. Participants were recruited until data saturation. The data collected was analyzed using Colaizzi's Seven-Step Method.

Results The study has identified two main themes that describe the phenomenon of student- nurse volunteerism during COVID-19 vaccination programs: 1) personal motivation and 2) perceived benefits and outcomes. There were four sub-themes under personal motivation - desire for personal growth, intrinsic altruism, past experiences and involvement in volunteer work, and opportunity for advocating against vaccine hesitancy. Perceived benefits and outcomes had two sub-themes - sense of fulfillment in the act of volunteering and opportunity for actual nurse-patient interaction.

Conclusion: The findings from the study suggest that, despite the lack of experience of working as frontliners during the COVID-19 vaccination programs, nursing students volunteered due to personal motivations and perceived benefits and outcomes. **(Author's abstract)**

Keywords: *Volunteers, Students, Nursing, COVID-19, Vaccination, Medicine*

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0286

Long-Term Effect on Corneal Curvature of Corneal Collagen Cross-Linking for Keratoconus

Paningasan, Jr., Jess L. , Lim Bon Siong,

Objective: To determine the effect of corneal collagen cross-linking on the corneal curvature of eyes with keratoconus measured using an Oculus Pentacam® at 2 years and annually thereafter.

Methods: This was a descriptive, retrospective study involving patients with keratoconus who had undergone uncomplicated collagen cross-linking using the Dresden protocol from January 2012 to March 2016. Baseline measurements of best-corrected visual acuity (BCVA), maximum K value (Kmax), corneal astigmatism, anterior and posterior elevation map changes were recorded and compared with data taken at 2 and 3 years.

Results: This study included 32 patients (48 eyes) with a mean follow-up of 28.88 ± 6.23 months. Only 4 patients (6 eyes) had 3-year follow-up data with a mean follow-up of 42.83 ± 4.58 months. When all eyes were considered, significant changes were noted in Kmax, BCVA, and anterior and posterior elevation maps between baseline and 2-year follow-up. Specifically, there were significant decreases in Kmax ($p < 0.0001$) and anterior elevation ($p < 0.05$), and significant improvement in BCVA ($p < 0.01$) while posterior elevation ($p < 0.0001$) was found to have increased significantly at 2nd year follow-up compared to baseline. When only eyes with 3-year follow-up data was analyzed, only BCVA showed significant change ($p < 0.05$). Corneal astigmatism remained stable during the study period.

Conclusion: Two to 3 years after collagen cross-linking for keratoconus, corneal curvature parameters and BCVA showed improved and stable outcomes when compared to baseline. **(Author's abstract)**

Keywords: *Medicine, Keratoconus, Collagen crosslinking, Corneal curvature, Corneal astigmatism, Best corrected visual acuity, Anterior and posterior elevation maps*

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NP

Measurement of Anxiety and Depression Among Cancer Patients Seen in an Outpatient Clinic of a Tertiary Hospital Using the Validated Hospital Anxiety and Depression Scale – Pilipino Version (HADS-P)

Sacdalan, Dennis , Dela Rosa, Paolo , Samala, K

Background: Anxiety and depression, two of the most common affective disorders in cancer patients can affect one's compliance to treatment leading to poorer outcomes. Therefore, means of determining the psychological wellness of cancer patients through screening tools for anxiety and depression are an integral part of their management.

Objectives: 1) To measure the prevalence of anxiety and depression among cancer patients seen in an outpatient clinic of a tertiary hospital using the HADS-P. 2) To assess the impact of the following variables on symptoms of anxiety and depression: demographic, socio-economic, biological and health/clinical parameters.

Methodology: This is a cross-sectional analytic study involving 381 cancer patients seen in the outpatient clinic. Symptoms of anxiety and depression were measured using the HADS-P with an 11+ cut-off to identify possible cases of anxiety and depression. Univariate analysis, using STATA Version 13, was performed to identify correlates of anxiety and depression.

Results: The prevalence of anxiety, depression and mixed diagnosis (anxiety and depression) amongst this study population were 9.45%, 4.72% & 2.89%, respectively. The multivariate analysis described non-college graduates (OR=1.82, CI 0.80-4.14), poor performance status (ECOG 2-3) (OR=5.34, CI 2.44-11.71) and the newly diagnosed and with ongoing treatment patients (OR= 12.02, CI 2.67-54.04 and OR=4.04, CI 0.88-18.58, respectively) as possible correlates of anxiety. Patients with poor performance status and have moderate-severe pain were likely to experience depression (OR= 6.14, CI 2.14-17.62; OR= 2.78, CI 0.92-8.46, respectively).

Conclusions: There are several factors that can affect one's predisposition to having affective disorders. Clearly, there is a necessity to allocate resources for screening and treating affective disorders among cancer patients to improve their compliance, to achieve a more holistic approach in their management and ultimately, to improve their quality of life. (Author's abstract)

Keywords: *Anxiety, Depression, Cancer patients, Hospital Anxiety and Depression Scale – Pilipino Version (HADS-P), Medicine*

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NP

Melioidosis as a Rare Cause of Deep Surgical Site Infection in a Filipino Patient with Metastatic Spinal Disease: A Case Report

Lim, Bryan Albert T. , Soco, Marc Lawre

Background: Melioidosis is a potentially fatal disease caused by *Burkholderia pseudomallei*. Over a century after its discovery, there seems to be a paucity of reported cases in the Philippines relative to other countries where it is found to be endemic. This suggests that the true burden of melioidosis in the country is not well-defined. The rarity of the disease, its protean clinical manifestations, and the lack of pathognomonic features pose a great diagnostic challenge. Furthermore, the proper recognition of the organism is an extreme necessity as it is

intrinsically resistant to numerous antibiotics and requires specific long-term treatment.

Case: This is a case of a 49-year-old Filipino diagnosed with a metastatic spinal disease from a primary thyroid carcinoma and underwent posterior spinal decompression and stabilization. Revision of instrumentation was done following identification of an implant loosening. During the interim, wound dehiscence and infection developed. The patient was readmitted and underwent debridement of the lumbosacral spine. Wound cultures all yielded growth of *Burkholderia pseudomallei*. The patient received meropenem and then trimethoprim-sulfamethoxazole with ciprofloxacin during the intensive and eradication phase, respectively. Erythrocyte sedimentation rate and C-reactive protein were monitored and a significant reduction in both values reflected a good therapeutic response.

Conclusion: This is a rare case of a deep surgical site infection caused by *Burkholderia pseudomallei*. It is known that melioidosis is a potentially fatal infection but is under-reported in the Philippines. At present, further epidemiological studies along with an increased level of awareness of melioidosis are greatly needed to help define the true burden of illness and optimize patient management following prompt recognition. (**Author's abstract**)

Keywords: *Melioidosis, Philippines, Burkholderia pseudomallei, Medicine*

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0289

Mental Health and Coping Strategies of Filipino Healthcare Workers During the COVID-19 Pandemic

Oñate, Pureza, Uson, Arnold John, Inocian, El

Objectives. This study aimed to determine the mental health of Filipino healthcare workers (HCWs) in terms of their feelings and ability to cope during the COVID-19 pandemic and the factors that motivated them to continue their work.

Methods and Results. This was a cross-sectional, descriptive survey, single-center study, conducted in Perpetual Succour Hospital, Cebu City, Philippines, within 3 months from the declaration of the COVID-19 pandemic. Of the 215 respondents, almost 50% thought of quitting their job due to fear of getting infected with COVID-19 and transmitting the disease to their families. Ninety-four percent (94%) of HCWs were nervous and scared and 85% were experiencing physical fatigue and emotional exhaustion. Despite all these, 97% of HCWs felt that their service during the pandemic was part of their professional obligation and ethical duty. HCWs coped with the present pandemic by strictly following safety protocols and the assurance of the safety of their families helped reduce their stress. Family support is their most important source of motivation.

Conclusion. Filipino HCWs experience physical and emotional stress during the COVID-19 pandemic but were motivated to work because of their professional obligation with an assurance of safety and support from their family. (**Author's abstract**)

Keywords: *Mental Health, Coping Strategies, Stress, Healthcare Workers, COVID-19, Medicine*

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0290

Mental Health Outcomes among Health Care Workers exposed to COVID-19 in a Tertiary Government Hospital in Pangasinan

Sison, Teresita H. , Caramat, Donny M. , Villanueva-Misa, Ainstein Marie , Abalos,

Introduction: The Coronavirus disease 2019 (COVID-19) is a major health crisis that affected 32 million people to date and caused death to 990,000 individuals. The impact of this pandemic on the healthcare system took its toll especially to the healthcare workers and its effect on their physical and mental health. We aim to assess severity of generalized anxiety, depression and subjective distress among medical, allied and ancillary healthcare workers (HCWs) who handled COVID-19 patients.

Methodology: This is a cross sectional, survey-based study done from July 1 to August 31, 2020 involving healthcare workers who handled COVID-19 patients in a tertiary hospital in Pangasinan. The self-administered questionnaires used were the Generalized Anxiety Disorder- 7 for generalized anxiety, Patient Health Questionnaire (PHQ-9) for depression and Impact of Events Scale–Revised (IES-R) for subjective distress.

Results: A total of 417 of 450 contacted individuals completed the survey, with a participation rate of 92.67%. Majority were women (64.57%) and 53.24% were aged 19 to 30 years old. Sixty percent of the respondents were nurses, 25.9% were physicians and the rest were composed of medical technologists (6.47%), radiologic technologists (5.52%) and respiratory therapists (1.68%). Subjective distress was noted to be present in 253 (60.67%) healthcare workers followed by anxiety 224 (53.72%) and depression 184 (44.12%). Allied health professionals and male participants experienced anxiety the most as well as subjective distress. Depression was more severe among physicians (2 [1.85%]) and women (3 [1.1%]). Physicians and allied health professionals reported more severe degrees of mental health symptoms compared to nurses.

Conclusion: In this study, the proportion of HCWs who experienced subjective distress, generalized anxiety and depression were 60.67%, 53.72% and 44.12% respectively. Generalized anxiety and subjective distress were more severe in men and allied health professionals. Meanwhile, the more severe symptoms of depression were present in women and among physicians. (**Author's abstract**)

Keywords: COVID-19,, Coronavirus, Depression, Distress, Anxiety, Mental health, Healthcare workers, Medicine

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0291

Meta-analysis on the Role of Pregabalin in Fibromyalgia

Hamijoyo, Laniyati , Darmawan, Guntur , Rahmadi, Andr

Background: Fibromyalgia is a difficult-to-treat chronic musculoskeletal pain and tenderness syndrome. It is considered due to augmented pain processing in central nervous system. Interest in antiepileptic drugs, included pregabalin, for treatment of fibromyalgia is currently growing. This study aimed to investigate the effectiveness of pregabalin for fibromyalgia.

Methods: We conducted the study according to the meta-analysis PRISMA guideline. Relevant randomized controlled trials (RCTs) were identified from a search of PubMed and Cochrane databases. Quality of selected studies was assessed using Jadad score for randomized placebo-controlled trials (RCT). Primary outcome was pain score reduction (30% and 50% reduction) and secondary outcome was patient global impression of change. Statistical analysis was performed using Review Manager 5.3.

Results: Six international, multicenter, high-quality RCTs with 8-15 weeks duration of treatment met inclusion criteria. Four studies used different fixed dose (300 mg/d, 450 mg/d, 600mg/d) and 2 studies used titrated dose in evaluating the efficacy of pregabalin. There was statistically significant benefit of pregabalin over placebo in

mean pain score reduction [odds ratio (OR) 1.81, 95% confidence interval (CI) 1.56-2.10 $p < 0.00001$ in fixed dose pregabalin 30% pain reduction; OR 2.06 95% CI 1.66-2.56 $p < 0.00001$ in fixed dose pregabalin 50% pain reduction; OR 1.53 95% CI 1.10-2.13 $p < 0.01$ in titrated dose pregabalin 30% pain reduction; OR 1.80 95% CI 1.12-2.88 $p < 0.01$ in titrated dose pregabalin 50% pain reduction]. Pregabalin also demonstrated significantly better patient global impression of change than placebo. No heterogeneity was seen in most groups. No publication bias was observed.

Conclusion: Our study showed pregabalin monotherapy was effective for pain treatment associated with fibromyalgia. Further studies with longer treatment duration are needed to confirm the long-term effectiveness of pregabalin for fibromyalgia treatment. **(Author's abstract)**

Keywords: *Fibromyalgia, Pregabalin, Meta-analysis, Medicine*

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NP

0292

Metastatic Follicular Thyroid Cancer to the Scapula with Rotator Cuff Muscles Involvement: A Case Report

Robles, Jeremyjones F. , Chavez, Sienna R

Background: Follicular carcinomas occur frequently in women beyond the 5th decade of life as a slow-growing thyroid nodule. They are known to invade locally and metastasize distantly. Common sites for distant metastases are lungs and bones. The bones often involved are axial skeleton such as vertebrae, sternum, and skull. Metastasis to scapula is an infrequent presentation and skeletal muscle metastasis is extremely rare.

Methods: Case Report

Results: We present a case of metastatic follicular thyroid carcinoma that manifested as a large scapular mass on the right shoulder of a 65-year-old female patient. MRI of the right shoulder revealed a large lobulated mass with central necrosis and non-delineation of the 4 rotator cuff muscles. Biopsy of the scapular mass revealed an invasive metastatic follicular carcinoma. A thyroid ultrasound showed a significant right thyroid nodule. The patient underwent total thyroidectomy and subsequent right total scapulectomy with biceps tendon transplantation attached to the clavicle. Histopathologic reports from both operations are consistent with invasive follicular thyroid carcinoma. The patient underwent radioiodine therapy. Follow-up showed no evidence of any functioning metastasis.

Conclusion: Soft tissue metastasis is an uncommon initial presentation of follicular thyroid carcinoma. Synchronous metastasis to the bone and soft tissue particularly on the right scapula and surrounding muscles is a rare occurrence that warrants this report. **(Author's abstract)**

Keywords: *Thyroid carcinoma, Bone metastasis, Soft tissue metastasis, Medicine*

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NP

0293

Methotrexate for Sympathetic Ophthalmia: A Report of 3 Cases

Arcinue, Cheryl A. , Castillo, Teresita R. , Cruz, Franz Marie , Azarcon, Cor

Objective: To describe the visual and clinical outcomes of 3 patients with sympathetic ophthalmia treated with a combination of systemic steroids and methotrexate.

Methods: This was a small, descriptive case series.

Results: We reported 3 cases of post-traumatic sympathetic ophthalmia treated with steroids and methotrexate. Two patients had inciting eyes with no light perception on presentation, while one had a best-corrected visual acuity (BCVA) of counting fingers. The initial BCVA of the sympathizing eyes ranged from 20/20 to 20/50. Control of ocular inflammation was achieved using methotrexate (12.5 to 15 mg weekly) in addition to oral steroids and topical therapy. The final BCVA of the sympathizing eyes ranged from 20/20 to 20/30, indicating that good visual outcomes were attainable with steroids and methotrexate as part of the maintenance regimen. None of the patients developed adverse side-effects from methotrexate.

Conclusion: This small case series demonstrated the effectiveness and safety of methotrexate for control of intraocular inflammation in sympathetic ophthalmia. (**Author's abstract**)

Keywords: *Sympathetic ophthalmia, Steroids, Methotrexate, Clinical outcomes, Panuveitis, Medicine*

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0294

Moderating effect of the impact of COVID-19 on the relationship of stigma and depression: A public mental health concern

Calleja, Marissa , Magpantay, Cely , Glinoga, M

Introduction The COVID-19 pandemic has led to rising depression rates worldwide. In the Philippines, people with mental disease are highly stigmatized. Students are one of the most vulnerable populations for depression and stigmatization. This study examines the relationship between the effect of the pandemic and depression rate as well as the role of self-stigma among students.

Methods A correlational research design was utilized using the online-platform Questback. College students were recruited and answered a questionnaire assessing their depression level, self-stigma towards depression using the Depression Anxiety and Stress Scale and Self-Stigma of Depression Scale, respectively, and how negatively they were affected by the pandemic. Multiple and hierarchal linear regression analyses were done to determine the relationship between impact of the pandemic and selfstigma on depression.

Results Of 349 respondents included in the analysis, 60% had moderate to extremely severe depression. Pandemic impact ($\beta = 0.40$) and self-stigma of depression ($\beta = 0.32$) were both positively associated with depression. A moderating effect of Social Inadequacy, a dimension of self-stigma of depression was found. The effect of pandemic impact on depression was stronger on students with higher levels of social inadequacy.

Conclusion Students who are less likely to feel socially inadequate when having depression seem to be more resilient against developing depression when coping with distress brought about by the pandemic. (**Author's abstract**)

Keywords: *COVID-19, Depression, Stigma, Medicine*

Neurosyphilis with Ocular Involvement in a Patient with Newly Diagnosed Human Immunodeficiency Virus (HIV) Infection: A Case Report

Tanque, Andre Angelo G. , Bajandi, Kristine Joy C. , Zamora, Rosally P. , Elinzano, Ma. Althea Kathrine B., Hufana, Ellalyne

Introduction: Syphilis is a chronic systemic infection caused by *Treponema pallidum* sub-species *pallidum*. Syphilis, by itself, already has a varied clinical presentation depending on the stage, earning its moniker as “the great imitator”. In a patient without HIV infection, untreated syphilis presents as a chronic infection with primary, secondary, latent, and tertiary stages. With the emergence of the AIDS pandemic, HIV co-infection may significantly alter the clinical presentation of syphilis. This is a case of a patient with neurosyphilis with overlapping primary and secondary syphilis.

Case Presentation: This is a case of a 34-year-old Filipino male who came in due to blurring of vision. The patient’s illness started six months prior to admission, when he noted the appearance of a painless, non-pruritic, solitary ulcer with erosions on his penis. A month after, he started to have progressive blurring of vision. In the interim,

erythematous, scaly plaques appeared on the dorsal aspect of both hands and feet, and on the tip of the nose, with associated thinning of hair on the scalp and eyebrows. The skin and penile lesions eventually increased in size and number. The examination of the pupils showed a 6 mm right pupil, non-reactive to light, and a 2 mm left pupil which was minimally reactive to light and constricts upon accommodation. The diagnosis of syphilis was confirmed by a reactive serum Rapid Plasma Reagin at 1:64 dilution, and a reactive serum *Treponemal Enzyme Immunoassay*. HIV screening was also reactive, with a CD4+ cell count of 15 cells/ μ L. Ophthalmologic findings were consistent with panuveitis. Skin punch biopsy revealed lichenoid and interstitial dermatitis with which syphilis was highly considered. Cranial CT imaging showed mild cerebral atrophy. Lumbar tap revealed a colorless, clear cerebrospinal fluid, with lymphocytic pleocytosis, normal protein, decreased glucose, and a reactive CSF RPR. The patient was given intravenous penicillin G 3 million units every 4 hours for 14 days, together with ophthalmic medications (prednisolone, levofloxacin, and atropine ophthalmic drops). He was also started on antiretroviral therapy. Prior to discharge, the patient was noted to have improved vision, skin lesions were significantly improved, and he was advised for close monitoring as outpatient.

Conclusion: Through this case, it was elaborated that with HIV co-infection, syphilis may present atypically—with multiple, persistent, primary lesions; with overlapping of the stages, and increased frequency of neurosyphilis presenting early into the infection. (**Author's abstract**)

Keywords: *Syphilis, Neurosyphilis, Ocular syphilis, HIV, HIV co-infection, Medicine*

Non-extraction Camouflage Treatment of Skeletal Class III Malocclusion

Triwardhani, Ari , Wardhana, Raden Aditya Wisnu , Anggitia,

Class III malocclusion can be defined as a skeletal facial deformity that is characterized by a forward mandibular position with respect to the cranial base and or the maxilla. We present a case of a 15-year-old man with skeletal Class III malocclusion who was treated with non-extraction orthodontic camouflage treatment using an orthodontic conventional technique. A fixed appliance, straight wire appliance (SWA) technique was used with a non-extraction treatment plan. Treatment was accompanied by intermaxillary Class III elastics. The total duration of active treatment was 23 months. There was a significant improvement in his occlusion, smile esthetics, and soft tissue profile pattern. Orthodontic camouflage can be considered an effective therapy for correcting milder cases of skeletal Class III malocclusion. **(Author's abstract)**

Keywords: *Non-extraction, Orthodontic camouflage, Skeletal Class III malocclusion, SWA technique, Medicine*

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0297

Non-extraction Treatment of Class II Division 2 Malocclusion with Cover Bite: A Case Report

Ramadhani, Syafira Dike Nur, Narmada, Ida Bagus, Martalia, Chi

Increased overbite has always been a challenging orthodontic problem in treating most periodontal-associated problems. This case report described the management of a class II division 2 malocclusion with cover bite without extraction. A 19-year-old female patient came with a chief complaint of irregularities on the anterior teeth. A fixed appliance was placed without extraction. The patient was instructed to use intermaxillary elastic band class II to correct the canine and molar relation. Treatment time was 16 months. A class I canine and molar relation with good interdigitation was achieved. The treatment of class II division 2 malocclusion without extraction in the adult patient showed promising results. **(Author's abstract)**

Keywords: *Angle Class II Malocclusion, Class II Malocclusion, Malocclusion Class II Division 2, Orthodontic Treatment, Medicine*

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NP

0298

Non-Pharmacologic Nursing Interventions to Reduce Delirium Risk and Promote Quality Sleep

Hardin, Sonya R., Munro, Cindy L., Everhart, Erik, Mulkey, Malissa A., Olson, DaiWa

The average ICU patient sleeps less than two hours/day with as many as 61% reporting sleep deprivation, placing it among the most common ICU stressors. Sleep disturbances, lack of sleep and sleep disruption are common in older adults and a core risk factors for delirium. Significant reductions and fragmentation of sleep lead to an absence of restorative sleep. A significant amount of invasive care known to be a major risk contributor to the development of delirium occurs in the ICU. Nurses should be able to identify delirium risk factors earlier and contribute greatly to their prevention by promoting good sleep hygiene interventions. **(Author's abstract)**

Keywords: *Delirium, Sleep, Deprivation, Sedatives, Medications, Critical Illness, Geriatric, Sleep hygiene interventions, Medicine*

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NP

0299

Nonsurgical Orthodontic Treatment in an Adult with Skeletal Class III Malocclusion Using Passive Self-ligating System: A Case Report

Suparwitri, Sri, Alhasyimi, Anan

Skeletal Class III malocclusion treatment is complex, especially when jaw deviations are serious. Camouflage treatment of skeletal Class III malocclusion improves prognosis with a slight-to-moderate functional shift. This report presents the case of a 23-year-old male with poor facial esthetics associated with chin protrusion and an uncomfortable bite. He had a concave profile, unfavorable incisor displays, protrusive lower lip, and strained lip closure. Camouflage therapy with a passive self-ligating (PSL) system through the anterior teeth of the maxilla protraction and arch expansion was used. After 14 months of treatment, the overjet outcome was positive. The teeth were arched, asymmetry was addressed, the convex profile and no deviation occurred when the jaw was closed. Factors in using the PSL system were low friction between the bracket and archwire, torque selection, and the significant dental arch expansion ability. The PSL system is an appropriate option in treating adults with skeletal Class III malocclusion to achieve a normal occlusion and a pleasant facial profile. **(Author's abstract)**

Keywords: *Skeletal Class III, Camouflage, Passive self-ligating, Medicine*

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0300

Non-surgical Syngeneic Model of Endometriosis in Ovary-intact Outbred Mice

Velarde, Michael C., Reyes, Emmanuel Marc C., Masangkay, Joseph S., Tan, Prince Dominik Alljen C., Benjamin, Kimberly B., Tan, Ir

Intraperitoneal injection of endometrial tissues into inbred mice such as C57BL/6J is widely used as a model to study endometriosis, a disease characterized by the abnormal proliferation of endometrial cells which invade various tissues within the peritoneal cavity. However, most of these inbred mouse strains have a weak immune system and are often ovariectomized, which is not reflective of the human population in general. Hence, this study used the ovary intact ICR mouse strain as a model to study the immune response during endometriosis development using a non-surgical syngeneic model with no estrogen supplementation. We showed that ICR mice developed ectopic endometrial tissues after 8 wk, but these were mostly necrotic. Reducing the induction period to 4 wk increased the number of ectopic tissues, and endometriotic lesions were also formed in 30% of the induced recipient mice, albeit with a relatively low incidence rate. Endometriotic lesions in ICR mice were also associated with fewer lesion-resident macrophages and lesser vascularization than in C57BL/6J mice. This is further supported by a significantly downregulated expression of genes involved in angiogenesis and M2 macrophage activity in ICR versus C57BL/6J donor endometrium. Conversely, inflammatory response genes were significantly upregulated in the endometrium of ICR versus C57BL/6J mice. Overall, these data implicate the role of inflammation in inhibiting the establishment of endometrial lesions in ICR mice and the involvement of

macrophage in promoting endometriosis in C57BL/6J mice. The present work reports the establishment of endometriotic lesions in outbred ICR mice by a less invasive syngeneic intraperitoneal injection procedure. **(Author's abstract)**

Keywords: *Endometriosis, Endometrium, Gene expression, Inflammation, Mouse strains, Macrophage, Medicine*

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NP

0301

Normalizing Advanced Practice in Public Health Nursing in The Philippines: A Foucauldian Analysis

Abad, Peter James B. , Dones, Luz Barbara P. , Posadas, John

This study provides a closer look to the possibility of having advanced practice in public health nursing by analyzing the power relations between nursing practice and social structures. Representatives from the public health sector, national authorities, and the private sector were invited in a round table discussion. Transcriptions were coded and later on categorized and analyzed drawing upon the concepts of Foucault. Foucauldian analysis hands an important insight on how social structures and institutions can steer the creation of an advanced practice in public health nursing in the Philippines. Various social institutions view the relevance of a master's prepared nurse according to their societal roles and functions. Requisite competencies of a master's prepared nurse in public health nursing include fulfilling the role of a clinician, leader and manager, supervisor, and a researcher. PRBON, CHED, DOH, and nursing schools need to work together to define the knowledge of an advanced practice in public health nursing, to implement appropriate surveillance mechanisms, and to establish a compliant practice. **(Author's abstract)**

Keywords: *Advanced practice nursing, Public health nursing, Foucauldian analysis, Professional roles, Medicine*

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(Filipiniana Analytics)
NP

0302

Normotensive Pheochromocytoma Presenting as Adrenal Incidentaloma: A Case Report

Robles, Jeremyjones F. , Ong, Angeli Nic

Background: Pheochromocytomas are rare catecholamine-secreting tumors that usually present with hypertension and palpitations. However, a subset of pheochromocytoma patients is asymptomatic, presenting as adrenal incidentaloma on imaging.

Case: We present a case of a 32-year-old normotensive female who presented with a right suprarenal mass on abdominal ultrasound. Diagnosis of pheochromocytoma was made after biochemical testing revealed elevated 24-hour urine metanephrine of 1.96 mg/24hrs (NV:0-1 mg/24hrs) and epinephrine of 129 mcg/24hrs (NV: 2-24 mcg/24hrs). In addition, plasma chromogranin A was elevated at 225.38 ng/ml (NV:<100 ng/ml). CT scan of the abdomen showed a 3.0 x 4.0 x 3.0 cm heterogeneous well-circumscribed right adrenal mass, with 87Hu on contrast, an absolute washout of 21%, and a relative washout of 13% on a delayed scan. After adequate preoperative medical therapy with an alpha-adrenergic blocker, a right laparoscopic adrenalectomy was done,

with histopathologic confirmation of pheochromocytoma. Repeat 24-hour urine metanephrine measurements done on multiple follow-ups after surgery were normal.

Conclusion: Asymptomatic pheochromocytoma should be included in the differential diagnoses of adrenal incidentalomas. As in our case, patients with normotension and adrenal incidentalomas should still undergo biochemical workup to rule out the presence of pheochromocytoma. Long-term complications from chronic exposure to high catecholamine levels lead to significant adverse cardiovascular effects. Early detection, adequate perioperative preparation, and timely surgical intervention can prevent a potential catastrophe. (**Author's abstract**)

Keywords: *Pheochromocytoma, Adrenal incidentaloma, Blood pressure, Filipino, Medicine*

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NP

0303

Nurse Residency Program in the Philippines: A Policy Brief

Asto, Abraham B. , Labarinto,

This policy brief stems from the call to increase recruitment and hiring in the Philippine nursing service. It is important to consider the experiences of novice nurses in transitioning to the professional workforce. Bridging this gap leads to a direction of reinforcement or strengthening of competencies through a support system. Thereby, it is timely and relevant given the current situation of the nursing profession that a Nurse Residency Program (NRP) be proposed. The policy brief aims to reinforce technical knowledge and skills, enhance leadership and management skills, increase confidence in achieving the expected competencies, develop critical thinking and problem-solving skills, and deepen knowledge in health-related research among novice nurses. All these shall equip the novice nurse for a new role in a complex environment. The result of the Nurse Residency Program is the achievement of quality of care, patient safety, and better health outcomes. Novice nurses who respond to the needs of the Filipino people with confidence and competence help maintain the health and well-being of the country towards sustainable development and growth. (**Author's abstract**)

Keywords: *Nurse Residency Program, Novice nurse, Training, Filipino nurses, Medicine*

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NP

0304

NURSE STAFFING DURING THE SARS, MERS, AND EBOLA EPIDEMICS: A NARRATIVE REVIEW

Tamayo, Reiner Lorenzo J. , Gilo, Ericka Louise C. , Tating, Dan Louie R

Background: The COVID-19 pandemic has put an immense strain on health systems worldwide. Nurses at the front line are prone to experience several staffing issues facing ever-increasing stresses to the health care system by a pandemic situation. The staffing experiences of nurses in this context can have a significant impact on current nursing practice and existing policies.

Objective: To carry out a synthesis of the scientific evidence available on the staffing experiences of nurses during

the SARS, MERS, and Ebola epidemics.

Method: A narrative review was conducted. A literature search was carried out in PubMed, Scopus, and CINAHL databases. All studies describing nurses' experiences were included regardless of methodology. A total of 16 articles was included in the review.

Results: Narrative synthesis revealed ten themes from the results of the articles: training, staffing ratios and models, shifting models, volunteer staffing, skill mix, planning staffing needs, hospital preparedness, communication, effects of workload, and structured workflow processes.

Conclusions: Nurses are pivotal to the healthcare response to infectious disease pandemics and epidemics. The results of this review should provide a basis for nurse managers and administrators on how they can actively engage in supporting the staffing concerns and issues of nurses during the COVID-19 pandemic. (**Author's abstract**)

Keywords: *Nurse staffing, COVID-19, Pandemic, Narrative review, Medicine*

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0305

Nurse-Led Diabetes Clinic (NLDC) for a Comprehensive Diabetes Care Management

Gascon, Kalleitner Xyrus, Altuhaini, Anna Dianne, Samson, Je

Chronic disease is rapidly becoming a greater burden in the world and the leading cause of mortality because of epidemiological transformation. Diabetes is one; with 6.7 million deaths registered in 2021. In the Philippines, a report by the International Diabetes Foundation (IDF) projects the number of patients with Diabetes in 2030 to reach 5.4 million and 7.5 million by 2045. Diabetes treatment in the Philippines is poor and challenging in terms of resources, government support, and economy. The national health insurance system does not have comprehensive diabetes care coverage and private insurance companies offer limited diabetes coverage. As a result, patients rely on "out-of-pocket" expenses for their laboratory testing and medications, and consequently, non-adherence to therapy. There is a need for an intervention in diabetes care management as Diabetes Mellitus (DM) prevalence posts an upward trend. This paper recommends the following policy statements to strengthen DM care management in a comprehensive, integrated, and coordinated nurse-led care system through "3Rs": "Reactivating" the health promotion activities; "Rephrasing" the existing care provisions; and "Re-establishing" care models that will boost the DM management care among the Filipinos. (**Author's abstract**)

Keywords: *Nurse-led clinic, Diabetes clinic, Diabetes care management, Advance Diabetes nurse, Advance Nursing Practice, Nurse Entrepreneur, Medicine*

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NP

0306

Nurses' Knowledge, Attitudes, and Practices Regarding Postoperative Pain Management in Sri Lanka

De Silva, B.Sunil S., Indika, M.S., Hindagoda, H.M.P., Kumara,

Purpose of the study: This study aimed to investigate the knowledge, attitudes, and practices regarding post-operative pain management among nurses working in the surgical units in Kandy, Sri Lanka.

Design: The study was based on quantitative method, specifically descriptive design. Samples were selected using the probability sampling technique of simple random sampling. The sample size obtained was 200 nurses using 95% confidence level and a 4% margin of error for a population of 300 nurses in the research setting.

Methods: A self-administered questionnaire was chosen as a data collection method, and this questionnaire contained 36 questions under four sub-topics. A box was kept in the matron office in the surgical section to collect the questionnaire. The data were analyzed using descriptive analysis with percentages.

Findings: According to the research findings, 66% (132) were knowledgeable about the meaning of post-operative pain management. Post-operative pain management was identified by 74% (148) of the respondents, and 26% (52) correctly indicated that the most accurate judge of post-operative pain is the patients' self-report. When considering the attitudes, 66% (132) of the participants agreed that post-operative patients show discomfort before receiving the next analgesics. Among the participants, 60% (120) of nurses worried that patients would become addicted to analgesics that they give, while 20% (40) disagreed, and 2% strongly disagreed. 54% (108) of the nurses stated that patients were kept under close observation and the pain was monitored regularly, while 46% (92) expressed that patient is kept in a comfortable position. To manage post-operative pain, 80% (160) used non-pharmacological methods while 20% (40) did not.

Conclusions: The findings of this study identified problems such as inadequate knowledge, and inappropriate attitudes and practices regarding postoperative pain management. **(Author's abstract)**

Keywords: *CaSPUN, Cancer survivor, Cross-cultural adaption, Indonesia, Needs assessment, Medicine*

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(Filipiniana Analytics)
NP

0307

Nursing Workforce In The Philippines: Data And Issues

Pagsibigan, Jesusa S. , Balabagno, Araceli O. , Bonito, Sheila R., Sereneo, Kate Anjely

This study was conducted to: (1) determine the profile of nurses in various work settings based on available databases; (2) describe the current nursing education and programs in the Philippines; and (3) identify national key issues affecting the nursing workforce. The study utilized descriptive, cross-sectional research design; and employed institutional survey, Delphi survey, and round table discussions. Results showed that the Department of Health has the current number of nurses working in hospitals and communities in the different regions, including information on age and sex distribution, employment characteristics, and type of hospital affiliations. The Professional Regulations Commission Board of Nursing has the results of the national licensure examinations. Commission on Higher Education has information on BSN curriculum and schools. Priority key issues identified are: (1) nursing leadership and nursing role clarity, (2) workplace safety and violence, and (3) shortage of nurses, (4) unjust compensation, and (5) skills mix and geographic maldistribution. PNA is thought to have a big role in helping address these key issues. **(Author's abstract)**

Keywords: *Blood pressure, Urban poor, Health education, Lifestyle changes, Medicine*

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NP

Nutrition in Times of Crisis: A Qualitative Study in Siargao Island, Philippines, during the COVID-19 Pandemic

Zhang, Yunting , Suphanchaimat, Rapeepong , Leuangvilay, Phetdavanh , Compra, Julie Madelo , Yu, Vincen Gregory , Lasco, Gideon, Javier, Cha

Objectives. Despite the public-health significance of both malnutrition and crises, little has been done to explore the convergence of the two domains and develop ways to improve policies and practices, especially in rural communities. This article remedies that knowledge gap by focusing on nutrition-related changes, responses, and practices during crisis situations in Siargao Island, Philippines, using the COVID-19 pandemic as a backdrop.

Methods. Forty-six (46) semi-structured interviews were conducted among parents, caregivers, local health workers, and local officials of Del Carmen, Siargao Island. Principles of thematic analysis were applied to data analysis using NVivo 12. Afterwards, the preliminary data were presented in a virtual validation session with the local community and stakeholders.

Results. Despite the high prevalence of malnutrition amid a backdrop of economic and nutritional difficulties, the community members generally viewed their children as healthy. Rice remained (disproportionately) central to people's diets; possible alternatives like root crops were considered emergency foods only and not culturally acceptable as staples, in spite of their cheap and ubiquitous nature. Lastly, the economic and financial repercussions of the COVID-19 pandemic have also negatively affected the community members' overall nutrition and food sources.

Conclusion. More efforts should be directed toward encouraging the consumption of root vegetables and fruits as rice alternatives in everyday diet—a cost-effective strategy that would also promote dietary diversification. More importantly, nutrition responses should consider local food systems in terms of specific local economies and geographies, while health promotion efforts should engage with local notions of 'health' and 'nutrition' and encourage community participation in (re)designing policy interventions. (Author's abstract)

Keywords: Nutrition, Public health, Rice, Root crops, Siargao Island, COVID-19, Medicine

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2023,
(Filipiniana Analytics)
NP

Occupational Safety and Health Practices among Physical Therapists in Metro Manila during the COVID-19 Pandemic: A Qualitative Study Protocol

Palacio, Jr., Peter Oliver G. , Ignacio, Erika L. , Chan, Coby Jaleeyah Y. , Budomo, Richard Lemuel Q. , Benzonan, Giancarlo Philip H. , Angeles, Barbara Nicole Y. , Abella, Jewel Jace M. , Devora, Kristina B. , Espino, Paulin Grace M. , Sicat, Zyra Mae V., Tan, Julia Eri

Introduction. The purpose of Occupational Safety and Health (OSH) is to protect and prevent workers from being exposed to risks and hazards that are detrimental to their health and safety. For the past two years, the coronavirus disease 2019 (COVID-19) is one of the most significant occupational health outcomes to physical therapists (PTs) due to the nature of their work. However, minimal studies have been conducted about the experiences and OSH practices of PTs during the pandemic. This study aims to understand the experiences of clinical PTs in Metro Manila, Philippines during the pandemic. The study also seeks to explore the OSH practices and responses of PTs to presenting occupational risks and hazards through a qualitative descriptive study design.

Methods. In this qualitative descriptive study, a maximum variation purposeful sampling method will be used in

recruiting an estimated total of twelve (12) participants. A preliminary questionnaire would be disseminated via Google Forms to determine the eligibility of potential participants. Data will be gathered through a one-to-one semi-structured online interview, which will be transcribed verbatim and recorded with audio and video. Both manual coding and software-aided coding (NVivo) will be utilized in the data analysis. Emerging themes will be identified using thematic inductive analysis.

Discussion. The results of the study may contribute to the formulation of better guidelines in handling infectious diseases even after quarantine restrictions are lifted. Furthermore, the findings will also provide the groundwork for the local body of knowledge in the Philippines and may serve as a future reference for research concerning OSH practices in physical therapy locally. **(Author's abstract)**

Keywords: *Occupational safety and health, Physical therapy, COVID-19 pandemic, Metro Manila, Medicine*

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(Filipiniana Analytics)
NP

0310

Online learning in Nursing: Concept Analysis

De Guzman, Cathlene

Online learning in nursing is a controversial idea that is viewed as a hindrance to the holistic learning of an individual, however, it was the only solution to prioritize the safety of students during the COVID-19 pandemic. This concepts aims to give a clear approach to how online learning will occur successfully in nursing education. The method used in intellectualizing the concept was Walker and Avant's approach. The attributes of online learning involve: 1.) platform with the use of devices to create a classroom community; 2.) virtual schooling at home; 3.) entertainment and leisure activity; and 4.) enhanced with synchronous online classes and asynchronous video instruction. Apart from these attributes, the schema of nursing students needs to be addressed and enhanced through the delivery of learning by giving importance to visual, audio, read and/or writing, and kinesthetic learning styles fueled with the right attitude and technological competency. **(Author's abstract)**

Keywords: *Online Learning, Nursing education, Nursing, Medicine*

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NP

0311

Outcome of babies at 8-12 months old who tested positive for COVID-19 at birth in two tertiary medical centers

Saymaaran, Benji Marie A. , Magat, Maria Milagros U., Arcilla, Succor

Introduction Scant information remains regarding the outcome of babies who tested positive for COVID-19 at birth beyond two months of age. This study determined the outcome of infants at 8-12 months old who tested positive for COVID-19 at birth.

Methods This is a non-concurrent cohort study. A review of medical records at birth and at wellness check at 8-12 months was done. The weight, Z-scores, episodes of upper respiratory tract infection and number of non-routine consults were compared between the babies who tested positive at birth with those whose test was negative

for COVID-19. Asymptotic 2-tailed p value = 0.05 determined significance of differences of variables.

Results From August to October 2020, 31 newborns tested positive for COVID-19; 31 tested negative, and all had an unremarkable outcome at birth. Nine ($p = 0.001$) mothers tested positive for COVID-19. COVID-19 babies weighed statistically significantly less than the non-COVID-19 babies ($8.5 + 0.87$ vs $9.7 + 0.89$ kg, $p = 0.010$) at 8-12 months. There was no statistically significant difference when the z-scores were considered ($p = 0.313$). As of last wellness check, babies who tested positive at birth had more episodes of upper respiratory tract infections (19.6% vs none, $p = 0.010$) and non-routine consultations.

Conclusion Twenty nine percent of newborns tested positive if mothers tested positive for COVID-19. At 8-12 months old, babies who tested positive for COVID-19 at birth had more episodes of upper respiratory tract infections. (**Author's abstract**)

Keywords: *Outcome, Newborns, COVID-19, Medicine*

Health Science Journal, Volume No. 11 Issue No. 1, 12-17
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(Filipiniana Analytics)
NP

0312

Paraparesis in a Young Adult: A Case Report on Neurofibromatosis-2

Robles, Jeremyjones F. , Maglinte, Bayani Pocholo T. , Colasito, Tris

Background: Neurofibromatosis-2 (NF2) is a rare neurocutaneous syndrome that typically presents with hearing loss, tinnitus, or weakness associated with few subcutaneous nodules. In contrast to neurofibromatosis-1 (NF1), NF2 presents clinically with more central lesions rather than peripheral lesions. The presence of bilateral vestibular schwannomas through imaging studies distinguishes NF2 from other neurocutaneous syndromes.

Case: This is a case of an 18-year-old male who presented with lower paraparesis with associated hearing loss, cataract, and a few subcutaneous nodules. Centrally located lesions were suspected, thus brain and spine magnetic resonance imaging (MRI) were done revealing bilateral vestibular schwannomas and spine neurofibromas. The patient and family were advised for tumor surveillance, and apprised of surgical intervention once with brainstem compression symptoms.

Conclusion: NF2 is a rare debilitating disease that may lead to multiple neurologic deficits. The absence of recommended medical treatment and the multifocality of the tumors leave surgical resection a high-risk treatment option. Early recognition by tumor surveillance may give patients with NF2 a better prognosis and survivability. (**Author's abstract**)

Keywords: *Neurofibromatosis, Schwannomas, Neurofibromas, Paraparesis, Bevacizumab, Medicine*

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NP

0313

Parental Feeding Style of Mothers in the Province of Ilocos Sur

Arde, Jr., Bernardo Oliber A., De Vera, Marciana

The increasing trend of childhood obesity is becoming an imminent concern in both developed and developing countries. Besides genetic predisposition, environmental and social factors are contributory factors to this global epidemic. These factors include maternal feeding practices and style. This study determined mothers' parental feeding styles in the province of Ilocos Sur and the factors that predict them. Also, the study ascertained if parental feeding styles are related to the child's Body Mass Index (BMI).

This study used the descriptive-correlational research method and included 156 mothers with children aged 2-3. Respondents were chosen purposively. The Parental Feeding Style Questionnaire developed by Wardle et al. (2002) was used to gather the needed data. For data analysis, the frequency and percentage, mean, multiple regression, and Pearson product-moment of correlation were used.

This study concluded that mothers vary in their characteristics and so on their feeding styles. Based on study results, they have high levels of encouragement and emotional feeding and average levels of instrumental feeding and control over feeding. However, encouragement feeding is the dominant feeding style among respondents among the four feeding styles. Various maternal traits have been found to predict a specific parental feeding style except for the control over feeding subscale. Additionally, only encouragement feeding was found to have an indirect correlation with a child's BMI. **(Author's abstract)**

Keywords: *Feeding practices, Maternal factors, Nutritional status, Medicine*

Philippine Journal of Nursing, Volume No. 92 Issue No. 1, 35-43
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(Filipiniana Analytics)
NP

0314

Paternal Care during Miscarriage: A Concept Analysis *Osei, Simon*

Caring is the fundamental essence of nursing practice. Swanson's theory of caring provides the process of care for women who have experienced miscarriage. However, there is a gap in theory and knowledge in providing care to fathers experiencing a miscarriage. Studies have shown that the experience of fathers during a miscarriage is different from their wives. According to Jones et al (2019), fathers' experience during a neonatal loss is different from their partners. They feel isolated. Thus, men feel that they are disconnected from their partners, and also are not involved in the caring process, are overwhelmed by the situation, fathers feel that the role fathers play as a protector for their partner was not done well and they experience a lack of support from healthcare providers during that period. This concept of paternal care during a miscarriage is to help fathers who are experiencing neonatal loss by applying the appropriate nursing action to provide the necessary nursing care. The concept analysis methodology from Walker and Avant (2005) would define the concept, attributes, antecedents, consequences, cases, and empirical referent on paternal care during a miscarriage. This paper concludes that providing paternal care to fathers during miscarriage helps them deal with the loss and understand the process they are going through. Therefore, there is a need to develop a theory that provides the care process to fathers going through a miscarriage. Hence, the theory of paternal care during a miscarriage is proposed. **(Author's abstract)**

Keywords: *Paternal care, Miscarriage, Caring, Child loss, Medicine*

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(Filipiniana Analytics)
NP

0315

Patients' Experiences and Level of Satisfaction on the Care Rendered by Student Nurses

Lorica, Josephine D. , Valdez, Alyssa Justine E. , Tomas, Kathleen Gail C. , Anguluan, Keneth T. , Reboldera-Adolfo, M

Understanding the patients' views on the care they receive is essential for the development of quality health care services. The study aimed to determine the patients' experiences and level of satisfaction on the care rendered by student nurses in the medical and surgical wards of a private hospital . Furthermore, it determined any significant difference in the patients' experiences and level of satisfaction when grouped according to demographic variables.

A descriptive research design was utilized in the study. The participants were recruited from the medical and surgical wards of the hospital from September 5 to October 15, 2016. A total of 100 patients who received care from the student nurses for a minimum of 2 days were included in the study.

The Newcastle Satisfaction with Nursing Scale (NSNS) was used to determine the patients' experiences and level of satisfaction on the care rendered by student nurses. Frequency, percentage, mean score, T-test, and ANOVA were utilized for the data analysis.

Results showed that patients' experiences were above good (category mean of 4.97) and were completely satisfied (category mean of 3.53) with the care rendered by the student nurses. A significant difference was also found between the highest educational attainment and patients' experiences ($P < 0.05$). These findings are important in improving the quality of care rendered to the patients by student nurses. Furthermore, it helps the nursing education in determining and enhancing the competencies of the students in some focused areas. (**Author's abstract**)

Keywords: *Patients' experiences, Patients' satisfaction, Care, Student nurses, Medicine*

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(Filipiniana Analytics)
NP

0316

Pediatric Neurology Patients: Parental Awareness of Adverse Effects of Long-term Corticosteroid Therapy

KA, Sriyani , WMD, Mohotti , HWCK, Shiwanthi , JSEA, Samarasekara , UKC, Perera , Marikar, Fai

Background: Corticosteroids are potent medications used to treat many inflammatory conditions in paediatric neurology practice. Although corticosteroids are beneficial, their adverse effects may be numerous and varied. As parents are the primary caregivers of paediatric patients, assessing their awareness is important.

Methods: To determine the parental awareness on the adverse effects of corticosteroid therapy in Paediatric Neurology Patients in the Neurology Unit at the Lady Ridgeway Hospital, Colombo, Sri Lanka, this descriptive cross-sectional study, looked at 300 parents of paediatric neurology patients on long-term corticosteroid therapy. Parents volunteered for the study and signed with informed consent. Ethical approval was obtained from the Ethics Review Committee of the same hospital. Data were collected using content validated, pre-tested self-administered questionnaire during January to March 2020.

Results: Of the total parents, the majority were mothers (87%, n=262) and more than 70% (n=211) of them completed their secondary education. Findings demonstrated that parents had average awareness about adverse effects of long-term steroid therapy including child's susceptibility to infections (69.0%, n=207), increase blood glucose levels (69.7%, n=209), moon face (60.3%. n=181), central obesity (60.3%, n=181), increase blood pressure levels (58.0%, n=174) and irritability 50.3%, n=151) while poor awareness on adverse effects include buffalo humps (26.7%, n=80) increase fracture tendency (24.3%, n=73), tarry colour stools (24.3%, n=73), vision impairment (24.0%, n=72), glaucoma (17.3%, n=52), cataract (16.0%, n=48) and delayed wound healing (23.0%,

n=69). According to the findings, overall mean (SD) knowledge percentage on parental awareness of adverse effects was found to be low (38.24 ± 20.57).

Conclusion: Since parental awareness of the adverse effects of long-term corticosteroid therapy is inconsistent, special attention is needed to plan and implement appropriate awareness sessions. **(Author's abstract)**

Keywords: *Medicine, Paediatric neurology patients, Corticosteroid therapy, Parental awareness, Adverse effects*

Philippine Journal of Nursing, Volume No. 92 Issue No. 1, 44-53
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NP

0317

Perceived Social Support from Family, Friends and Spiritual Experiences as Correlates of Depression

Catu, Louie

Depression is the origin of ill health problems in college students. It advances as one of the leading causes of mental health issues. During their college life, freshmen encounter many firsts. These include a new environment, friends, exposure to social norms and culture. The students may struggle and experience difficulty if they cannot deal with these challenges. They can become a vulnerable population. Therefore, the overall purpose of this study is to conduct a baseline assessment of college students' experiences in the university. More so, this study 1) describes the characteristics of a sample of freshmen allied medical sciences students, 2) describes the levels of perceived social support from family and friends, spiritual experiences, and depressive symptomatology among allied medical sciences freshmen; and 3) to assesses the possible association among described positive influences (spirituality, family support, peer support) to depressive symptomatology. The study utilized a cross-sectional analytic quantitative design. In selecting respondents, a consecutive sampling technique was utilized. Respondents eligible to participate included first-year full-time students in the university taking up Bachelor of Science in Nursing (BSN), Bachelor of Medical Technologist (BSMT), and Bachelor of Science in Radiological Technologist (BSRT). A total of 110 undergraduate students participated in the study. Most of the students were females younger than 20 years old. The overall perceived social support from family and friends yielded average scores. The higher the scores, the greater the perception of social support from family and friends. For their spirituality, it showed that participants scored lower, indicating a high level of spiritual experiences. Lastly, the depression scale yielded high scores indicating that the participants had signs of severe/major depression, as based on the Center for Epidemiologic Studies Depression (CES-D) scoring. The relationships between Depressive Symptoms and Perceived Social Support from Family (PSS-Family) and Friends (PSS-Friends), and Spirituality Experiences were also evaluated. It showed that Depression and PSS-Friends yielded a statistically significant relationship. However, there was no statistically significant relationship between Depression and PSS-Family. For the spirituality experiences, the test revealed that there is also a statistically significant relationship with depression. Overall, the study concludes that college life is a period of increased challenge for young allied medical health students. Their courses accompany complex and challenging responsibilities that increase tensions and anxiety. The results from these processes may cause or worsen stress when not given priority and could lead to depressive symptomatology. It was reflected that freshmen students' peer support and spiritual experiences appear to be closely associated with depressive symptomatology. **(Author's abstract)**

Keywords: *Allied medical sciences students, Perceived social support, Spirituality, Depression, Medicine*

Philippine Journal of Nursing, Volume No. 91 Issue No. 2, 14-21
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(Filipiniana Analytics)
NP

Perception of Filipino Physicians on the Roles and Scope of Practice of Physical Therapy in the Philippines: A Multi-method Quantitative Study

Lapid, Chalsea Anne R. , Lotho, Mark Kenneth I. , Wee, Angela Denise L. , Chiong, Aleesa C. , Sadiasa, Anne Nicole B. , Carbonell, Kyla Mari P. , Rueda, Ella Mae S. , Nava, Jordan Barbra P. , Rimando, Christian Rey D. , Callejo-Tiuseco, Archelle Jane C., Soriano, Martin John A. , Casis, James Alber

Introduction: Physical therapists (PTs) are licensed practitioners who can assess, diagnose, and provide treatment interventions that restore patients to optimal function. While PTs can deliver complete management plans, the practice of physical therapy (PT) in the Philippines follows a referral system where physicians are the first contact of the patient, emphasizing the importance of physician's perception towards the role of PTs and scope of PT service. This study aimed to determine the internal consistency of the Perception on Physical Therapists Questionnaire (PoPTQ), and to use this tool to report the existing perceptions of Filipino physicians on the practice of PT.

Method: This study was divided into two phases and utilized a multi-method quantitative research design. For Phase 1 (psychometric), 18 questionnaires administered to Filipino physicians were used to compute Cronbach's α of PoPTQ. A total of 134 questionnaires of the same population were analyzed for Phase 2 (cross-sectional), in which descriptive statistics and cross tab analysis were used to report the respondents' perceptions. Both phases utilized online means of data gathering done via convenience sampling.

Results: Phase 1 revealed a Cronbach's α value of 0.528 for all items of PoPTQ. Phase 2 showed that physicians who have attended lectures discussing the roles of PTs or have experience with working with them have a higher referral rate than those with no prior exposure to PTs.

Discussion: Filipino physicians believe that PTs can establish strong patient-therapist relationships, treat different patients, and acknowledge the roles of PTs in clinical and research settings. Data suggest that adequate foundational knowledge, positive perceptions, and high awareness of PTs' roles and scope of practice are observed among Filipino physicians. However, there remains a need to increase collaboration opportunities between PTs and physicians in their academic years and programs that focus on the promotion of PT roles and scope of practice. (Author's abstract)

Keywords: *Perception Questionnaire, Physical Therapy Roles, Physician Perception, Medicine*

The Philippine Journal of Physical Therapy, Volume No. 1 Issue No. 1, 1-15 Perception of Filipino Physicians on the Roles and Scope of Practice of Physical Therapy in the Philippines A Multi-method Quantitative Study 2022, (Filipiniana Analytics) NP

Peripapillary Microvascular Parameters in Unilateral Open-Angle Glaucoma Using the Optical Coherence Tomography-Angiography

de Leon, John Mark S. , Paulino, Victor Ephra

Objective: This study compared the peripapillary retinal nerve fiber layer (pRNFL) microangiographic properties [vessel area density (VAD) and blood flux index (BFI)] of unilateral open-angle glaucomatous eyes to contralateral eyes-at-risk, and to eyes of healthy age- and sex-matched subjects.

Methods: This was a single-center, case-control study of Filipinos diagnosed with unilateral primary openangle glaucoma (POAG) or normal-tension glaucoma (NTG). Mean overall and quadrantal VAD and BFI of the three groups were measured with optical coherence tomography- angiography (OCT-A). Area under the receiver operating characteristic (AROC) was used to measure diagnostic ability.

Results: Twenty-two (22) glaucomatous subjects (15 POAG and 7 NTG eyes), 22 contralateral eyes-at-risk, and 22 normal eyes from age- and sex-matched control subjects completed the study. Eyes with glaucoma showed lower mean overall VAD (40%) and BFI (0.37) compared to eyes-at-risk (44.4% and 0.42, respectively; $p < 0.001$) and control eyes (45.6% and 0.44, respectively; $p < 0.001$). Mean VAD and BFI values of eyes-at-risk and control groups did not significantly differ from each other. Overall pRNFL thickness showed highest diagnostic accuracy for glaucoma (AROC = 0.97), followed by VAD (0.94), and BFI (0.88) ($p = 0.46$).

Conclusion: VAD and BFI were significantly diminished in unilateral open-angle glaucoma, suggesting that the utility of OCT-A in the detection of glaucoma is comparable to pRNFL thickness. **(Author's abstract)**

Keywords: *OCT-angiography, Peripapillary microcirculation, Blood flux index, Vessel area density, Unilateral glaucoma, Medicine*

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(Filipiniana Analytics)
NP

0320

Peritoneal Dialysis for Refractory Heart Failure from a Congenitally Corrected Transposition of the Great Arteries who has not Undergone Definitive Surgery: A Case Report

Estacio, Agnes D. Mejia, Ronaldo H., Manalili, Sheryll A

Heart failure (HF) is a major cause of significant morbidity, mortality, and hospitalization worldwide including the Philippines. Congenitally corrected transposition of the great arteries (C-TGA) occurs when the right atrium enters the morphological left ventricle which gives rise to the pulmonary artery and the left atrium communicates with the right ventricle which gives rise to the aorta. Heart failure can occur in C-TGA especially if associated with other heart defects. Ideal management is anatomic correction via surgery to prevent or address heart failure. Peritoneal dialysis has been used as a therapeutic intervention for patients with refractory heart failure and kidney injury with or without kidney failure due to its gentler fluid removal compared to conventional ultrafiltration resulting in less myocardial stunning and neurohormonal activation. We present the case of a patient with heart failure who started on peritoneal dialysis (PD) as an adjunct therapy for fluid management after failing to satisfactorily achieve volume control with diuretics.

The patient is a 56-year-old man with C-TGA admitted for decompensated heart failure. He was initially treated with intravenous diuretics on the first admission but was readmitted after 3 months for decompensation this time with borderline low blood pressure making diuresis difficult. The patient was given loop diuretics, tolvaptan, and angiotensin receptor neprilysin inhibitor (ARNI) but still with decreasing trends in urine output and inadequate symptom control. PD was initiated before discharge with subsequent improvement in heart failure symptoms. The patient was on regular follow-up for PD maintenance and titration of heart failure medication.

In this case report, we have shown how PD can be an effective adjunct to guideline-directed medical therapy in patients with severely symptomatic heart failure who have an unstable hemodynamic status and for which volume management cannot be satisfactorily achieved with diuretics. **(Author's abstract)**

Keywords: *Peritoneal dialysis, Heart failure, Congenital heart disease, Congenitally corrected transposition of the great arteries, Diuresis, Ultrafiltration, Medicine*

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2023,
(Filipiniana Analytics)
NP

Persistent trophoblastic neoplasia in the broad ligament,: a case report

Cole, Lilli May T. , Pacleb, Ava Katrina B., Junio, Rosalie

Gestational trophoblastic neoplasia (GTN), a malignancy arising from trophoblastic tissue of pregnancy, is an aggressive disease process with a high probability of metastasis if left untreated. This is a case report on metastatic invasive mole arising from a molar pregnancy. Four months after suction curettage, a mass was noted in the left broad ligament on exploratory laparotomy with intact uterine serosa. Clinical presentation, biochemical, and radiological parameters led to a diagnosis of persistent trophoblastic disease. Histopathological findings also confirmed the diagnosis. Prompt chemotherapy was given after removal of the left intraligamentary mass, and subsequent response to treatment was documented. We report a case demonstrating a different clinical presentation of invasive mole and its potential to metastasize to the broad ligament without uterine perforation or direct extension. **(Author's abstract)**

Keywords: *Gestational trophoblastic neoplasia, Hydatidiform mole invasive, Methotrexate chemotherapy, Postmolar gestational trophoblastic disease, Medicine*

Health Science Journal, Volume No. 11 Issue No. 2, 138-147
2022 July to December,
(Filipiniana Analytics)
NP

Physical Therapy Differential Diagnosis for a Patient with Viral Central Nervous System Infection in Acute Care: A Case Study

Castillo, Mich

Introduction: This case report presents a patient with respiratory distress who went into coma and was admitted in the intensive care unit (ICU). The paper will discuss the initial impressions in the ICU and the differential diagnosis considered to arrive at an accurate diagnosis. It will demonstrate how information from physical therapy contributed to discern the proper diagnosis, and the evolving treatment plan and interventions as the patient progressed and discharged out of the ICU into the hospital floors.

Methods: This is a case of a 32-year-old male who self-admitted to the emergency department (ED) of his local hospital due to shortness of breath, weakness, and high fever. The study will detail how physical therapy helped analyze the patient's condition to arrive at the most appropriate management of the patient.

Results: The patient underwent 10 physical therapy sessions in the acute care setting before being transferred out to an acute rehabilitation unit, and then discharged to home.

Discussion: This article highlights the role of physical therapy in acute care rehabilitation of a patient with a complex presentation following a viral central nervous system (CNS) disease and its efforts in ensuring proper discharge disposition. **(Author's abstract)**

Keywords: *Viral cns infection, Encephalitis, ICU management, Guillain-barre syndrome, Critical illness polyneuromyopathy (cipnm), Acute care physical therapy, Discharge planning in acute care, Medicine*

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2022,
(Filipiniana Analytics)

Polycystic Ovarian Syndrome: Association of Phenotypes with Prediabetes and Diabetes Mellitus Type 2: A Cross-Sectional study

Bustos, Rhodora D. , Capellan, Maria Leonora D. , Aviles, Edna

Introduction: Polycystic ovarian syndrome (PCOS) has been recognized as a risk factor for metabolic dysfunction. The objective of this study was to determine the association of each PCOS phenotype with the risk for prediabetes and diabetes mellitus (DM).

Methods: This was a cross-sectional study by chart review of PCOS patients classified into 4 phenotypes, who consulted at outpatient clinics in Makati Medical Center. Odds ratio using logistic regression was used to determine association between the PCOS phenotype and having prediabetes or DM Type 2.

Results: One hundred thirty-four records of eligible females diagnosed with PCOS classified as Phenotype D (52%), Phenotype A (22%), Phenotype C (19%) and Phenotype B (7.5%), were included. Pre-diabetes was diagnosed in 39.6%, and DM type 2 in 7.5% of the women. Univariate association of phenotype and outcome revealed that DM is significantly more common among phenotypes A and D while prediabetes is significantly most common among phenotype D. However, multivariate regression did not show any positive association between phenotypes and risk for prediabetes and DM.

Conclusion: Phenotypes A and C were significantly negatively associated with the risk of prediabetes or DM type 2. Obesity and abdominal adiposity were aggravating factors that increased metabolic risk. (**Author's abstract**)

Keywords: *PCOS phenotypes, Prevalence, Diabetes mellitus, Prediabetes, Medicine*

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(Filipiniana Analytics)
NP

A Population-based Cross-sectional Study of the Status of Diabetes Care in the Philippines (PhilDiabCare 2020)

Fernando, Richard Elwyn , Tan, Rima T. , Sobrepeña, Leorino M. , Panelo, Araceli A. , Ang, Ernesto L., Lim, Marcelo A. , Juangco, Jose Ronil

Background. Worldwide, diabetes mellitus (DM) is a serious health issue with a global prevalence of 9.8% in 2021. According to the latest 2018 Expanded National Health and Nutrition survey done by the DOST-FNRI, the prevalence of diabetes in the Philippines have more than doubled from 3.4% in 2003 to 7.9% in 2018. The latest research conducted regarding diabetes care in the Philippines was in 2008 which showed that 85% of patients with diabetes failed to achieve the HbA1c general target of <7%.

Objectives. A population-based cross-sectional study to update the current status of diabetes care in the Philippines, specifically to determine glycemic control, trends in DM management, prevalence of complications and lastly their clinico-socio demographic profile.

Methods. 340 patients with diabetes were included from the clinics of the Institute for Studies on Diabetes Foundation, Inc. physicians. The following data were collected: clinico-socio demographic profile, HbA1C-based

glycemic control, trend in the use of glucose lowering agents, and prevalence of diabetes complications.

Results. The mean age of the 340 patients with diabetes in this study was 62 years old. Almost sixty-seven percent (66.8%) were females. The mean body mass index was 26 kg/m². The mean duration of diabetes was 12.63 years. Close to sixty-eight percent (67.6%) had tertiary education, 58.8% were unemployed and 65% had above minimum income.

The most commonly used single oral agent was biguanide (72.9%), followed by dipeptidyl peptidase-4 inhibitors (64.3%). The most common dual therapy combinations were biguanide plus dipeptidyl peptidase-4 inhibitors (43.2%), biguanide plus sulfonylureas (27.2%), and biguanide plus sodium-glucose co-transporter-2 inhibitors (11.1%). Basal insulin was the most commonly used injectable agent.

The present study showed that 47.4% of patients achieved an HbA_{1c} of <7%. For the microvascular complication group alone, most had neuropathy (30.4%) followed by nephropathy (17.3%) and by retinopathy (5.4%). For the macrovascular complication group, the most common was coronary artery disease (82%) followed by peripheral artery disease and DM foot (27%). Overall, the most frequent DM complication identified was neuropathy (30.4%), nephropathy (17.3%) and coronary heart disease (16.1%).

Discussion. Compared to the 2008 study, oral glucose lowering agents' usage shifted from sulfonylureas to more use of dipeptidyl peptidase-4 inhibitors. There was a decline in the use of thiazolidinediones, α -glucosidase inhibitors and non-use of meglitinides. For insulin use, there was a shift from the use of premixed insulin to more basal insulin usage.

There was marked improvement in the diabetes care situation in the Philippines from the 2008 study to the 2020 study. Glycemic control defined as HbA_{1c} level of <7.0 increased from 15% to 47.4%. Coronary artery disease was the most common macrovascular complication while neuropathy was the most common overall and microvascular complication. (**Author's abstract**)

Keywords: *HbA_{1c}, Diabetes Complications, PhilDiabCare, Glycemic Control, T2DM, Comorbidities, Management, Medicine*

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0325

Post-operative Aspirin in preventing early renal allograft thrombosis: A Meta-Analysis

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Background: Kidney transplantation (KT) remains to be the preferred mode of renal replacement therapy as it offers the best clinical outcomes, a better quality of life, and lesser complications compared to dialysis. However, KT still carries a number of complications, one of which is graft thrombosis. Despite advancements in treatment, graft thrombosis is still an important cause of early graft loss. Prevention therefore, is of significance. A growing number of evidence suggests that low-dose aspirin has a role in the primary prevention of allograft thrombosis.

Research Question: Among renal transplant recipients, does postoperative aspirin prevent early renal allograft thrombosis?

Objective: To conduct a meta-analysis to determine the effect of postoperative aspirin on preventing renal allograft thrombosis.

Methods: A systematic search of PubMed, Google Scholar, CENTRAL, and clinicaltrials.gov was done by two independent authors. All randomized and non-randomized studies determining the effect of postoperative aspirin

on renal vein/allograft thrombosis were reviewed for eligibility and quality assessment. Studies on both adult and pediatric kidney transplant recipients were included.

Results: Five non-randomized cohort studies (3 in adults, 2 in children) with a total of 2,393 patients were included. Using the Newcastle-Ottawa scale, two studies were found to have good quality, while three had poor quality. In a fixed-effects meta-analysis, aspirin was associated with a reduced risk for renal allograft thrombosis in adults (RR 0.13; 95% CI 0.06, 0.28; I² 22%) and children (RR 0.11; 95% CI 0.03, 0.40; I² 0%).

Conclusion: Post-operative aspirin was associated with reduced risk for renal allograft thrombosis in both adults and children. However, the best available evidence is limited to observational studies. A well-designed randomized controlled trial is needed to confirm this finding. **(Author's abstract)**

Keywords: Aspirin, Renal vein thrombosis, Renal allograft thrombosis, Medicine

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0326

Postoperative Safety Outcomes in Patients Undergoing Routine Phacoemulsification Cataract Surgery with Intraoperative Intracameral Injection of Preservative-Free Moxifloxacin versus Levofloxacin

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Purpose: This study compared the safety outcomes of two intracameral fluoroquinolone antibiotics, moxifloxacin and levofloxacin, as prophylaxis treatment in eyes that underwent uncomplicated cataract surgery.

Methods: This is a prospective, double-masked, randomized, interventional, single-center clinical trial. Eyes with visually-significant cataracts underwent phacoemulsification and received preservative-free intracameral 0.5% moxifloxacin [58 eyes (M group)] or 0.5% levofloxacin [56 eyes (L group)] at the end of the surgery as antibiotic prophylaxis. The following safety parameters were evaluated postoperatively at Day 1, Week 1 and Month 1: central retinal thickness (CRT), macular volume (MV), central corneal thickness (CCT), and endothelial cell density (ECD). In-between group comparison was made at each of the 4 study visits using Student's t-test.

Results: Both M and L groups had similar baseline characteristics. There were no significant differences in CRT, MV, CCT and ECD between the 2 groups at each time point in the study. There were no significant differences in the mean changes in CRT, MV, CCT and ECD from baseline to final visit between the 2 groups. No study-related adverse events were observed during the study period.

Conclusion: Intracameral application of preservative-free 0.5% moxifloxacin and 0.5% levofloxacin appear to have similar safety outcomes when used as antibacterial prophylaxis among eyes undergoing cataract surgery. Based on the results, both fluoroquinolone agents are potentially suitable options for endophthalmitis chemoprophylaxis. **(Author's abstract)**

Keywords: Levofloxacin, Moxifloxacin, Fluoroquinolone, Cataract surgery, Endophthalmitis prophylaxis, Medicine

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Prenatal and Postnatal Interventions and Neonatal Mortality among Adolescent Pregnancies in the Cordillera Administrative Region

Pascua, Jona

Background: Adolescent pregnancy remains a significant public health problem in the Philippines wherein teenage pregnancy has been declared as a National Social Emergency.

Objectives: This study aims to identify the received services and interventions during prenatal and postnatal visits and investigate the relationships between the received services and interventions during visits and the completeness of received services to neonatal death among adolescent pregnancies in the Cordillera Administrative Region.

Methods: This study used a descriptive correlational study design. A survey questionnaire was distributed to target participants among selected municipalities in the Cordillera Administrative Region and asked about the received services/interventions during and after pregnancy. Responses were analyzed using frequency and percentage, Chi-square and Phi Correlation Coefficient.

Results: The study showed that a high incidence of neonatal deaths occurs during the first delivery while decreasing prenatal and post-natal visits have been noted. It was also observed that neonatal mortality is high particularly among the category of middle adolescents. The study also demonstrated a significant correlation between Blood Testing and Measurement of the Abdomen or fundal height measurement provided to the respondents and neonatal mortality in the third trimester. However, no significant correlation coefficients have been noted between neonatal mortality and completeness of prenatal and postnatal services.

Conclusion: Policies and programs on adolescent health development should be enhanced, first, to focus on preventing adolescent pregnancy and repeat pregnancies during the adolescent period, while strengthening the access to health services for all pregnant women, especially adolescent mothers. **(Author's abstract)**

Keywords: *Adolescent Pregnancy, Neonatal Mortality, Primary Health Care Services, Interventions, Medicine*

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Pre-operative Glycosylated Hemoglobin Level and Fasting Blood Sugar as Markers for Risk of Acute Kidney Injury in the Immediate Post-Operative Period Among Type 2 Diabetic Patients After Elective Abdominal Surgery

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Objectives. The study aimed to identify whether pre-operative glycosylated hemoglobin level (HbA1c) and fasting blood sugar (FBS) can be used as markers for the development of acute kidney injury (AKI) in the immediate post-operative period of type 2 diabetic patients after elective abdominal surgery.

Methods. This retrospective cohort pilot study included seventy-four diabetic patients who underwent elective abdominal surgery from 2015 to 2018. HbA1c and FBS, demographic data, comorbidities, type and indication of surgery, and treatment history were correlated with the development of AKI using logistic regression analysis.

Results. In this cohort, 12% of subjects developed AKI. Univariate and multivariate logistic regression analysis, however, showed that neither HbA1c and FBS nor other studied factors were predictive for the occurrence of AKI (OR 2.55, p= 0.26 and OR 0.64, p= 0.72 respectively).

Conclusion. Pre-operative HbA1c and one-time FBS values in diabetic patients undergoing elective abdominal surgery procedures were not statistically predictive of AKI in the present data. However, the observed trend towards the risk of AKI among the elevated HbA1c subset of patients should drive further studies with a greater sample size and of a prospective nature looking at other metabolic factors contributing to AKI. (**Author's abstract**)

Keywords: *Pre-operative Glycosylated Hemoglobin level, Fasting Blood Sugar, Acute Kidney Injury, Medicine*

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0329

The Prevalence and Analysis of Related Factors of Anxiety, Depression, and Quality of Life of Out-Patients in the Cancer Institute of a COVID-19 Referral Tertiary Hospital: One Year into the Pandemic

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Objective. This study aimed to determine the prevalence, analyze, and compare the risk factors of anxiety, depression, and quality of life of cancer patients in the out-patient cancer clinic of the Cancer Institute one year into the pandemic. These were compared to the prevalence of anxiety and depression before the pandemic.

Methods. A cross-sectional analytic study described the prevalence of anxiety, depression, and quality of life and analysis of its related factors among patients with cancer seen in the outpatient cancer clinic of the Cancer Institute of the Philippine General Hospital from November 1 to 20, 2021, using the Hospital Anxiety and Depression Scale – Pilipino and EORTC (European Organisation for Research and Treatment of Cancer) QLQ-C30 (Quality of Life questionnaire) tools.

Results. A total of 408 cancer patients were enrolled in the study. The prevalence of anxiety and depression was 58.33% and 24.51%, respectively. Before the pandemic, the prevalence of anxiety and depression was 9.45% and 4.72%, respectively. Two hundred seventy participants (66.18%) had a positive quality of life. The comparison between the prevalence of anxiety and depression between this study (one year into the pandemic) and the pre-pandemic study revealed a statistically significant difference in the majority of both, with more anxious and depressed cancer patients in this study. The participants agreed that the pandemic had affected their daily activities.

Conclusion. The study showed that the COVID-19 pandemic significantly increased anxiety and depression among cancer patients. The quality of life (QOL) of cancer patients in this study has not been distinctly affected by the pandemic, but for those who have, they still require the attention and support of not just the physicians but the community as a whole. Our findings highlight the need to integrate better psychosocial support and the important role of carers in the evolving pandemic response measures. (**Author's abstract**)

Keywords: *Cancer outpatients, Pandemic, Anxiety, Depression, Quality of life, Cancer, COVID-19, Medicine*

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0330

Prevalence and Associated Clinical Factors of Gastro-esophageal Reflux Disease in Filipino Hemodialysis Patients: A Cross Sectional Study

Co, Mark Isaiah , Takahashi, Kento, Apostol-Alday, Angela , De Aquino, Al

Introduction: Reflux is one of the most common gastrointestinal symptoms among dialysis patients. This may be associated with several clinical factors such as comorbidities and subsequent polypharmacy. However, this remains unrecognized and untreated.

Objectives: The objectives of this study were to determine the prevalence of Gastroesophageal Reflux Disease (GERD) in Filipino patients on maintenance hemodialysis (HD) and to investigate associated demographic, clinical, and renal profiles of HD patients with and without GERD.

Methods: This was a cross-sectional, multicenter study using a validated GERD questionnaire (GERDQ) translated into Filipino. Patients above 18 years old undergoing hemodialysis as outpatients were included. Several clinical factors such as demographic, clinical, and renal profiles were analyzed based on the absence and presence of GERD with a predetermined cut-off value of eight or above.

Results: Included in our analysis were 264 patients, from which 36 had GERDQ score of ≥ 8 (13.64% 95%CI 9.98-18.35). Factors associated with having score of ≥ 8 included the following: (1) having chronic heart disease or CHD (COR 4.041, 95%CI 1.89-8.64, $p<0.001$), (2) being on insulin (COR 2.599, 95%CI 1.25-5.42, $p=0.011$), (3) anemia (COR 4.508, 95%CI 1.91-10.64, $p=0.001$) (4) diagnosis of both hypertensive kidney disease and diabetes kidney disease (COR 3.853, 95%CI 1.15-12.96, $p=0.029$), (5) previous diagnosis of GERD (COR 6.655, 95%CI 3.18-13.91, $p<0.001$), (6) previous intake of antacids (COR 2.622, 95%CI 1.17-5.89, $p=0.020$), (7) being employed (COR 2.332, 95%CI 1.15-4.75, $p=0.020$) (8) alcohol consumption (COR 2.477, 95%CI 1.23-5.01, $p=0.012$), and (9) smoking (COR 2.405, 95%CI 1.19-4.86, $p=0.014$).

Conclusion: In our study, the prevalence of GERD in Filipino HD patients was 13.64% and may be associated with several clinical factors such as heart disease, insulin use, anemia, hypertension, diabetic kidney disease, previous diagnosis of GERD, use of antacids, being employed, smoking, and alcohol use. A comprehensive understanding of the relationships between these clinical factors awaits further studies in a larger number of patients. (Author's abstract)

Keywords: GERD, GERDQ, Filipino translation, Chronic Kidney Disease, Hemodialysis, Medicine

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0331

Prevalence and Clinical Outcomes of Patients with Diabetic Ketoacidosis/Hyperglycemic Hyperosmolar Syndrome and COVID-19: A Systematic Review

Cunanan, Elaine C. , Caro, Marilyn Katrina C. , Villamonte, Sh

BACKGROUND AND OBJECTIVES. Several reports have shown that coexistence of diabetes mellitus and COVID-19 is one of the risk factors for poor outcome and increased mortality. Rapid metabolic deterioration with development of diabetic ketoacidosis (DKA) or hyperglycemic hyperosmolar syndrome (HHS) may result due to the acute insulin secretory capacity loss, stress condition and the cytokine storm. In this review, we aim to describe the prevalence of hyperglycemic crises (DKA/HHS) in patients with COVID-19 infection as well as their clinical outcomes.

METHODS. An intensive search was done using the WebMD, PubMed, Medline and Google Scholar databases for articles published between December 2019 to October 2020 that identified the number of patients who developed DKA and/or HHS among those who were admitted for COVID-19. Their clinical outcomes were

likewise

described.

RESULTS. This review included 4 articles in which individual quality was assessed. A total of 1282 patients were admitted for COVID-19 and the prevalence of DKA was 1.32%. HHS was not reported in any of the studies. Five (29.4%) of the patients with DKA and COVID-19 died and 12 (70.6%) recovered.

CONCLUSIONS. A significant number of COVID-19 patients developed DKA and it is associated with a high mortality rate. This reimposes the need for an appropriate algorithm for the optimal management of concomitant COVID 19 and hyperglycemic crises to avoid morbidity and mortality. Additionally, there is paucity of large-scale studies describing the prevalence of DKA/HHS in patients with COVID-19. **(Author's abstract)**

Keywords: *Diabetic ketoacidosis, Diabetic hyperosmolar syndrome, COVID-19, Medicine*

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0332

Prevalence of burnout and its perceived contributing factors among Level III physical therapy students

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Introduction Physical therapy students, who train on how to handle patients, also experience burnout due to social, academic, and personal factors. The study aimed to determine the prevalence of burnout among third year physical therapy students of UERM and the factors that contribute to it.

Methods A descriptive cross-sectional research design was used to determine the prevalence of burnout and its perceived contributing factors. Eligible students answered the Maslach Burnout Inventory General Survey for Students (MBI-GS(S)) and a self-developed questionnaire regarding academic, social, and personal factors of burnout. Microsoft Excel was used to compute the standard (z) values and prevalence rate.

Results None of the 26 respondents fit the criteria to be classified as “burnout”, however 42.3% were “overextended”, 34.6% were “ineffective” and 23.1% were “engaged”. The top factors reported by the participants were too much workload to handle, being left behind academically compared to peers, and pushing oneself too hard for the academic, social, and personal categories, respectively

Conclusion None of the limited number of respondents met the criteria for “burnout”. The most perceived academic reason contributing to their burnout is the volume of workload. The feeling of being left behind academically compared to their peers was shown to be the most perceived social factor. The tendency to push themselves too hard to accomplish their task perfectly/completely was seen as the most perceived personal factor in this study. **(Author's abstract)**

Keywords: *Burnout, Physical therapy, Students, College students, Contributors, Factors, Medicine*

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0333

The Prevalence of Non-Alcoholic Fatty Liver Disease and its Association with Glycemic Control in Type 2 Diabetes Mellitus Patients at the Batangas Medical Center-Out-Patient Department

Santos, Florence A. , Anzo, Ferdin

Background: Diabetes mellitus is a chronic disease which has been increasing both in incidence and global impact. In the Philippines, cases of diabetes mellitus increase at an alarming rate. Previous study in Nigeria among Type 2 Diabetic patients with non-alcoholic fatty liver disease (NAFLD) has observed an increased prevalence of 69%. However, there is no definite association between severity of NAFLD and glycemic control (HbA1c).

Objectives: To investigate the prevalence of NAFLD and its association with glycemic control of Type 2 Diabetes Mellitus (T2DM) patients at Batangas Medical Center (BatMC) – Out Patient Department (OPD).

Methods: A single center, cross sectional study was performed on 80 T2DM patients, who underwent OPD consultation between November 2020 to October 2021. Clinicodemographic profile, duration of T2DM, diagnostic tests including HbA1c and ultrasound of the liver were taken. *Chi-Square* test of homogeneity and *Fisher's Exact test/Fisher-Freeman-Halton* test were utilized for comparison of categorical variables from a single population to determine whether there is a significant association between the severity of NAFLD and patients characteristics and glycemic control.

Results: 80 T2DM patients were included in the analysis, there was an equal number of male (50%) and female (50%). Majority of the patients were in the age of 50 – 59 years old (33%), with a BMI of 25 and above (81%), had been diagnosed with T2DM for > 5 years (72%) and maintained with oral hypoglycemic agents (68%). The prevalence of NAFLD by ultrasonography among T2DM patients was 81%. 80% of these patients had mild NAFLD and 20% had moderate NAFLD; but none had severe NAFLD. The average HbA1c level of 8.9% had a mild NAFLD compared to patients with moderate NAFLD with an average HbA1c level of 10.1%. With a $p=0.053$, NAFLD severity and glycemic control do not show any statistically significant association. Subgroup analysis was not performed in the study due to limited sample size. In addition, results of association are not sufficient evidence for any conclusion; hence, there appear to be no group of interest.

Conclusion: The result of this study confirmed that the prevalence of NAFLD in T2DM was high at 81% but there is no sufficient evidence to conclude a statistically significant association between the level of glycemic control and the severity of NAFLD. (**Author's abstract**)

Keywords: *Type 2 Diabetes Mellitus, Non-Alcoholic Fatty Liver Disease, NAFLD, Glycemic control, HbA1c, Dyslipidemia, Obesity, Metabolic Syndrome, Medicine*

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0334

Primary Aldosteronism among Adult Filipinos with Resistant Hypertension: A Pilot Study

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Background: Primary aldosteronism (PA) was previously thought to be uncommon. With the utilization of plasma aldosterone concentration and plasma renin activity ratio (PAC/PRA) as a mode of screening, the frequency of its detection increased significantly. Among the population with an indication for PA screening, resistant hypertension has the highest prevalence. Detection of PA in this group is essential since it is associated with increased cardiovascular and cerebrovascular complications.

Objective: To determine the prevalence of PA among adult Filipinos at Capitol University Medical Center,

Cagayan de Oro City, Misamis Oriental.

Methods: Adult Filipino patients with resistant hypertension underwent PA screening using the PAC/PRA. Patients with positive results were confirmed for PA either through IV saline infusion or using the following criteria: history of spontaneous hypokalemia or documented hypokalemia prior to screening, undetectable PRA (< 1 ng/ml/hour), and a PAC of > 15 ng/dl.

Results: Twenty-one patients were recruited, but only fourteen participated in the study. Thirty five percent of those who participated screened positive for PA. Among those who screened positive, three patients were confirmed of having PA.

Conclusion: The prevalence of PA in adult Filipinos with resistant hypertension in Capitol University Medical Center, Cagayan de Oro City, Misamis Oriental is estimated to be 21.43%. (**Author's abstract**)

Keywords: *Primary aldosteronism, Filipinos, Resistant hypertension, Medicine*

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0335

Prognostic Accuracy of qSOFA, NEWS, SIRS Criteria for In- Hospital Mortality Among Patients with Suspected Infection Presenting to the Emergency Department in a Tertiary Hospital in Cebu City: A Prospective Study

Pe, Maria Nadith L. , Olasiman, Chatie D. , Tan, Christ

Introduction: Sepsis has been redefined as a life-threatening organ dysfunction caused by a dysregulated host response to infection. The quick sepsis-related organ failure assessment (qSOFA) is a simple tool developed to prompt clinicians to consider patients at high risk for poor outcome. Studies have compared its utility with National Early Warning Score (NEWS) and the systemic inflammatory response syndrome (SIRS) criteria. These scoring systems may be utilized to prognosticate illness severity among patients with suspected infection and may be relevant in low- and middle-income settings where laboratory data are not readily available.

Objective: To determine and compare the accuracy of qSOFA, NEWS, and SIRS criteria in predicting in-hospital mortality in patients suspected to have infection presenting at the emergency department (ED)

Methods: This is a prospective cohort study. Patients ≥ 18 years old with suspected infection admitted to the ED between June 2018 to July 2018 were included in the study. SIRS, NEWS, and qSOFA scores were collected at presentation and patients were followed up until expired or discharged.

Results: A final population of 213 were included in the study with a mean age of 47 years (SD 21.2) and 124 (58.2%) females. The most common site of infection was respiratory (33.8%). Twelve patients (5.6%) died in-hospital. Among patients with $qSOFA \geq 2$, mortality rate was at 38% vs 3.5% for $qSOFA < 2$. Specificity for mortality was highest for qSOFA (96%). Sensitivity was highest for SIRS (75%). SIRS, qSOFA, and NEWS had no significant difference in predicting in-hospital mortality with an area under the receiver operating curve of 0.659, 0.711, 0.711 respectively.

Conclusion: SIRS, qSOFA, and NEWS have similar prognostic accuracy to predict mortality but have limited use when applied individually which brings into question the sole utility of qSOFA despite its high specificity. It is reasonable to further validate or develop new scoring systems with higher predictive accuracy appropriate across different populations. (**Author's abstract**)

Keywords: *Sepsis, qSOFA, SIRS, NEWS, Medicine*

Progressive Interstitial Lung Disease in a Clinically Quiescent Dermatomyositis
*Cruz-Bermudez, Charito , Urquiza, Sheen C. , Quinto, Milraam L. , Lomanta, Jan Michael Jesse C.,
Santiaguel, Joe*

A 60-year-old Filipino woman diagnosed with dermatomyositis was initially on prednisone and methotrexate. She eventually developed interstitial lung disease (ILD) and so methotrexate was shifted to azathioprine; however, azathioprine was discontinued due to cutaneous tuberculosis. Over eight years, the dermatomyositis was controlled by prednisone alone but the ILD worsened. This case demonstrated that the course of ILD may be independent of dermatomyositis. **(Author's abstract)**

Keywords: *Dermatomyositis, Interstitial lung disease, Immunomodulators, Medicine*

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Promotion of Safe Motherhood in the Nursing Competency-Based Curriculum
Sana, Erlyn A. , Peralta, Arn

Purpose: Nurses play a significant role in maternal health. The nursing competency-based curriculum prepares students for this role. This study identified the competencies on safe motherhood expected of graduating nursing students, determined the degree of integration of these competencies in the curriculum, and described students' perceived levels of proficiency in performing said competencies.

Design: This is a descriptive cross-sectional study. The authors deduced concepts and principles of safe motherhood in nursing based on the 2006 standard competencies. A complete enumeration of 55 graduating students of a college of nursing in a state university in Manila participated in the study.

Methods: Students rated the competencies from A: "concepts were merely introduced" to D, "threaded through" in selected courses. The level of proficiency ranged from 1: "can perform well without supervision" to 4 "cannot perform despite supervision." Ratings were analyzed using frequency counts, mode, and percentage distributions.

Findings: Seventy competencies on safe motherhood were derived. Cognitive and affective competencies on the basic nursing processes were threaded through in foundation, intervention, and intensive nursing process courses. Students could perform the cognitive and affective competencies without supervision but required assistance in performance of skills.

Conclusion: The nursing curriculum prepares students to promote safe motherhood; however, students need to improve their clinical skills to be fully competent. **(Author's abstract)**

A Prospective Observational Study on the Risk of Contrast-Induced Nephropathy Among Patients Undergoing Fundus Fluorescein Angiography

Aguilar, Romulo N. , Naidas, NiÃ±o Carlo M., Jordan, Catherine E. , Crisostomo, Arlene

Objective: To determine the incidence of contrast-induced nephropathy (CIN) among patients undergoing fundus fluorescein angiography (FFA)

Methods: One hundred fifty-nine (159) patients from the Ophthalmology out-patient department were enrolled in this prospective, observational study. Serum creatinine (SCr) and estimated glomerular filtration rate (eGFR) were measured within 7 days before and 48 to 72 hours after FFA. Subjects were stratified into low-, intermediate-, and high-risk groups for developing CIN according to baseline eGFR. CIN was defined by an increase in SCr by more than 25% or by 0.5 mg/dL within 72 hours of intravascular administration of contrast media. The incidence of CIN, changes in SCr levels, and changes in eGFR were analyzed.

Results: Of the 144 subjects who completed the study, 106 (73.6%) were females, 105 (72.9 %) were diabetics, and 57 (39.6%) had elevated baseline SCr. Four (4 or 2.8%) patients developed CIN after FFA, all of whom had normal baseline SCr and were stratified as low-risks. Overall, there were no significant changes in the means of SCr (1.18 ± 0.56 vs 1.16 ± 0.52 , $p = 0.13$) and eGFR (64.53 ± 26.05 vs 64.94 ± 24.88 , $p = 0.64$) before and after FFA. In the low-risk group, the means of SCr and eGFR remained unchanged after FFA ($p = 0.06$ and $p = 0.15$, respectively). In the intermediate-risk group, no significant change was appreciated in SCr levels ($p = 0.07$) however a significant improvement in eGFR ($p = 0.006$) was seen. Interestingly, a significant decrease in SCr levels ($p = 0.004$) as well as a significant improvement in eGFR ($p = 0.02$) was noted after FFA in the high-risk group.

Conclusion: The incidence of CIN among patients undergoing FFA in our cohort was 2.8%. There was no prolonged or serious worsening of renal function based on SCr and eGFR before and after FFA overall, and among low-, moderate-, and high-risk groups. **(Author's abstract)**

Keywords: *Fluorescein angiography, Contrast-induced nephropathy, Acute kidney injury, Incidence, Contrast media, Creatinine, Estimated glomerular filtration rate, Medicine*

Provision of Risk Welfare for Nurse Educators: A Policy Brief

Del Rosario, Maria Karmela C. , Lorica, Mari Elaine P., Abiva, Zhiela Marie

Nurse educators are vital in the future of healthcare and deserve recognition and benefits for this role they play. Nurse educators who are exposed to clinical and community settings are facing challenges different from those in

the classroom setting. They are evidently at risk of exposure to numerous hazards, perils of life, and physical hardships when they do preceptorship to students. In accordance with the Commission on Higher Education (CHED) Memorandum Order (CMO) 15, a nurse educator must supervise a maximum of 10 students in clinical and community settings to complete the corresponding number of Related Learning Experience (RLE) contact hours equivalent to 1836 hours in every student.

It is crucial that reforms and regulations be made to recompense nurse educators. Risk welfare is a financial benefit for nurse educators performing preceptorship in intensive nursing practice or RLEs. It is a payment to cover actual or potential threats or dangers associated with carrying out RLE activities. Proposed rates for the benefit may depend on the area and number of days of actual exposure; however, hospital settings may be considered at greater risk, warranting higher payment. **(Author's abstract)**

Keywords: *Nurse Residency Program, Novice nurse, Training, Filipino nurses, Medicine*

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0340

A Qualitative Approach to Understanding the Need for Better Pay: Perspectives of Albayano Nurses Employed in Private Hospitals

Gogola, Den

Purpose: Scholarly works have reported about the nurses' salary and its impact on job satisfaction, nurse turnover, retention, work condition, and provision of nursing care. However, studies are either focused on the nurses in government hospitals or nurses working outside the country. Thus, the study aims to explore and describe the lived experience of nurses employed in private hospitals in Albay province, the Philippines, and explicate the need for better pay.

Design: The study used a qualitative design, specifically a descriptive phenomenology approach.

Methods: Purposive sampling and in-depth interviews were conducted among seventeen (17) nurse informants. The audio-recorded interviews were transcribed verbatim and analyzed following the seven-stage process as described by Colaizzi (1978) for data coding and identifying themes. The same process of analysis performed among the responses or data gathered through electronic communication platforms.

Findings: Four themes and nine sub-themes were identified. The first theme is 'Over but under,' which includes three sub-themes: (1) Over-worked, underpaid working conditions, (2) Finding an additional source of income as a result of low-wages, (3) More nurses are produced, but less are staying in the country, (4) Required by law in the country but not permitted by low salary. The second theme is 'Same but different,' which includes three sub-themes: (1) The Nursing profession is akin to others, yet uncompensated, (2) Work demands are comparable to government hospitals. The third theme is 'Caring but uncared-for,' which includes two sub-themes: (1) Psychologically upsetting, (2) Stimulates nurses transition. The fourth theme is 'Selfless foresight,' which include only one sub-theme (1) Increasing the salary attracts nurses to stay in the country.

Conclusions and recommendations: The study results showed that nurses in private hospitals need better remuneration as they experience poor work conditions. Also, it described a low salary that impacts the nurses' workload, their physical and mental health, their socio-economic being, their ability to avail professional development, the retention or turnover, and the provision of nursing care. The study findings suggest data triangulation of the study in some other private hospitals outside the region and explore strategies for increasing nurses' retention and satisfaction. Nonetheless, these efforts will robust the empirical data about the need for better pay among nurses in the private sector. **(Author's abstract)**

Keywords: *Salary, Better Pay, Nurses in Private Hospitals, Retention, Turnover, Job Satisfaction, Medicine*

Quality of Life After Ocular Trauma: A Prospective, Longitudinal, Questionnaire Based Study in a Tertiary Hospital in the Philippines

Lim Bon Siong, Ruben , Artiaga, Jose Ca

Purpose: To determine the health-related quality of life of patients sustaining ocular injuries prognosticated to be visually disabling and to correlate baseline characteristics with quality of life indices.

Methods: A prospective, questionnaire-based health-related quality of life study was conducted in a tertiary hospital in the Philippines among 33 patients prognosticated to have visually-disabling ocular injuries using the ocular trauma score (OTS). Clinical and demographic data were collected and quality of life indices were measured using the EuroQoL five-dimension five-level (EQ-5D-5L) questionnaire at baseline and on three subsequent follow-up visits. Data was analyzed by OTS and type of injury. Baseline characteristics were described and correlated with quality of life indices.

Results: Of the 33 participants recruited at baseline, 26 were able to return to at least 1 of the 3 recommended follow-up visits. The median age of study participants upon admission was 35 years old with 31 (94%) being males. The patients were admitted at a median of 4 days from injury. Thirty-one (31) or 94% of the participants sustained open globe injuries, with 14 (42%) being penetrating lacerations and 10 (30%) classified as having intraocular foreign bodies. Most patients reported pain and discomfort (82%), problems in usual activities (70%), and anxiety and depression (70%) at baseline. Those with an OTS of 1 had lower median EQ index score (0.447) and EQ visual analog scale (VAS) score (56). A diagnosis of globe rupture was associated with lower median EQ index scores (0.448) and EQ VAS scores (56). EQ index and VAS scores were lowest at baseline. A statistically significantly increase in EQ VAS was seen from baseline to the first month of follow-up ($p=0.01$). Using univariate regression analysis, no statistically significant correlation between baseline characteristics and baseline quality of life indices was identified.

Conclusion: Health-related quality of life was lowest shortly after admission for management of ocular trauma and significantly improved at 1 month. Most patients reported pain and discomfort, problems in usual activities, and anxiety and depression. None of the clinical characteristics were shown to be significantly associated with quality of life indices, including visual acuity. (**Author's abstract**)

Keywords: *Ocular trauma, Ocular injury, Eye injury, Health-related quality of life, Quality of life, Disability, Medicine*

Quality of Life of Patients with Diabetic Foot Ulcer on Recovering

Widiyanto, Puguh , Handayani, Estrin, Kep

Diabetic ulcer is a dangerous complication of diabetes mellitus associated with adverse consequences and high costs. Diabetic ulcers have a significant impact on quality of life. It is related to activity restriction, disabilities and the loss of mobility. Diabetic foot ulcers also lead to body image impairment and limitation of interaction with others. The purpose of this study was to identify the quality of life of patients with diabetic foot ulcer. This study used a descriptive method among 35 patients who had foot diabetic ulcer graded 2, 3, and 4. Findings of the study revealed that diabetic ulcer affects physical health, psychological health, social relationship and environment of 54.3%, 54.3%, 85.7% and 60%, respectively. Therefore, it is suggested that healthcare providers, their families, and the community give motivation, support, and education on patients with diabetic foot ulcer to achieve higher levels of quality of life. **(Author's abstract)**

Keywords: *Quality of life, Diabetic foot ulcer, Medicine*

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NP

0343

A quasi -experimental study on the effects of a breastfeeding reminder system on breastfeeding in two tertiary medical centers

Saymaaran, Benjie Marie E. , Nales, Jennifer M. , Magat, Maria Milagros U., Arcilla, Ma. Su

Introduction In the face of unchanging high rates of stunting among 12-23 months old Filipino babies, sustaining exclusive breastfeeding up to 6 months old remains a challenge. This study determined the effect of a breastfeeding reminder system on breastfeeding.

Methods This is a quasi-experimental study. Mothers were regularly given breastfeeding reminders by SMS and phone call. The weight, body length, episodes of upper respiratory tract infection and diarrhea were compared between the babies who were given exclusive breastfeeding and those whose exclusive breastfeeding was not sustained. Pearson Chi – square test and t-test at $p=0.05$ determined significance of differences of variables.

Results From March- October 2020, there were 450 babies included in the study. Of these babies, 44.8% were given exclusive breastfeeding up to 6 months. Timely initiation of breastfeeding was practiced by 91.95% of the mothers in the study. Babies who did not receive exclusive breastfeeding were shorter than those who received exclusive breastfeeding at 1 year old (70.11cm +2.78 vs.75.47cm +1.41, $p<0.001$) and at 2 years old (80.89 cm +2.30 vs. 87.29cm +1.47, $p<0.001$). At 2 years old, babies who received exclusive breastfeeding had no episodes of diarrhea and minimal (2%, $p<0.001$) episodes of acute respiratory infections.

Conclusion Due to the implementation of the reminder system, the percentage of babies exclusively breastfed up to 6 months of age increased to 44%. This is a significant improvement compared to a previous study where only 29% of the babies were exclusively breastfed. At one and two years old, babies who were not exclusively breastfed had stunting, weighed less and had more infections (diarrhea and URTI). **(Author's abstract)**

Keywords: *Exclusive breastfeeding, Infants, Stunting, Medicine*

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0344

A Randomized Controlled Trial on the Effect of Lutein Supplementation on Macular Pigment Optical Density and Macular Function in Pseudophakic Patients

Valero, Sherman O. , Uy, Edward C. , Paulino, Victor Ephra

Objective: To evaluate the efficacy of oral lutein supplementation on macular pigment optical density (MPOD) levels and macular function in pseudophakic eyes that underwent phacoemulsification.

Methods: This was a prospective, randomized, parallel-arm, single-masked study comparing oral lutein supplement 20 mg/tablet (Lutax 20) with non-supplementation in pseudophakic eyes. We assessed MPOD, low-luminance deficit (LLD), visual recovery time (VRT) using photostress test, and adverse events. One hundred twenty-eight (128) eyes were enrolled and randomized 1:1 to active treatment (lutein supplementation) or no treatment (no supplementation). The supplementation period was 12 weeks and patients were assessed every 4 weeks over a period of 16 weeks.

Results: Sixty-four (64) eyes in each group completed the study. A significant increase in MPOD ($p < 0.001$) was observed in the lutein supplemented group, from 0.36 DU at baseline to 0.55 DU at week 12, with a mean increase of $6.32 \pm 1.72\%$ per 4 weeks of supplementation compared with a mean MPOD decrease rate of $0.63 \pm 0.48\%$ in the non-supplementation group. A significant reduction in LLD was observed in the lutein-treated group, from LogMAR 0.063 at baseline to LogMAR 0.023 at Week 12 ($p = 0.003$). VRT was also significantly shorter in the treatment from a baseline of 83.06 to 68.80 seconds at Week 12 ($p < 0.001$).

Conclusion: Lutein supplementation (20 mg/tablet; Lutax 20) demonstrated a significant degree of MPOD augmentation, and reductions in LLD and VRT among patients who underwent phacoemulsification with lens implantation. (Author's abstract)

Keywords: Lutein supplementation, Macular pigment optical density, Pseudophakic, Low luminance deficit, Photostress test, Medicine

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0345

A RAPID REVIEW OF NURSES' EXPERIENCES WORKING IN HOSPITAL SETTINGS DURING THE COVID-19 PANDEMIC

Garma, Paul Froilan U. , Gilo, Ericka Louise C., Delgado, Niño Valentin

Background: Being at the frontline, nurses working in hospital settings are vulnerable to a range of experiences that impact their well-being. Measures to protect their health and welfare during the COVID-19 pandemic have been the focus of discussion among policy-makers and administrators. There is a need to collectively understand their personal experiences to inform relevant policy decisions.

Objective: To synthesize and present the best available evidence describing the experiences of nurses working in hospital settings during the COVID-19 pandemic.

Design: This is a rapid review using Tricco's seven stage process.

Data sources: A structured search using PubMed, CINAHL, Scopus, and a local database Herdin was conducted.

Review Methods: A rapid review of studies published from January to August 2020, describing nurses' experiences of working in hospital facilities during the COVID-19 pandemic were included regardless of methodology. Following data screening and extraction, a narrative synthesis of the findings was conducted. nurse experiences, COVID-19, pandemic, rapid review

Results: Nineteen articles were included in the review. The experiences of nurses described in these articles generated a total of fifteen categories, based on similarities of meaning. Four synthesized findings were identified from the categories: (a) supportive nursing culture; (b) physical, emotional, and psychological impact of frontline work; (c) organizational responsiveness; (d) and maintaining standards of care.

Conclusions: Nurses' experiences working in hospital settings during the COVID-19 pandemic are diverse, profound, and dependent on the context of practice and prevailing healthcare system and organization. These experiences reflect personal encounters and shifts in healthcare delivery that ensure protection and safety while maintaining standards of care. Robust studies are needed to capture and explore the breadth of these experiences and heighten the discussions that advocate for nurses' welfare and safety during pandemics. **(Author's abstract)**

Keywords: Nurse experiences, COVID-19, Pandemic, Rapid review, Medicine

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0346

A Rare Case of Human *Dioctophyma renale* infection in an Adult Filipino Male *Guerrero, Edison , Baluyut, Johanne S. , Villareal,*

Introduction: *Dioctophyma renale*, also known as the “giant kidney” worm is the largest nematode that infects mammals. Most commonly, it infects dogs and only a few cases of human infestation have been reported.

Case Presentation: In this case, we present a 71-year-old male with a history of right flank pain, painless hematuria, obstructive urinary symptoms and occasional passage of a long red meat-like structure via urethra. Previous ultrasonography revealed a renal mass that was interpreted as renal malignancy. Patient was advised radical nephrectomy with biopsy; however, he was lost to follow up. After 8 years, he again presented with a 2-month history of right flank pain, gross hematuria, unintentional weight loss and obstructive urinary symptoms. He was admitted to our institution and laboratory findings revealed microcytic hypochromic anemia. Ultrasound showed a focal bulge in the superior wall of the urinary bladder and an enlarged right kidney with a large heterogeneous solid structure. Insertion of a foley catheter relieved the urinary obstruction and there was noted passage of a single roundworm measuring 55 cm by 0.32 cm. The specimen was sent for histopathology and microscopic examination revealed a necrotic body of a roundworm consistent with *Dioctophyma renale*.

Case Discussion: The clinical manifestations of *D. renale* infection are non-specific and the diagnosis can be a challenge as it commonly mimics renal malignancy and other intra-abdominal tumors. The diagnosis is often an incidental finding of the parasite on necropsy or by finding ova in the urine. The clinical findings of painless hematuria, unintentional weight loss and an ultrasound finding of renal mass usually point toward the diagnosis of renal cell carcinoma.

As we present this case, it will be highlighted that such signs and symptoms, such as painless hematuria, unintentional weight loss and ultrasound finding of a renal mass, can also be found in patients with rare human parasitism from *Dioctophyma renale*. **(Author's abstract)**

Keywords: Medicine, Parasite, Nematode, *Dioctophyma*, Renal mass, Giant, Worm, Carcinoma, Kidney

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Rate of Progression of Visual Field Loss in Primary Open Angle Glaucoma Versus Primary Angle Closure Glaucoma Patients Managed in a Tertiary Hospital

FlorCruz, II, Nilo Vincent DG. , Protasio, Jesa Nad

Objectives: To compare the rate of progression of visual field loss in mean defect (MD) decibels (dB)/year in primary open angle glaucoma (POAG) versus primary angle closure glaucoma (PACG) patients managed in a tertiary hospital and to assess the impact of baseline age, baseline MD, and intraocular pressure (IOP) on the rate of progression of visual field loss.

Methods: This was a retrospective review of medical records of patients who were seen at the Glaucoma Clinic of a tertiary hospital from August to October 2018. The following data were recorded: diagnosis, number of reliable automated visual fields (AVFs), number of years followed, baseline age, baseline MD, MD of all subsequent AVFs, IOP at the time of each test, and IOP-lowering interventions. Rate of visual field progression expressed in dB/year was calculated using linear regression analysis. T-test was done to compare the baseline data and rates of progression of visual field loss between the POAG and PACG cohorts. Correlation using Pearson's r and multivariate analyses were performed to evaluate the effect of baseline age, baseline MD, and IOP on rate of progression of visual field loss.

Results: The mean rates of progression of visual field loss in POAG and PACG eyes were 0.12 ± 0.68 dB/year and 0.10 ± 0.59 dB/year, respectively ($p=0.8525$). Despite treatment, 4.35% of the study eyes were identified as fast progressors while 1.09% were catastrophic progressors. In the POAG group ($n=33$), laser treatment was negatively correlated with rate of progression of visual field loss ($r= -0.5072$, $p=0.0026$). Multivariate analysis showed that baseline MD ($p=0.017$), mean IOP on follow-up ($p=0.020$), and laser treatment ($p=0.004$) were significant factors affecting the rate of progression of visual field loss in POAG eyes. In the PACG group ($n=59$), both baseline MD ($r= -0.2798$, $p=0.0318$) and mean IOP on follow-up ($r= 0.368$, $p=0.0041$) correlated with rate of progression of visual field loss. Only mean IOP on follow-up was found to be significant on multivariate analysis.

Conclusion: While most glaucoma patients managed in a tertiary hospital have a slow rate of progression of visual field loss, a few were still identified as fast and catastrophic progressors. Factors associated with rate of progression of visual field loss were baseline MD, mean IOP on follow-up, and laser treatment for POAG, and mean IOP on follow-up for PACG. (**Author's abstract**)

Keywords: *Rate of visual field progression, Rate of visual field loss, Fast progressors, Catastrophic progressors, Glaucoma, Medicine*

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Recurrent Hypokalemia in an Adult Male: A Case Report on Gitelmans Syndrome

Maglinte, Bayani Pocholo T. , Robles, Jeremyjones F. , Nierre, Ralph Phi

Introduction. Gitelman Syndrome (GS), a rare autosomal recessive inherited disorder, is frequently unrecognized in the clinical setting. GS typically manifests with severe hypokalemia with debilitating and potentially fatal consequences if untreated. As of writing, confirmatory genetic assays are currently unavailable in the country, and the diagnosis of GS is primarily based on several biochemical laboratory tests. This results in the difficulty with prompt diagnosis of GS in the locality.

Case. We present a 52-year-old male who came in with chronic, intermittent paraparesis associated with persistent hypokalemia. A diagnosis of GS was made biochemically based on renal wasting of potassium and magnesium,

hypocalciuria, and metabolic alkalosis. Electrolyte correction with lifelong supplementation, and administration of Spironolactone resulted in the resolution of bilateral leg weakness. Electrolyte levels were maintained within normal limits in the outpatient setting.

Conclusion. GS is an uncommon potentially debilitating disorder that may lead to problematic, potentially fatal consequences to electrolyte abnormalities if left untreated. The lack of awareness and consequent delay in the diagnosis, and the unavailability of confirmatory genetic testing remains a clinical challenge. Timely recognition and initiation of treatment leads to early control of electrolyte levels, and better prognosis. **(Author's abstract)**

Keywords: *Gitelmans Syndrome, Paraparesis, Hypokalemia, Hypomagnesemia, Spironolactone, Case Report, Medicine*

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0349

Reflexivity and Research Methodology: A Second Glance

Palaganas, Erlinda C., Estacio, Joel

As qualitative researchers, we are actively involved in the research process. We accept the fact that we are the main instrument, thus are part of the social world we aim to understand. It entails self-awareness and as Parahoo (2006) posits, reflexivity, as a process, is an introspection on the role of subjectivity in the research that entails a continuous process of reflection by researchers on their values. It is also a process of recognizing, examining, and understanding how their “social background, location, and assumptions affect their research practice” (Hesse-Biber, 2007, p.17). Reflexivity, as the abundant literature would indicate, is an elusive term, it is commonly used interchangeably with reflectivity, and even with critical reflection. In this paper, an attempt was made to rediscover how reflexivity has been utilized in various perspectives to define its position and role in the conduct of robust qualitative research. In the process, we would like to share and solicit perspectives on reflexivity as a process and as an output. This was done thru a review of literature and the integration and highlighting of reflexivity/reflexivities of various researchers arising from the various research that we have been involved with such as: the six-country multi-disciplinary team lead by the Ottawa University based in Canada that undertook participatory research across Asia, Africa, and the Pacific to learn how poverty can be defined and measured; the five-country multi-disciplinary team, led by the Australian National University, Australia; and various local interdisciplinary researches. These researches were conducted over three years or more, some in various stages using focused group interviews, key informant interviews, observations, ladder ranking using photographs, record reviews, surveys, and photovoice. We also included documented reflexivities of colleagues with whom we have worked with in various capacities. We analyzed these documents vis-à-vis the concern of the qualitative researcher to unravel how their personhood intersects with their experiences in the field. Indeed, revisiting reflexivity and research methods enlightens the rigor in traversing the pathways of knowledge generation in qualitative research. **(Author's abstract)**

Keywords: *Reflexivity, Approaches to Reflexivity, Research Methodology, Reflexive lens, Credibility and Positionality, Ethics, Trustworthiness and Rigor, Medicine*

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0350

Reintegration: A Concept Analysis

Tuba A±a, Rock B

Reintegration is an integral part of nursing care. Nurses play a critical role in contributing support, dependence, and continuity of care from rehabilitation to reintegration. While the reintegration of patients is a concept often used in nursing, its theoretical origin has remained unclear. This article aimed to conduct a concept analysis of reintegration for the development of nursing as a discipline and improve nursing care and health outcomes. The evolutionary strategy to concept analysis of Roger was utilized, which resulted in the characteristics of reintegration as to its attributes, antecedents, consequences, and exemplar in nursing practice in the context of COVID-19. The capacity to adapt, reorganize, offer support, and build a network of resources are attributed to the concept of reintegration. Antecedents include rehabilitation, survivorship from illnesses, trauma, and injuries, and disruption of social and physical functional performances and activities. The identified consequences include transition to recovery, quality of life, independence, successful adaptation, job satisfaction, holistic care, and continuity of care. The new conceptual definition of reintegration emerged. Reintegration is a process of nursing care among patients who demand assistance and support before transitioning to regain normality or on their way to being restored to the community in the presence of adaptation from health adversities. The patient in all areas is cared for holistically, offering support to meet his needs and overcome challenges in terms of physical, mental, social, and emotional aspects. Concept analysis is as essential as operationalizing a concept in the nursing discipline. **(Author's abstract)**

Keywords: *Reintegration, Quality nursing care, COVID-19, Medicine*

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0351

The Relationship between COVID-19 Anxiety and Student Nurses' Perceived Health, Sleep Quality, and Psychological Well-being

De los Santos, Janet Alexis A. , Labrague, Leodoro J. , Falguera, Char

Objectives. To determine the level of COVID-19 anxiety among Filipino nursing students and its predictors, and its associations with their perceived health, sleep quality, and psychological wellbeing

Methods. The study employed a cross-sectional design that administered a survey among selected nursing students in the Central Philippines through purposive sampling. We used self-report questionnaires, such as the COVID-19 Anxiety Scale, the Perceived Stress Scale, and the Psychological Well-Being Scale, and one-item measures for perceived health and quality of sleep.

Results. Out of 261 participants, more than half reported dysfunctional anxiety symptoms. Multiple regression analyses revealed that being of male sex and in the fourth-year level in the Nursing program was associated with lower COVID-19 anxiety. Further, nursing students who rated high in perceived health, sleep quality, and psychological wellbeing were more likely to report lower COVID-19 anxiety levels.

Conclusion. Nursing students' levels of COVID-19 anxiety indicate that the COVID-19 pandemic has psychologically affected this vulnerable group. COVID-19 anxiety can lead to poor sleep quality and psychological wellbeing. Nursing education authorities must formulate measures and strategies to protect the psychological welfare of nursing students against COVID-19. **(Author's abstract)**

Keywords: *Nursing students, COVID-19, Anxiety, Sleep quality, Psychological wellbeing, Stress, Medicine*

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2023,

Relationship of Work Engagement with Nurse Work and Patient Outcomes among Nurses in Central Philippines

De los Santos, Janet Alexis A. , Labrague, Leodoro J. , Firmo, Carmen N. , Falguera, Charlie C., Tsaras, Konstant

Objective. This study determined the association between work engagement among hospital nurses and their work outcomes (i.e., job satisfaction, stress, burnout, and turnover intention) and patient outcomes (i.e., missed nursing care, adverse events, and quality of care).

Methods. A cross-sectional study was employed using secondary data derived from 549 registered nurses working in different hospitals in Central Philippines. Eight self-report questionnaires were adopted to gather data in this study. Multiple linear and logistic regression analyses were used to test the hypotheses.

Results. Nurses with lower levels of work engagement reported increased levels of job burnout and turnover intention. Those nurses with higher scores on the dedication subscale reported increased job satisfaction and perceived quality of patient care.

Conclusion. Work engagement influences nurse work and patient outcomes in the Philippines. Higher levels of work engagement prevent nursing staff from leaving their workplaces and may help them find their work fulfilling personally and professionally. Nursing management should highly consider promoting work engagement through enhancing job resources to meet the needs of nurses and, eventually, improve professional work outcomes and quality patient care. (**Author's abstract**)

Keywords: *Burnout, Job satisfaction, Nurses, Nursing, Nursing care, Patient care, Philippines, Work engagement, Medicine*

Reliability and Validity of the Filipino-translated Diabetes Self-management Questionnaire and its Correlation with HbA1c

Ganiban, Marie Angeline O. , Corpuz, Hannah U., Aguinaldo, Alexi

Background. Diabetes self-management is a fundamental aspect of diabetes care and has a significant impact on diabetes-related mortality and morbidity. Assessment of self-care management is thus essential for clinicians and educators seeking better outcomes. However, there are no Filipino-validated tools to objectively measure this.

Methodology. A cross-sectional analytic study was done among adult Type 2 diabetic mellitus (T2DM) patients at the Ilocos Training and Regional Medical Center (ITRMC) Department of Internal Medicine outpatient clinic and three private diabetes clinics to determine the reliability and validity of the Filipino-translated Diabetes Self-Management Questionnaire (DSMQ) and its association with glycemic control as measured using glycosylated hemoglobin (HbA1c) values and categorized into good (< 7%), moderate (7-8.9%) and poor (> 9%) control. The English version of the DSMQ was translated to Filipino using forward-backward translation. The pre-tested

Filipino translated questionnaire was then distributed to the participants and the responses were analyzed using Cronbach's alpha, Pearson's coefficient, and one-way analyses of variance.

Results. There were a total of 78 respondents. The test-retest reliability showed a statistically significant correlation ($p < 0.05$). All the items showed a high difficulty index. Known group validity was computed based on categorized HbA1c values. DSMQ sum scores and subscales showed no significant differences among the three categories of glycemic control.

Conclusion. The Filipino-translated DSMQ is a reliable tool for measuring the self-care of Filipinos with type 2 diabetes mellitus. Future research using it with a larger sample size and analysis for other factors affecting diabetes control may be better able to demonstrate its association with glycemic control. **(Author's abstract)**

Keywords: *Diabetes care, Psychometric instrument, Self-care behavior, Self-management, Medicine*

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0354

A Retrospective Cohort Study on the Disease-Free Survival and Overall Survival of Patients with Stage I-III Triple-Negative Breast Cancer given Adjuvant Chemotherapy in the Makati Medical Center

Edusma-Dy, Regina T., Tamayo, Maria Belen E., Tan, Harold Nathan C., Lopez, Francisco Vicent

Background. Triple-negative breast cancer (TNBC) comprises 15-20% of all breast cancers and is marked by early relapse and poor overall survival. Adjuvant chemotherapy has become the standard of care for these patients albeit to this time there is no consensus on its optimal chemotherapy regimen. This study determined the disease-free-survival (DFS) and overall survival (OS) of patients with stage I-III triple-negative breast cancer given adjuvant chemotherapy in Makati Medical Center from 2000 to 2015.

Methods. A single institution (Makati Medical Center), retrospective cohort was conducted involving 157 stage I-III triple-negative breast cancer patients, diagnosed from January 2000 to June 2015, who completed an adjuvant chemotherapy regimen and had at least 3 years of follow up with their medical oncologist. Review of charts of these patients was done, and the demographic, clinical, histopathologic, chemotherapy, recurrence and mortality data were collected and analyzed. The OS and DFS rates were estimated using the Kaplan-Meier method.

Results. 107 stage I-III triple-negative breast cancer patients who met eligibility criteria were included in the analysis. The most common chemotherapy regimens were sequential anthracycline-taxane (32 patients, 29.09%) and anthracycline-based regimens (32 patients, 29.09%). The 5-year median OS of TNBC patients given adjuvant chemotherapy was 78.94% (95% CI: 69% to 86%) while the 5-year median DFS of TNBC patients was 71.71% (95% CI: 61.68% – 79.5%). There was no significant association between overall survival or disease-free survival and treatment with a particular chemotherapy regimen.

Conclusions. Adjuvant chemotherapy with sequential anthracycline-taxane, concurrent anthracycline-taxane, CMF, anthracycline-based and taxane-based regimens among stage I-III triple-negative breast cancer patients in Makati Medical Center resulted in comparable overall survival and disease-free survival. The use of immune checkpoint inhibitors presents a viable option in TNBC as demonstrated in the Impassion 130 and KEYNOTE 119 trials, and should be further evaluated in the Philippine setting. **(Author's abstract)**

Keywords: *Triple-negative breast cancer, Adjuvant chemotherapy, Overall survival, Disease free survival, Medicine*

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A Retrospective Cohort Study on the Treatment Outcome after Unilateral Adrenalectomy among Patients with Aldosterone-Producing Adenoma at the University of Santo Tomas Hospital

Matawaran, Bien J. , Antonio, Kar

Background: Unilateral adrenalectomy is indicated for patients with unilateral primary aldosteronism resulting in normalization of hypokalemia and resolution of hypertension. This study aims to determine the proportion of patients with cure of hypertension and improvement of hypokalemia after unilateral adrenalectomy among patients with aldosterone-producing adenoma and assess the association of preoperative factors with these outcomes.

Methods: This is a retrospective cohort study among patients with aldosterone-producing adenoma who underwent unilateral adrenalectomy with at least one month follow-up after the operation. Patients were selected from admissions to the University of Santo Tomas Hospital from January 2008 to November 2018. The proportion of patients with cure of hypertension and resolution of hypokalemia were determined. Binary logistic regression was used to determine preoperative factors associated with these outcomes.

Results: Twenty-one patients were included in this study. Cure of hypertension was noted in 47.62% and 42.86% of patients within 24 hours of adrenalectomy and on follow-up, respectively. Improvement of hypokalemia was noted in 61.90% of patients within 24 hours of operation while all patients had improvement of hypokalemia on follow-up. Patients without preoperative hypokalemia were more likely to have cure of hypertension within 24 hours of adrenalectomy (OR=0.0250, p=0.005) and on follow-up (OR=0.0571, p=0.010).

Conclusion: Unilateral adrenalectomy results in improvement of hypertension and hypokalemia in the majority of patients with aldosterone-producing adenoma. Shorter duration of hypertension and absence of preoperative hypokalemia were significantly associated with cure of hypertension after unilateral adrenalectomy. (**Author's abstract**)

Keywords: *Hyperaldosteronism, Aldosterone-producing adenoma, Adrenalectomy, Medicine*

Retrospective Spatial Analysis of the COVID-19 Threat to the High-risk Population in Davao Region, Philippines from March 2020 to August 2021

Catalan, Jolly Mae G. , Bompat, Joshua Mar A. , Ligue, Kim Dianne B. , Roxas, Pamela Grace J. , Diche, Zarah Jean I. , Logrosa, Gernelyn T. , Lachica, Zython Paul T. , Quinco, Mia Kristine C. , Calo, Federico D., Yumang, Annabelle P. , Mata, May Ann

According to the World Health Organization (WHO), the elderly and people with comorbidities are most vulnerable to COVID-19 infection. With this, the challenges and threats posed to the vulnerable population require targeted interventions. While public health surveillance methods had developed recent advances to meet users' information needs, the volume and complexity of infectious disease data had increased, resulting in increasing difficulty to facilitate risk communication with the public and for decision-makers to make informed measures to

protect the public's health. Moreover, the implementation of COVID-19 spatiotemporal disease surveillance strategies specifically targeting the vulnerable population in the Davao Region had been previously unexplored. This paper investigated the COVID-19 incidence in the Davao Region from 03 Mar 2020, the earliest recorded date of onset, to 31 Aug 2021 using geospatial tools. The variables were visualized through choropleth maps and graduated symbols, and subsequently examined through spatial autocorrelation and hotspot analysis. Hotspots across the region were observed to be in high-density areas. These areas pose greater risks of infection due to the presence of a high concentration of cases. However, high case fatality rates were found in far-flung municipalities where access to COVID-19 healthcare facilities is a dilemma. In the COVID-19 setting and future disease outbreaks similar to COVID-19, results from this study may provide insights to government offices and other related agencies to improve healthcare systems and programs such as providing and initiating tailor-fitted isolation and consultation mechanisms appropriate to the vulnerable population in a community. **(Author's abstract)**

Keywords: COVID-19, GIS, Hotspot analysis, Moran's I, Spatial autocorrelation, Vulnerable group, Medicine

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0357

Risk Factors Associated with Contracting COVID-19 Infection in Selected Regions of Mindanao, Philippines

Lachica, Zython Paul T. , Tupas, Genevieve D. , Estaña, Leo Manuel B. , Logrosa, Gernelyn T. , Miguel, Charisse B., Alviola, IV, Pedr

The COVID-19 outbreak has become a global health crisis requiring immediate attention to develop different interventions. While several studies were done to understand its dynamics to determine the most vulnerable groups, the differential effects of the factors associated with contracting COVID-19 in different communities call for a localized understanding of its risks. Thus, this study aimed to analyze the risk factors that drive the likelihood of contracting COVID-19 in selected regions of Mindanao during the pre-mass vaccination period. Probit and Logit models were employed to analyze the association of the socio-demographic, economic, and climatic factors to a total of 64,507 and 6,599 laboratory results from the Department of Health Region Northern Mindanao and the Zamboanga Peninsula, respectively. In both regions, age, sex, being a health worker, having COVID-19 close contact, and the implementation of the General Community Quarantine were found to significantly affect the likelihood of acquiring the COVID-19 disease. In addition, in Northern Mindanao, factors such as travel history, rainfall, poverty incidence, and the implementation of the Modified General Community Quarantine were also found to significantly affect the likelihood of acquiring the disease. This study provides empirical evidence for developing context-specific interventions to effectively manage and prepare for future COVID-19 outbreaks and other infectious diseases with similar dynamics. **(Author's abstract)**

Keywords: COVID-19, Contraction, Risk factors, Medicine

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0358

Risk factors of PTSD, depression and anxiety in patients with previous COVID-19 infection: A systematic review and meta-analysis

Juangco, Jose Ronilo G. , Go, Lindsley L. , Geli, Regina Ira Antonette M. , Aquino, Ira Maria

Introduction Studies showed that those who tested positive for COVID-19 have a 65% risk for a psychiatric disorder, while those undergoing isolation or quarantine are put at risk for anxiety and depression. The objective of this study was to appraise studies that determine the risk factors for psychiatric disorder post-COVID-19 infection.

Methods All cross-sectional and cohort studies from 2019 onwards that had COVID-19 survivors that developed anxiety, depression and/or post-traumatic stress disorder (PTSD), were included. Medline, Cochrane Library and ClinicalKey were searched using MeSH terms including “COVID-19”, “depression”, “anxiety”, “post-traumatic stress disorder”, and “risk factor”. The risk of bias was assessed using the Newcastle-Ottawa scale. The data extracted from the studies were characteristics of the participants, risk factors, outcome measures and outcomes.

Results Four cohort and four cross-sectional studies involving 1438 COVID-19 survivors who developed depression, anxiety and/or depression were included. The risk factors that were statistically significant were 1) female sex (RR = 1.86; 95% CI 1.06, 2.04; Z = 2.32; p = 0.02) for depression, 2) having family members infected with COVID-19 (RR = 1.56; 95% CI 1.32, 1.85; Z = 5.17; p = <0.01) for depression, 3) steroid administration during hospital admission (RR = 1.62; 95% CI 1.07, 2.47; Z = 2.26; p = 0.02) for anxiety and 4) female sex (RR = 2.13; 95% CI 1.16, 3.91; Z = 2.45, p = 0.01) for PTSD.

Conclusion Female sex increases the risk of depression and PTSD. A family history of COVID-19 increases the risk of depression. Steroid administration is a risk factor for anxiety.

(Author's abstract)

Keywords: COVID-19, Risk factors, Depression, Anxiety, Post traumatic stress disorder, Medicine

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0359

The Role of First Trimester HbA1c as a Predictor of Gestational Diabetes Mellitus and Adverse Maternal and Perinatal Outcomes among Non-Diabetic Pregnant Filipino Women

Soria, Arriza Kryssan M., Tan, Ceryl Cindy

Objectives: This study aims to determine the role of HbA1c level during first trimester in predicting gestational diabetes mellitus in Filipino non-diabetic women. Hence, to identify those will be at increased risk of its adverse maternal and perinatal outcomes, and who will benefit from early intervention. This will aid in preventing maternal and perinatal morbidity and mortality and reducing health care cost by avoiding strategies which can result in false positive cases.

Methodology: A cross-sectional study conducted in a tertiary hospital in the Philippines. Seventy-one Filipino pregnant women were included in the final analysis. HbA1c levels were taken during the first trimester and routine screening of gestational diabetes mellitus (GDM) utilizing 75 grams OGTT during 24th-28th weeks age of gestation. Binary logistic regression modeling was performed to determine if HbA1c was a predictor of gestational diabetes mellitus. The calculated median for HbA1c was then utilized as a threshold value to predict GDM. Odds ratio, relative risk and corresponding 95% confidence intervals from binary logistic regression were computed to determine the association of variables.

Results: In this study the prevalence rate of GDM is 38%. It showed that first-trimester HbA1c level is not a predictor of GDM and adverse maternal and perinatal outcomes. However, in utilizing an HbA1c threshold of \geq 5.2%, there is a two-fold increase risk of developing hypertensive disorders, requiring insulin during pregnancy, and macrosomic newborns and a four-fold increase risk of having large for gestational age newborns. It has a positive predictive value (PPV) of only 16%. However, it has a high negative predictive value (NPV) of 88%

therefore it can be used to rule out risk of GDM as early as in the first trimester.

Conclusion: The association of HbA1c level and the occurrence of GDM was not observed in this study. However, by using an HbA1c threshold of $\geq 5.2\%$, as opposed to the standard reference range for diagnosing type 2 diabetes mellitus and gestational diabetes mellitus in Caucasians, the relative risk of developing GDM in 24th-28th weeks AOG is 1.26 (0.6865, 2.3242). (**Author's abstract**)

Keywords: *HbA1c, Gestational diabetes mellitus, Pregnancy, Insulin, Medicine*

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0360

Role of the nurse in newborn screening: Integrating Genetics in 16 Nursing Education and Practice

Sibulo, Ma. Salve K. , Abad, Peter James B. , Sur, Aster Ly

Nurses are key players in the newborn screening (NBS) program. The inherited nature of the conditions included in the NBS panel means that nurses should be competent in integrating genetics in their practice. However, studies suggest inadequate preparation of nurses in incorporating genetics in their practice. This article aims to discuss how nurses can capitalize on existing population-based genetics programs such as newborn screening to enhance their clinical practice through genetics. An overview of the newborn screening program in the Philippines is provided as well as a discussion on the roles of nurses in genetics in the context of NBS, and a brief discussion of future directions of the Philippine newborn screening program and how this may impact nursing education and research. (**Author's abstract**)

Keywords: *Medicine, Newborn screening, Neonatal screening, Nurses, Genetics, Genomics, Nursing practice, Nursing education*

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0361

Scoping Review of Factors Affecting Philippine Nurse Licensure Examination Outcomes

Oducado, Ryan Michael F. , Montegrigo,

Aim: This scoping review synthesized the existing literature on factors affecting Philippine nurse licensure examination (PNLE) outcomes.

Background: Studies about the nurse licensure examination in the Philippines had gained popularity in recent years. Various studies reported different factors affecting PNLE outcomes, since licensure examination is an interplay between individual, academic, institutional, and environmental factors. This review is the first study that synthesized the literature on factors affecting PNLE outcomes.

Methods: A scoping review of research articles published from 2000 to 2020 described the existing literature explaining the various factors affecting PNLE outcomes. The Preferred Reporting for Integrative Studies and

Meta-Analysis for Scoping Reviews (PRISMA-ScR) was used to guide the study. Using the set inclusion criteria, 4,208 articles and gray literature were eligible for initial screening. A total of 29 studies were included in this review.

Findings: Majority of the PNLE studies were quantitative research, used correlation research designs, and were published between 2011 to 2020. The average PNLE first-time pass rate from 2014 to 2018 was 75 percent and overall passing rate improved from 39.2% in 2010 to 45% in 2016. First-time examinees and those who take the PNLE in November have increased odds of passing the examination. Wide variability in PNLE results were observed in the May/June PNLE. Intellectual ability, learning styles, and psychosocial behaviors impact individual PNLE outcomes. Academic performance in high school and nursing school, college admission test, nursing aptitude test, achievement exams, pre-board examinations, clinical nursing courses, English courses, and Microbiology and Parasitology are significant academic predictors of PNLE success. Institutional variables such as school size, type of school ownership, year of establishment, accreditation status, and faculty-student ratio are associated with PNLE outcomes.

Conclusion: Various individual, academic, and institutional factors influence PNLE outcomes. Identifying these factors is crucial in understanding the multidimensionality of variables that may impact PNLE performance. An insight into these factors may assist individual nursing students and graduates, as well as nursing schools, in developing strategies to increase their likelihood of passing and increasing the first-time pass rates in the PNLE. (Author's abstract)

Keywords: Nurse licensure examination, Nursing education, Philippines, Medicine

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0362

Seasoned Nurse Administrators Saga: In the Changing and Challenging Times *Palaganas, Erlinda C. , Narreto-Painagan, Theresa Li*

This research endeavored to explore, describe and document the saga of experienced nurse administrators to come up with reflective learning in nursing leadership and management. A qualitative phenomenological approach was utilized, specifically descriptive and interpretative methods of Husserl and Heidegger.

Purposive sampling and referral were employed to select eight participants from the three fields of nursing administration (academe, hospital, and community) within Luzon, Philippines. An in-depth interview about the participants' experiences in nursing and nursing administration, together with a review of historical narratives and personal accounts were engaged to generate data. The interviews were transcribed verbatim and were analyzed following hermeneutic interpretive phenomenology.

An integrated analysis of literature showed parallel descriptions of participants' responses and the context of historical accounts and events in nursing in the Philippines. Four main themes have emerged in the saga of Seasoned Nurse Administrators (SNAs): 1) Nurse administrators' responses according to the need and context of nursing in their times; 2) Nursing foundations and training are geared towards the values of nursing as a service profession, 3) The pathways towards becoming a nurse administrator are marked with competence in the roles undertaken and living the passion for service; 4) SNAs facing challenges are towards the improvement of life conditions, excellence in their profession, and setting advocacies to elevate the nursing profession in the country in the 21st century.

Aconceptual model was formulated in understanding the paths towards a seasoned nurse administrator. (Author's abstract)

Keywords: Nurse Administrators, Nursing Saga, Changes in nursing, Challenge in nursing, Reflective Learning, Interpretive Phenomenology, Nursing Management, Medicine

SELF-COMPASSION IN NURSING: AN EVOLUTIONARY CONCEPT ANALYSIS

Remon, Ald

COVID-19 pandemic gives a new meaning to self-compassion thinking. Nurses in various fields or settings (e.g., hospital, CoViD- 19 isolation facility, community) provide care to patients and families who may be suffering and traumatized from the ongoing disease outbreak. Thus, it is necessary to illuminate the concept of self-compassion to respond to the holistic needs of the nurses who are at risk of developing compassion fatigue and burnout. This paper aims to examine the concept of self-compassion as it relates to nursing using simplified Rodgers' (2010) evolutionary concept analysis. Rodger's evolutionary concept analysis is an inductive method of analysis wherein concepts are viewed to develop over time and are highly influenced by the context in which they are used. The data source was a search of literature published from 2010-2020 on CINAHL, Google Scholar, and Health Source: Nursing/Academic Edition. The sifting process is utilized to ensure a comprehensive electronic database search.

This evolutionary concept analysis found four attributes of self-compassion in nursing: mindful attention, self-mastery, self-kindness, and shared humanity. Regarding the antecedents of self-compassion, it is necessary to experience suffering, an event, or a traumatic encounter. Consequently, these may result in compassionate care, positive well-being, and quality nursing care. In the nursing context, compassion toward self has been seen to be subtle. During the continually evolving Covid-19 pandemic, nurses must be empowered to continuously envisage self-compassion in their daily practice. Frequent practice of compassion towards self can potentially appreciate this way of being in the nursing discipline and the patients, families, or communities for which nurses compassionately care for and serve. **(Author's abstract)**

Keywords: *Self-compassion, Nursing, Evolutionary Concept Analysis, COVID-19 Pandemic, Medicine*

Sex Differences in Cardiovascular Risk Factors and Management in a Preventive Cardiology Clinic at a Tertiary Referral Center

Randhawa, Varinder K. , Cuenza, Lucky R. , Yap, Emily Mae L., Vilela, Geral

Background: Cardiovascular disease is the leading cause of death in both genders worldwide. Gender differences in clinical presentation and treatment have been reported.

Objective: This study aims to describe and compare the cardiovascular risk factors and management strategies for primary prevention among Filipinos.

Methods: An analytical cross-sectional study was done on 2,082 patients at the Preventive Cardiology Clinic of a tertiary referral center in Quezon City, Philippines from January 1, 2002 to December 31, 2017.

Results: Seventy-two percent of the patients were females with a higher mean age compared to males (57.67 + 10.50 vs 55.66 + 11.82, p 0.002). There were more women who were unemployed (75.2 vs 45.9, p<0.001). There was no significant difference in the prevalence of hypertension (68.6% vs 67.9%, p=0.542) and type 2 diabetes mellitus (19.8% vs 21.5%, p=0.437) in both genders. Beta blockers (24.1%), calcium channel blockers (22.9%) and angiotensin receptor blockers (22.1%) were the most commonly prescribed anti-hypertensive drugs. Biguanides were the most commonly prescribed glucose-lowering drug (11.3%). Compared to men, more women had dyslipidemia (51.8% vs 38.6%, p<0.001). Statins were more commonly prescribed in women (22.4 vs 18.1%, p=0.033).

Conclusion: There were significantly more women seen in our Preventive Cardiology clinic. Smoking and alcoholic drinking were higher in males. BMI, total cholesterol and HDL were significantly higher in females than in males. **(Author's abstract)**

Keywords: *Sex differences, Cardiovascular risk factors, Cardiovascular disease prevention, Primary prevention, Preventive medicine, Medicine*

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0365

Sexual Health Intervention for Couples with Difficulty in Sexual Abstinence *Alberto, Da*

Purpose: Nurses in the forefront of reproductive health services face the challenge of motivating clients to adapt fertility awareness-based methods, or making them continue with the method due to concerns about handling sexual abstinence. To assist nurses and other reproductive health providers, a sexual health intervention was developed. Thus, this study aimed to determine the effectiveness of the sexual health intervention called Kalabit-kalabit (sexual desire), Irap (abstinence), and Sanggang-dikit (shared behavioral plan) (KIS) on the sexual scripts, motivation, and behavior of couples with difficulty in sexual abstinence in natural family planning. Specifically, it aimed to identify the sexual scripts on pagkatao (personhood), pagkalalaki (manhood), pagiging lalaki (masculinity), pagkababae (womanhood), pagiging babae (femininity), pagtatalik (sexual intercourse), and pagpipigil (abstinence), as well as the sexual motivation and behavior of couples with difficulty in abstinence before and after KIS.

Methods: Embedded multiple-case study with purposive sampling using the replication logic was used to satisfy the inquiry. Four couples qualified using the assumption that difficulty with abstinence is caused by illogical sexual scripts, and inappropriate sexual motivation and behavior of either one or both spouses as a template to determine KIS's effectiveness. Pattern matching, cross-case synthesis, and logic model were used for analytic generalization. Prior to the conduct of the study, the research protocol underwent scrutiny by the Independent Ethics Committee of De La Salle Medical and Health Sciences Institute.

Result: KIS was found to be effective in (a) decoding and denouncing illogical sexual scripts and inappropriate sexual motivation and behavior, (b) reframing them to logical sexual scripts and appropriate sexual motivation and behavior, and (c) sharing mutual behavioral plans if accompanied with openness and full acceptance of self and spouse coupled with conviction, cooperation, commitment, and determination.

Conclusions: Decoding, challenging, reframing, and sharing mutual behavioral plans facilitate couples' competence in achieving sexual abstinence with ease. **(Author's abstract)**

Keywords: *Sexual scripts, Motivation, Behavior, Abstinence, Natural family planning, Medicine*

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Sitmate: an android mobile application for the prevention of musculoskeletal discomfort among a business process outsourcing company workforce management personnel

Miling, Anna Margarita , Tuazon, Mary Melissa Rayne F. , Manila, Emmanuel Luis F. , Hiso, Joseph James R. , Jumarang, Khio Jerick D. , Dagoy, Ramses Sonny F. , Bansale, Mary Sop

Introduction Due to COVID-19 pandemic, many have shifted into working at home which led to physical inactivity. This may cause musculoskeletal discomfort, chronic disease, muscle atrophy and spinal imbalance due to improper and prolonged sitting posture. Since mobile devices are relatively available for most of the office workers, there were still a lack of evidence-based mobile applications that can counteract the inactivity through exercises, which led to the researchers to create an application called SitMate that consists of evidence-based exercises which aimed to prevent musculoskeletal discomfort among a business process outsourcing company Workforce Management Personnel (BPO-WMP).

Methods Eleven participants (18-40 years old) full-time, work-from-home BPO-WMP were randomized into Treatment Group(TG)(n=6) and Control Group (CG)(n=5). The TG received one month intervention with the use of SitMate Application containing relaxation exercises, range of motion exercises and stretching exercises, and notifications for postural correction while the CG continued their usual working schedule.

Results There were no significant differences between two groups on all body parts that were measured using the Cornell Musculoskeletal Discomfort Questionnaire, and no significant differences in the intragroup pre-test and post-test scores on all body parts between TG and CG. For the intra-group post-test of the TG, there were noted improvements on the hip/buttock, right shoulder, upper back (median = 0) and right wrist (median = 1.5). There was also a noted increase in discomfort on the neck (median = 1.5) and lower back (median = 3). For the post-test of the CG, there were noted improvements on the right shoulder, right wrist (median = 0) and lower back (median = 1.5).

Conclusion This study has shown that the SitMate application does not effectively reduce the prolonged sitting-related discomfort among the personnel after 1 month of intervention. **(Author's abstract)**

Keywords: *SitMate, Mobile application, Musculoskeletal discomfort, Cornell Musculoskeletal Discomfort Questionnaire, Concentric workforce management, Office workers, Prolonged sitting, Physical inactivity, Low back pain, Relaxation exercises, Posture, Medicine*

Spiritual Well-Being of Filipino Patients with Cancer
Tupaz, Alyssa Jenny E., Balabagno, Araceli

Cancer is a serious disease that leads to physical, psychosocial, and spiritual difficulties. Filipinos' high reverence to God can affect their health-related behaviors and responses to illnesses like cancer. Though studies have shown the association of spirituality and quality of life, very few have been conducted in Filipino cancer patients. This study aimed to describe their spiritual well-being in terms of the personal, communal, environmental, and

transcendental domains; and compare spiritual well-being across different patient characteristics (i.e. type of cancer, stage of cancer, type of treatment, and the period since first symptoms are felt) as input to determining patients at risk for spiritual distress. A descriptive cross-sectional design was utilized with 87 conveniently sampled respondents. A researcher-developed questionnaire and the Spiritual Health and Well-being Measure© (SHALOM) instrument were used to collect data. Data were analyzed using descriptive statistics and Kruskal Wallis H Test. Majority of the respondents were below 50 years old, female, married or with a common-law partner, had at least a high school education, unemployed, did not have enough income to support basic needs, Catholic, and an active member in the church. Most of them had colorectal cancer, were in Stage III, first felt symptoms 6 months to 1 year prior to the conduct of the study, and received a combination of treatments. In terms of personal state, the patients had the highest spiritual well-being in the Transcendental Domain which describes one's relationship with God. The second-highest spiritual well-being level was found to be the communal domain followed by personal, and environmental domains. Significant differences were found in the spiritual well-being scores in the 4 domains across the types of cancer, with the lowest scores among those with head and neck cancer. Filipino patients in the study had high spiritual well-being despite the presence of cancer. Patient characteristics, especially their illness profile, should be considered in developing nursing interventions that may improve their spiritual well-being. **(Author's abstract)**

Keywords: *Spiritual well-being, Cancer, Nursing, Filipinos, Medicine*

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0368

Spirituality and Spiritual Care in Nursing: A Literature Review

Basatan, Christian J., Valenzuela, Judith P., Galutira, Gemma D., Castro-Palaganas, Erl

Spirituality is a multifaceted concept with varied definitions. In the nursing literature, it is commonly described based on its significance in the lives of individuals. Exploring the perspectives of nurses, nursing students, and patients regarding spirituality and spiritual care is crucial to gain a sound understanding of how these concepts impact the nursing profession.

This literature review explored the perspectives on spirituality and spiritual care of four population groups: nurse educators, nursing students, clinical nurses, and patients. A literature search was done using worldwide databases. The 84 articles included dealt with the perceptions of nurse educators, nursing students, clinical nurses, and patients regarding spirituality and spiritual care. The four main categories of perspectives from the nurse educators, nursing students, nurse clinicians, and patients yielded ten sub-categories: (a) meaning of spirituality and spiritual care, (b) role of spirituality and spiritual care in nursing practice, (c) role of nursing education in developing spirituality and spiritual care competence of nursing students, (d) manner of integrating spirituality and spiritual care in nursing curriculum, (e) methods of teaching spirituality and spiritual care, (f) manner of spiritual care delivery, (g) barriers and challenges to the teaching and learning of spirituality and spiritual care, (h) barriers and challenges to spiritual care delivery, (i) ways of enhancing nurse educators' competence in curricular integration and teaching spirituality and spiritual care, and (j) ways of enhancing nurses' competence in spiritual care delivery.

Nurse educators, nursing students, clinical nurses, and patients presented similar and diverse perspectives, but they all recognized the significance of spirituality and spiritual care in the profession. The information derived from this study can contribute to the existing knowledge base and spur strategies at individual and institutional levels to enhance teaching and learning of the concepts, improve practice, and promote holistic care. **(Author's abstract)**

Keywords: *Nursing, Clinical nurses, Literature review, Nurse educators, Nursing students, Patients, Spiritual care, Spirituality, Medicine*

Stigmatization of Nurses: A Concept Analysis *Fagarang, Mark*

For the past months, a new strand of Coronavirus, SARS-CoV-2 has been challenging our health care systems worldwide. Healthcare workers especially nurses are not just at risk of adverse physical symptoms but may suffer from psychological stress. This is one scenario of a stigmatized nurse.

The goal of primary care is to improve patients' health, longevity, and quality of life through the provision of patient-centered care. To do so healthcare providers must overcome any stressful activities or circumstances like stigma. This concept focused mainly on a stigmatized nurse. For this concept analysis, the framework of Walker and Avant was used. Definitions of terms are discussed. Cases were also identified for a better representation of the concept. Empirical referents and implications to nursing are also presented. **(Author's abstract)**

Keywords: Nurse, Stigma, Concept analysis, Medicine

Structure-Function Correlations of Glaucoma in Filipinos *de Jesus, Ralph Anthony H. , de Leon, John Mark S. , Khu, Patricia M. , Cotaoco, Kimberly*

Introduction: To determine the structure-function correlations of glaucoma in Filipinos using the average peripapillary retinal nerve fiber layer (RNFL) thickness and rim area (RA) of the spectral-domain optical coherence tomography (SD-OCT) and mean defect (MD), pattern standard deviation (PSD), and visual field (VF) clusters of standard automated perimetry (SAP).

Methods: Consecutive tests consisting of SD-OCT, SAP, and disc photos were reviewed and selected based on abnormalities in VFs or OCTs or both. Each set of tests was classified as to VF defect type and severity. Mean threshold of VF clusters, MD, and PSD were correlated with average and sectoral RNFL thicknesses and RA.

Results: One hundred eighty-six (168) eyes of 121 patients with mean age of 60.2 ± 14.7 years had an average MD, PSD, RNFL thickness, RA of -9.5 ± 8.5 dB, 5.4 ± 3.3 dB, 75.9 ± 15.9 μ m, and 0.9 ± 0.4 mm², respectively. Among VF tests, 23.1% were normal, 16.5% had early, 9.1% moderate, 12.4% advanced, and 8.3% severe glaucoma damage. Most common VF defect types were central islands, combined, and paracentral (16.5%, 14.4%, and 12.2%, respectively). The most commonly affected RNFL segments were inferior, followed by superior, and combined superior and inferior (51.2%, 47.1, and 34%, respectively). Among the OCT parameters, RNFL thickness and RA were strongly correlated ($p < 0.0001$). Between the VF and OCT parameters, the strongest correlation was between the clusters of superior VF defects and the 6-8 o'clock RNFL thinning, followed by the inferior VF defects and the 12-1 o'clock RNFL thinning. Inferior RNFL thinning was strongly correlated with MD and PSD.

Conclusion: Among Filipino glaucomatous eyes monitored with SD-OCT and SAP, correlation was strongest between the superior VF defects and the infero-temporal RNFL thinning. **(Author's abstract)**

Keywords: Visual field, Optical coherence tomography, Glaucoma, Structure and functional correlation, Medicine

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0371

Success Rate of *Helicobacter pylori* Eradication Using Vonoprazan-based Triple Therapy as First-line Treatment at a Tertiary Hospital in Baguio City

Espiritu, Maria Elizabeth T., Guston, Tristan J

Background: *Helicobacter pylori* is acknowledged to cause chronic gastritis and peptic ulcer disease and is also implicated in gastric carcinoma and B cell mucosa-associated lymphoid tissue (MALT) lymphoma development. It has infected at least half of the world's population. Proton Pump Inhibitors (PPIs) have been the conventional antacid of choice for *H. pylori* eradication triple therapy, while vonoprazan is a novel drug of its class that was recently studied but is limited to an oral form which makes it less feasible in cases of acute gastrointestinal bleeding. According to several systematic reviews and meta-analyses, the vonoprazan-based triple therapy regimen for *H. pylori* eradication is a non-inferior treatment to traditional PPI-based treatment when given in 1 week for patients having no active gastrointestinal bleeding. Likewise, a safety profile has been established with its use, offering an alternative treatment option.

Objectives: The research aims to identify the *H. pylori* eradication rate among *H. pylori*-positive patients who received a vonoprazan-based triple therapy regimen as outpatients, describe their clinicodemographic profile, and identify potential side effects associated with the treatment.

Methods: This study utilized a cross-sectional study design in a single tertiary institution from January 2018 to December 2020. Descriptive and inferential statistics were used in data analysis. Frequency and percentage were utilized to determine the success and failure rates of *H. pylori* eradication, describe the clinicodemographic profile of patients who underwent vonoprazan-based triple therapy, and the potential side effects with treatment. The chi-square test of independence was applied to assess the significant difference in the successful and failed eradication rates across the clinicodemographic profile. A P-value of <0.05 was considered statistically significant, and statistical analyses were conducted using SPSS version 20.0.

Results: 32 (91%) had successful *H. pylori* eradication, with the majority of them determined by a negative ¹³C-UBT result (62.8%) and the rest with a negative *H. pylori* stool antigen test (28.6%). The majority of patients undergoing *H. pylori* eradication using a vonoprazan-based regimen with documented successful eradication belonged to the 19 to 39 years old group (50%), clerical support workers (40.63%), with a chief complaint of abdominal pain (46.88%), with no known co-morbid illness (75%), and with endoscopic finding limited to antral gastritis alone (46.88%). This study described only two documented side effects of treatment: diarrhea and abdominal pain (2.9%).

Conclusion: Vonoprazan-based triple therapy, given at 20 mg twice daily for 7 days, has shown a high *H. pylori* eradication rate among hemodynamically stable patients, without active bleeding, and treated on an outpatient basis. There was a significant difference in eradication success and failure across co-morbidities, with a higher success rate in those without co-morbid illness. A high success rate was also seen in patients <40 years of age, with a single chief complaint, and with antral gastritis as the sole endoscopic finding. **(Author's abstract)**

Keywords: *Helicobacter pylori*, Vonoprazan, Vonoprazan-based Triple Therapy, *H. pylori* Eradication, Medicine

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NP

Surgical Scrubbing With and Without a Brush in Decreasing the Number of Germ Colonies on Hands: A Systematic Review

Irwan, Andi Masyitha , Bambi, Adi Ang

Purpose: This study aims to compare surgical scrubbing with and without a brush in decreasing the number of germ colonies on hands.

Background: Surgical scrubbing with and without a brush are currently popular worldwide. To date, the optimal method in decreasing the number of germ colonies on the hands is not known.

Methods: Systematic review of effectiveness was conducted. The databases and publisher websites included PubMed, Science Direct, Google Scholar, Wiley Online Library, Cochrane Library and recruitment studies published between 2009-2019. The risk of bias was assessed utilizing Cochrane Collaboration's tool.

Results: Included clinical studies consisting of five randomized controlled trials. The procedures and duration of surgical scrubbing on each study varied depending on the protocol as a reference. All clinical studies found no difference in the number of colony-forming units (CFU) on the hand between surgical scrubbing with and without a brush.

Conclusions: Scrubbing with and without a brush showed similar efficacy in terms of the number of germ colonies on the hands. (**Author's abstract**)

Keywords: *Brush, Brushless, Germ colonies, Surgical scrub, Medicine*

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NP

Survey of Glaucoma Practice Patterns Among Members of The Philippine Glaucoma Society

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Objective: To identify the glaucoma clinical practice patterns among the members of the Philippine Glaucoma Society (PGS) from 2015 to 2016 using an online survey.

Methods: An online link was sent to each consenting PGS member which directed them to two poll sites. These sites asked questions about demographics and their preferred clinical practice patterns. Frequency and percent distributions were used to analyze the data.

Results: There was a high response rate from PGS members at 97% (42 out of 43 members). More than half of respondents (51%, n=22) defined glaucoma as glaucomatous optic neuropathy with an evident visual field loss. IOP was routinely measured by 90% (n=38) of the respondents with majority preferring to use the Goldmann applanation tonometer (GAT) (98%, n=41). Gonioscopy was done on all new patients by all PGS members but only 62% did regular gonioscopy on follow-up consultations. Most of the respondents relied on the 90D lens (88%) to assess the optic nerve. Visual field examination (VFE) was routinely requested by all respondents.

Pachymetry and anterior segment optical coherence tomography (AS-OCT) were used sparingly at only 43% and 12% respectively. Appositional angle closure was addressed by performing laser iridotomy with majority of the respondents preferring a site that is covered by the upper eyelid (57%). Prostaglandin analogues were the top choice as first-line monotherapy for eyes with open-angle glaucoma. Majority of the respondents (55%) opted to do laser trabeculoplasty (LTP) as an adjunct to medical therapy. Mitomycin-C was the preferred intraoperative antimetabolite for trabeculectomy by 98% (n=41). Ahmed (71%, n=30) was the more favored glaucoma drainage device (GDD) by our respondents over Baerveldt (19%, n=8).

Conclusion: This survey showed majority of the glaucoma practices of PGS members appear to adhere to the current clinical practice guidelines. **(Author's abstract)**

Keywords: *Glaucoma, Online survey, Practice patterns, Philippines, Medicine*

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0374

Survey on the Knowledge, Attitudes, and Practice Patterns of Ophthalmologists in the Philippines on the Diagnosis and Management of Dry Eye Disease

Lim Bon Siong, Ruben, Echavez, Margar

Objective: To determine the knowledge, attitudes, and practice patterns of ophthalmologists practicing in the Philippines on the diagnosis and management of dry eye disease through a survey using an online questionnaire.

Methods: A simple online survey was designed to determine the knowledge of ophthalmologists practicing in the Philippines on the definition, symptoms, diagnostics, as well as their management of dry eye disease. Respondents also provided information regarding setting and characteristic of practice, years of practice, field of practice, and number of new dry eye patients weekly.

Results: A total of 148 ophthalmologists responded to the survey with a 16% response rate. Most believed dry eye disease was associated with symptoms of ocular discomfort (99%), tear deficiency (98%), and tear film instability (97%). Symptoms believed to be associated with dry eye were dryness (97%), burning sensation (94%), foreign body sensation (93%), and discomfort/pain (93%). Most ophthalmologists diagnosed dry eye based on patient symptoms (99%), tear break-up time (93%), and fluorescein staining (91%). Very few tested for tear osmolarity to diagnose dry eye (6%). Only few used dry eye questionnaires (27%) and lissamine staining (32%). The most valuable tests included tear break-up time (92%), fluorescein staining (88%), Schirmer test (85%), and meibomian gland evaluation (83%). Treatments most commonly used were artificial tear supplements (100%), lid hygiene (94%), environmental modification (92%), and work and lifestyle modification (88%). Artificial tear supplements were the most valuable treatment (100%), followed by lid hygiene (89%) then environmental modification (85%). The most common first-line medications were carboxymethylcellulose (89%), propylene glycol (85%), and hypromellose (83%). Very few ophthalmologists classified dry eye by type (19%) and by severity (35%), but 80% tailored their treatment to the severity of the dry eye.

Conclusion: Dry eye disease is a common yet frequently underrecognized clinical condition whose etiology and management challenge clinicians and researchers alike. This study showed that ophthalmologists practicing in the Philippines who answered the survey lacked awareness on the new definition of dry eye disease, the newer diagnostic tests, and therapeutics available for diagnosing and managing dry eye disease. **(Author's abstract)**

Keywords: *Dry eye disease, Survey, Knowledge, Attitudes, Practice patterns, Philippines, Ophthalmologists, Medicine*

Synthesis of Graphene-based Nanoparticles for Biomedical Applications: a Mini-review
Frochot, CÃ©line , Acherar, Samir , Zabidi, Muhammad Azrul , Vikneswaran, Murugaiyah , Beh, Khi Poay , Tan, Edward Kong Weng , Ung, Yee Tze, Gazzali, Amirah

Graphene is a form of carbon allotrope that has received tremendous attention from researchers in various fields. Graphene oxide (GO) has unique characteristics that have proven to be useful in many areas, including biomedical and pharmaceutical applications. Its large surface area and richness in oxygen-containing functional groups enable the loading of large quantities of drug molecules and targeting agents for various diseases such as cancer. This review describes the evolution of developing and synthesizing graphene-based nanoparticles, with a specific interest in biomedical applications. The important procedures involved in the production of GO include pre-oxidation and pre-reaction steps, oxidation, downstream processing, and purification, with further processes like carboxylation and particle size reduction that are needed to obtain the graphene-based nanoparticles suitable for biomedical applications. This review will guide researchers to begin graphene research, understand the important parameters, and ensure the successful production of graphene-based nanoparticles. **(Author's abstract)**

Keywords: *Drug delivery, Graphene, Graphene oxide, Synthesis, Medicine*

A Systematic Literature Review of Nursing Interventions for Postpartum Depression and their Outcomes

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Purpose: This study was conducted to bring together studies on the common nursing interventions for postpartum depression (PPD) and their outcomes. It aims to provide interpretation of relevant findings to help further enhance the nursing care of patients with postpartum depression.

Design and Methods: A systematic literature review (SLR) approach was utilized to synthesize studies related to the management of postpartum depression and its outcomes. One hundred five studies (105) were initially retrieved from three online databases. Eventually, fifteen studies were included in this review after the screening process on quality and risk of bias assessments. Codes were identified from the included studies and were clustered into themes. A thematic map was formulated to visualize the interconnections of the nursing interventions for postpartum depression and its outcomes.

Findings: Nurses caring for patients with postpartum depression usually practice PPD education, perinatal assessment, PPD counseling, nurse-delivered psychotherapy, providing social support, drug administration, complementary and alternative therapy combined with conventional management, and patient referral. These nursing practices for postpartum depression yielded the following outcomes: (1) symptom alleviation, (2) empowerment, (3) positive feedback, and (4) negative outcomes.

Conclusions and Recommendations: There is a range of nursing interventions for postpartum depression. This review highlights the significant roles of PPD education and nursing assessment and emphasizes these interventions to be practiced not only after childbirth but also during the prenatal period to identify at-risk patients and provide early intervention. This review also emphasizes the need for more coordinated care and a multidisciplinary approach, including patient referral, to achieve better outcomes in the care of postpartum depression patients. This relates to the acknowledgment of the various factors contributing to the development of postpartum depression and its lack of clear etiology. (**Author's abstract**)

Keywords: *Postpartum depression, Postpartum depression intervention, Postpartum depression management, Postpartum depression outcome, Multidisciplinary approach, Medicine*

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0377

Telenursing: A Viable Nursing Response to the COVID-19 Pandemic

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The COVID-19 pandemic has put the delivery of vital health and nursing services uniquely challenged. Restrictions in social mobility, fear of contraction, and risks of transmission posed by this pandemic prompted healthcare institutions to deliver health care services remotely using information and telecommunications technologies, also known as telehealth. Telenursing is one of the components of telehealth. Although there are several strides in the use of nursing-related technologies in the country, telenursing is not a mainstream nursing service. Exploring telenursing and articulating the roles of nurses in this care delivery model is imperative given the current paradigm shift to telehealth and telemedicine in the healthcare system. This article provides a context for telenursing use in the local setting by providing factors affecting its implementation. A literature search was conducted to identify the benefits, challenges, requirements, competencies, activities, and outcomes of telenursing. Despite the limitations posed by this pandemic, telenursing offers a viable, cost-effective, and patient-centered approach in health services delivery. The implications in nursing practice, education, and research are explained. (**Author's abstract**)

Keywords: *Telenursing, Telehealth, COVID-19, Nursing care, Medicine*

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0378

From Testing to Coping: The Voices of People Living with HIV/AIDS

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This study aimed to explore the lived experiences of people living with HIV/AIDS in Cebu, Philippines. The study utilized Husserlian qualitative phenomenological design. Ethics clearance was acquired from Vicente Sotto Memorial Medical Center – Ethics Review Committee.

There were 7 informants that were recruited through purposive sampling and research referral techniques. The researchers used an open ended interview guide where interviews were audio recorded, transcribed and analyzed using Collaizi's method. Three (3) themes have emerged in this study. The first emerging theme is, (1) Why get

tested? With the following subthemes of, (a) Presence of Risky Behavior; and (b) Knowledge that lead to testing. The second theme is, (2) Challenges after diagnosis with subthemes of, (a) Psychosocial challenges; and (b) Physical Challenges. Lastly, the third theme is, (3) Response and Coping with HIV/AIDS with the following subthemes, (a) Establishing old and new networks: Support systems; (b) Socio-spiritual changes: lifestyle changes and being more religious; and (c) Moving Forward.

High risk sexual patterns, knowing that a partner is HIV positive and the presence of some signs and symptoms are the factors considered for testing. PLWHA's compliant of their treatment regimen despite the undesirable side effects and opportunistic infections. Stigma results to non-disclosure of status and mental health issues are common. The presence of support groups is essential; PLWHA's are willing to adapt a healthy lifestyle; and they become advocates of the disease.

There is a need to increase the promotion of safe sex practices and health education about HIV/AIDS. Continuous support is needed in order to increase visibility of support groups, and the development of self-advocacy skills of PLWHA's. Mental health should also be given attention. **(Author's abstract)**

Keywords: *People Living with HIV/AIDS, PLWHA, HIV, AIDS, Lived Experiences, Medicine*

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0379

Therapeutic Plasma Exchange as a Treatment for Central Pontine Myelinolysis in a 41-year-Old Male with Chronic Renal Insufficiency: A Case Report

Pasamonte, Donaryn Villa, Santos, Marie Joyce Urnos, Dela Cruz, Joice Bumanglag, Carabbacan, Catherine Matnao, Wong Lu-Reyes, Jane Wendolyn, Reyes, Aurelio Pantaleon S, Manalo, Guillermo III Lacuesta, Pascual, Sheryll Juan, Quilala, Deanna

Case

Therapeutic plasma exchange (TPE) has been reported as a possible treatment for osmotic demyelination syndrome – central pontine myelinolysis (ODS-CPM), a degeneration of myelin within the central nervous system related to rapid hyponatremia correction, which though uncommon, has significant morbidity, and has no established specific treatment.

We present our experience with a 41-year-old male with chronic kidney disease, maintained on steroids, who presented with lethargy and behavioral changes. Initial metabolic panel showed severe hyponatremia (Na 109 mEq/L). Despite cautious sodium correction, the patient's sensorium decreased further and was intubated. Involuntary movements of the left face and arm were later seen. T2/FLAIR hyperintensities in the brainstem and thalami affirmed the diagnosis of ODS. A total of nine cycles (one cycle every two to three days) of TPE were completed. The patient was discharged with improved sensorium, from E2VxM4 to E4VxM6, and with no indication for hemodialysis due to improved creatinine. One year later, the patient has no remaining neurologic deficits.

Our experience supports other case reports that TPE is a viable therapy for ODS-CPM. **(Author's abstract)**

Keywords: *Therapeutic plasma exchange, Central pontine myelinolysis, Chronic renal insufficiency, Medicine*

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Time to Blood Culture Positivity as a Predictor of Clinical Outcome among Septic Patients

Caoili, Janice C., Escudero, Alrik Ea

Introduction: In the setting of Sepsis, Blood Culture is one of the important diagnostic tools in aiding a clinician to determine the offending pathogen. Following the Sepsis Bundle, Blood Culture is obtained at two sites before initiation of antibiotics. However, blood Cultures are one of the expensive tests wherein some clinicians find it unnecessary and costly. This study would provide more information regarding positive blood cultures among septic patients as a prognostic tool regarding the time to positivity. Reporting Time to Positivity would aid clinicians in the severity of the infection and could be used as a clinical predictor of mortality. This study investigated the optimal cutoff point of the time to positivity to predict mortality and the association between time to positivity of blood cultures with mortality among septic patients.

Methods: This was a single-center cross-sectional study with a retrospective chart review of septic patients with positive blood cultures. The optimal cutoff point of time to positivity was determined and associated with mortality.

Results: 405 adult in-patients with sepsis in Makati Medical Center from April 1, 2017, to April 30, 2018, were reviewed. The suggested optimal cutoff TTP is ≤ 19.1 hours, with sensitivity 79.78%, specificity 28.48%, accuracy 39.75%, Youden's index 8.26%. The overall mortality rate is 21.98%. The mortality rate was higher in the TTP < 19.1 group at 23.91% compared to the > 19.1 hours group. Predictors associated with mortality are age, liver comorbidity, genitourinary source of infection, and short TTP.

Conclusion: A short TTP was associated with higher mortality rates. TTP can be clinically used to predict poorer outcomes. Therefore, patients with a short TTP should be monitored more closely, and appropriate antibiotics should have been initiated. **(Author's abstract)**

Keywords: *Time to Positivity, Blood Culture, Mortality, Medicine*

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A Traction Suture Holding Device for Glaucoma Procedures

FlorCruz, II, Nilo Vincent dG., Cabrera, Christopher Cyri

Objective: We described an adjustable traction technique for glaucoma surgeries that provided adequate visualization of the surgical field.

Methods: A prototype device was designed to provide good exposure of the surgical site by using a peripheral lamellar trans-corneal suture capable of applying and sustaining tension. Adjustments to the amount of traction required were made through the device.

Results: The device was used in 9 cases of glaucoma surgeries: 5 trabeculectomies and 4 glaucoma drainage device implantations. No significant complications were observed.

Conclusions: The device was easy to use and allowed more flexibility for the surgeon. **(Author's abstract)**

Keywords: *Glaucoma, Traction suture, Trabeculectomy, Glaucoma drainage device, Medicine*

Transition Experience to Professional Nurse: A Phenomenological Approach

Wardle, Lisa D. , Chung, Stephanie M. , Cummings, Jo-

Purpose: Transition programs have been adopted by many healthcare institutions to assist the new graduate nurse as they adjust to the work environment. The use of structured residency programs and prolonged orientations are considered best practices to ease the new graduate nurse into their role. This study aims to describe the lived experience of new graduate registered nurses as they enter the workforce.

Design: Using a qualitative research design, Van Manen's phenomenological inquiry, study participants were selected using non-probability purposive sampling. Data were collected between December 2018- September 2019 with in-depth interviews using semi-structured questionnaires. The sample (N=7) consisted of participants born between the years 1986-1996, graduated within three years of the study, and practice in the northeastern region of the United States.

Method: A modified Colaizzi approach allowed the researchers to return to the study participants to validate themes.

Findings: The experience and perceptions of new graduate registered nurses are unified in two major themes discussed within this article: emotional ambivalence and the need to escape.

Conclusion: New graduate nurses continue to feel overwhelmed and need structured guidance during their professional transition training programs. In the absence of strong support by the institution, new graduates leave the bedside. **(Author's abstract)**

Keywords: *New graduate registered nurses, Transition shock, Phenomenology, Colaizzi Method, Organizational issues, Residency programs, Turnover, Medicine*

Translation and Validation of the Tagalog Trust in Ophthalmologist Scale

Cruzat-Tsuru, Daphne Viel, Martinez, Jose Ma.

Objective: This study adapted and translated the Trust in Oncologist Scale (TiOS) into the Tagalog Trust in Ophthalmologist Scale (TTOS) and validated the latter.

Methods: The 18-item TiOS questionnaire was translated into Tagalog and validated in a cohort of 200 Filipino ophthalmology patients of a single institution. Internal consistency, construct validity, and test-retest reliabilities were determined. Exploratory factor analyses were also performed.

Results: The TTOS showed high internal consistency with Cronbach alpha of 0.92, high reliability with Pearson's coefficient of 0.85, and high validity with Spearman's coefficient of 0.67.

Conclusion: The TTOS is a valid and reliable tool to measure the level of trust of Filipino patients in their ophthalmologists. **(Author's abstract)**

Keywords: *Trust scale, Trust in ophthalmologist, Patients' trust, Questionnaire validation, Patient-physician relationship, Medicine*

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0384

Tripod Position as A Novel Adjunct Clinical Management of Moderate to Severe ARDS in COVID-19 Patients: A Case Series and Review

Raniaga, Rey Benedict , Mendoza, Rhada E. , Aquino, Portia Ann M. , Aguas, Gerard Vincent A. , Uy, R

Objective: The World Health Organization (WHO) recommends prone positioning for mechanically ventilated COVID-19 patients with Acute Respiratory Distress Syndrome (ARDS) to improve oxygenation. Subsequently, researchers facilitated the position to non-intubated COVID-19 patients as early management which showed significant improvement but with discerned limitations. Tripod position is explored as an alternative exhibiting promising results. This present study describes a case series of four patients with moderate to severe ARDS who demonstrated considerable breakthrough.

Methods: Four cases of moderate to severe ARDS were instructed to do tripod positioning as long as they can tolerate while under close supervision.

Results: An hour after assuming tripod position, all four patients presented a decrease in respiratory rate, increase in peripheral oxygen saturation, and increase in partial oxygen saturation in arterial blood gas. The assumed position was maintained by four patients without discomfort and was maintained with a mean of 12 - 20 hours per day.

Conclusions: Our findings confirmed that tripod position is advantageous to non-intubated patients with moderate to severe ARDS and may delay or prevent invasive mechanical ventilation. The position also manifested tolerance to extended duration which permitted time for the medical team to focus on managing their disease in its entirety. Nevertheless, certain aspects such as contraindication, side effects, and other adverse events that may occur have yet to be sufficiently clarified and investigated. **(Author's abstract)**

Keywords: *Tripod position, Prone position, Acute respiratory distress syndrome, Covid-19, Dyspnea-relieving position, Medicine*

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0385

True Pseudotumors and “Pseudo” – Pseudotumors: A Case Series

Angbue-Te, Andrei Paolo S. , Santiago, Maria Donn

Objective: To characterize the clinical and pathological features of 4 patients with histopathology-confirmed idiopathic orbital inflammatory disease (OID) initially diagnosed as an orbital neoplasm and 9 patients with

histopathology-confirmed orbital neoplasm that presented as idiopathic OID.

Methods: The medical records of 13 patients with orbital mass were reviewed. All biopsies were performed by one orbit surgeon.

Results: There were 4 patients in the histopathology-confirmed idiopathic OID group with preoperative diagnosis of orbital neoplasm. Mean age at presentation was 27 years. Follow-up period ranged from 6 to 41 months. The left orbit was predominantly involved (3/4). The presenting symptoms and signs included proptosis (2/4), diplopia (1/4), and inflammation (1/4). The preoperative best-corrected decimal acuity mean was 0.92. Three of 4 patients retained their preoperative visual acuity postoperatively. There was recurrence of inflammatory signs in only 1 patient, which responded well to oral corticosteroids. In the histopathology-confirmed orbital neoplasm with preoperative diagnosis of idiopathic OID group, there were 9 patients with mean age at presentation of 52 years. Follow-up period averaged 7.5 months (range: 0.5 - 83 months). The presenting symptoms and signs included proptosis (4/9), inflammation (3/9), orbital pain (1/9), and epiphora (1/9). The preoperative best-corrected decimal acuity mean was 0.78. Histopathology and immunohistochemistry of the orbital masses revealed malignancy in 80% (7/9) of these cases.

Conclusions: Idiopathic OID remains a diagnostic dilemma for many physicians. A detailed history, comprehensive physical examination, and appropriate radiological evaluation are essential to differentiate OID and non-inflammatory orbital conditions such as neoplasms. Biopsy is recommended when there is poor or equivocal response to steroids or suspicion of orbital malignancy. (**Author's abstract**)

Keywords: *Pseudotumor, Orbital inflammatory disease, Neoplasm, Biopsy, Histopathology, Medicine*

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0386

Tuberculous Laryngitis mimicking as Fungal Laryngitis: A Case Report

Ramos, Cassius Kay G., Robles, Jeremyjones

Tuberculous laryngitis was considered common during pre-antibiotic era but after the effective antitubercular medication, the incidence of laryngeal tuberculosis had decreased to less than one percent². Clinical presentation is mostly unclear but usually presents with odynophagia, cough, hoarseness of voice and frequently confused with other diseases, more importantly fungal laryngitis.

This is a case of a diagnostic dilemma of an immunocompetent 55-year-old male presenting with odynophagia, dysphagia and hoarseness of voice that was initially managed as a case of fungal laryngitis due to history of prolonged use of dexamethasone and findings of leukoplakia in laryngoscopy. Despite adequate time for treatment, no significant improvement was noted. Acid fast bacilli microscopy tested negative. A previous history of pulmonary tuberculosis treatment and chest radiographs revealing fibrosis on both upper lungs puts tuberculous laryngitis as one of the differentials. Sputum GeneXpert/RIF taken and tested positive, hence lead to the diagnosis of tuberculous laryngitis. Guideline-based quadruple anti-tubercular therapy started and had showed a positive response.

Laryngeal tuberculosis (LTB) requires a high index of suspicion since it mimics various laryngeal diseases such as fungal laryngitis or malignancy. Clinicians should always be aware of the atypical clinical features of laryngeal tuberculosis and the possibility of primary laryngeal tuberculosis, for early diagnosis and prompt treatment, thus preventing morbid complications. A positive mycobacterial culture along with a typical histopathological appearance remain the cornerstone of diagnosis, but sputum AFB in microscopy and GeneXpert/RIF must not be ignored as these can be cost-effective diagnostic alternatives. (**Author's summary**)

Keywords: *Fungal laryngitis, Laryngeal tuberculosis, Gene X-pert/RIF, Medicine*

Understanding Experiences of Young Adult Males with Below-Knee Amputation

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Purpose: This study was done to explore the experiences of young adult males with below-knee amputation at surgical wards and clinics in Teaching Hospital, Kurunegala, Sri Lanka.

Design: The study used the phenomenology design of qualitative research.

Methods: Face-to-face interviews were conducted for data collection using a theme list with a saturation point reached at 16 participants. The duration of an interview was 30-45 minutes and was recorded on audiotape and transcribed later. Phases of familiarization with the data, coding, searching for themes, reviewing themes, defining and naming themes, and writing up were conducted accordingly to thematic analysis.

Findings: The young adult male below-knee amputees showed changes in lifestyle with dependence on others, supporting aids, and experiencing discomfort. They showed mental distress with dissatisfaction with life and suffering of life. Additionally, they lacked power with identity changes and encounter economic problems in their lives.

Conclusions and recommendations: It is essential to give special education to the staff caring for the below-knee amputees to minimize their unpleasant and challenging experiences. Health staff can motivate family members and friends for individuals' mental adjustment to their new life. Additionally, the social attitude of the community should be changed positively regarding amputated patients. **(Author's abstract)**

Keywords: *Knee amputation, Sri Lanka, Phenomenological study, Males, Medicine*

Understanding Hope and Spiritual Well-being of Filipino Caregivers of Terminally-Ill Cancer Patients

Bonito, Sheila , Concepcion, Zena

This descriptive correlational study determined the level of hope and spiritual wellbeing among Filipino caregivers of terminally-ill cancer patients, and the relationship of hope and spiritual wellbeing to various patient and caregiver characteristics. The study involved 50 caregivers of terminally-ill-cancer patients, mostly belonging to 51-60 age group (42%) with mean age of 44 years (SD=15), mostly females (72%), married (62%), Roman Catholic (90%), high school graduates (50%), spouses of patients (28%), with an average of 18.36 hours of caregiving in a day for an average duration of 21.4 months. The hope and spirituality scores of caregivers were 3.24 (SD=0.28) and 3.25 (SD=0.46) respectively. Caregivers had high self-efficacy (3.29) but low social support (1.72). Patient's age was moderately correlated with caregiver's hope ($r=0.3$; $p=0.03$). Caregiver's educational

attainment was significantly associated with hope ($p<0.01$) and spiritual wellbeing ($p<0.01$). Caregiver's self-efficacy was moderately correlated with their spiritual wellbeing ($r=0.46$, $p<0.01$). Caregiver's hopes were (1) for their patients to get well and recover from their illness, (2) to have strong spiritual faith and be healed with God's help (3) to be hopeful and positive, (4) hope for longer life, (5) resumption of family relations, and (6) free of pain and other discomforts. Caregivers' thoughts on spiritual wellbeing were to have: (1) stronger faith, (2) being prayerful, and (3) being positive. Compared to other studies, Filipino caregivers had lower hope scores, but higher spiritual wellbeing scores. Nursing interventions promoting hope and spiritual wellbeing should be conducted in patients' room, clinic appointments, or during home visits. Nursing care promoting hope and spiritual wellbeing should be part of patients' activities for daily living. **(Author's abstract)**

Keywords: *Cancer patients, Caregivers, Medicine*

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0389

Understanding the Lived Experience of Filipino Mothers on Water Birth

Tabtab, Elija Shane P. , Soriano-Chicano, LeDenisse , Valencia-Raymundo, Agnes, Soleta, Nastashya Allan

Purpose: The study purported to explore the lived experience of a select group of Filipino mothers who had undergone water birth delivery.

Design: A qualitative, descriptive phenomenology research design was used to investigate the phenomenon. The sample ($N=10$) was comprised of women who had undergone water birth, 25-45 years old, primiparous and multiparous. A self-report method using face-to-face, in depth, semi structured interviews guided by an aide memoire abetted the data collection procedure. The principles of beneficence, respect for human dignity, and justice were observed throughout the research process.

Mode of Analysis: Significant statements were culled from the field text and analyzed using Colaizzi method. The validation techniques of members checking and critical friends were utilized.

Findings: The findings revealed that mothers found the experience extraordinary and the warmth and buoyancy of the water used in such mode foster comfort and ease of delivery while enabling them to manage their pains positively. Four themes emerged namely: (1) In her own private world; (2). At her fullest power; (3) To her ease and comfort; and (4) At her own course

Conclusions: Research in recent times has provided limited evidence in making water birth a prevalent alternative for women to welcome their babies into this world. It is vital to focus on the experience of water birth from the mother's lens. Water birth has potential benefits to both mother and neonate and promotes maternal satisfaction; however, it remains the responsibility of health practitioners to provide credible evidence of its safety to prove that water birth is a valuable option to conventional delivery. **(Author's abstract)**

Keywords: *Water birth, Descriptive phenomenology, Colaizzi method, Medicine*

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0390

Upper Eyelid and Eyebrow Dimensions in Adult Filipinos

Ang, Lourdes T. , Sabundayo-Tiu, Maria Suzanne A. , Omaña, Elaine Ma

Objectives: To determine the normative values for upper eyelid and eyebrow dimensions among adult Filipinos and the effects of age and sex on these parameters.

Methods: This was a prospective, descriptive study involving 75 Filipino adults who were recruited from a single tertiary government hospital in the Philippines. Profile data collected included age and sex, while clinical data included measurements of the pretarsal skin height (PSH), eyelid crease height (ECH) and eyebrow height (EBH) by a single observer, with the average of an individual's eyes used as the representative measurement. An intereye correlation coefficient was calculated. The subjects were categorized into 4 age groups (i.e. early, early middle, late middle, and late adulthood) and according to gender for statistical analyses. All measurements were compared across age groups using Analysis of Variance (ANOVA) and between sexes using t-test.

Results: This study included 43 males and 32 females. Overall, mean PSH measured was 4.5 ± 1.5 mm; mean ECH was 5.9 ± 1.7 mm, while mean EBH was 10.4 ± 2.7 mm. Means of PSH and EBH showed similar measurements between sexes. The mean ECH of females in early adulthood was significantly higher than the mean ECH of males belonging to the same age group ($p=0.01$). Among the female group, mean EBH was also observed to increase with age ($p=0.02$). A high degree of inter-eye correlation was observed ($r = 0.94$ to 1.00).

Conclusion: Filipinos have unique upper eyelid and brow features compared to other races. Sex-related differences were not identified in PSH and EBH. While EBH increased with age among female subjects. (Author's abstract)

Keywords: *Eyelid, Eyelid Crease Height, Pretarsal Skin Height, Eyebrow Height, Adult Filipinos, Medicine*

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0391

Use of Convalescent Plasma Therapy among Hospitalized Coronavirus Disease 2019 (COVID-19) Patients: A Single-Center Experience

Torres, Rosalio P. , Ariola-Ramos, Mary Sheila , Mangahas, Claudette G. , Gatchalian, Ellen M. , Mesina, Flordel

BACKGROUND: COVID-19 disease has strained our healthcare system. Convalescent plasma is an adjunct treatment used in emerging infectious diseases in past epidemics.

OBJECTIVE: This study aims to determine the outcome and clinical course of COVID-19 patients who received convalescent plasma (CP) transfusion at Cardinal Santos Medical Center.

METHODS: This is a retrospective cohort analytical study of 75 patients who received convalescent plasma.

RESULTS: Median time from admission to CP transfusion was 3 days. Majority of patients received additional therapies including dexamethasone (100%), antibiotics (100%), remdesivir (95%), hemoperfusion (88%), tocilizumab (65%), or combinations of these. Among the survivors, the median length of stay (LOS) was 15 days while non-survivors had a median LOS of 6 days. One patient (1.33%) had a mild transfusion reaction. Four patients (5.33%) developed deep vein thrombosis despite anticoagulation. There was improvement in the inflammatory markers (LDH p value 0.04, CRP p value 0.00, Ferritin p value 0.0001). There was improvement in the pulmonary parameters - increase in mean PaO₂, mean SaO₂, and mean PFR; and decrease in mean FiO₂ and mean RR post-treatment. Median LOS is 14 days for the CP group vs 11 days for the non-CP group. Mortality rate among the CP group was 25.33% while the non-CP group was 26.67%. LOS and mortality rate did not reach

statistical

significance.

CONCLUSIONS: There was no significant difference in mortality and length of hospital stay in patients given CP vs controls. CP when combined with other treatment modalities might have a role in the improvement of inflammatory markers and pulmonary status. **(Author's abstract)**

Keywords: *Convalescent plasma, Hospitalized COVID-19, Medicine*

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0392

Validation of the Filipino Translation of the Impact of Vision Impairment for Children (IVI_C) Questionnaire among School Children

MonzonêPajarillo, Andrea Kristina, Santiago, Alvina Pauline D., Sipin, Sofia Ceci

Background. Quality of life questionnaires provide valuable information in assessing the effects of health interventions and public health campaigns. In the Philippines, we only have a few validated questionnaires targeted specifically for children.

Objective. To translate to Filipino and validate the translated Impact of Vision Impairment for Children Questionnaire (IVI_C).

Methods. This is a translation and validation study of the IVI_C. The IVI_C was translated following international guidelines of forward–translation and back-translation methods. After completion of the Filipino IVI_C version, pretesting was performed on school-aged children 8 to 18 years old through convenience sampling in the outpatient department and Pediatric Ophthalmology and Motility Clinic at *Sentro Oftalmologico* Jose Rizal, Philippine General Hospital from January 1 to August 31, 2018.

Results. We included 130 participants in the study. The calculated Cronbach’s alpha coefficient of 0.88 for the translated Filipino version of the IVI_C suggested high reliability and internal consistency. Rasch analysis showed comparability of the Filipino translation to the original English version of the questionnaire.

Conclusion. Our study showed that the Filipino version of IVI_C questionnaire was of high reliability and validity. **(Author's abstract)**

Keywords: *Quality of life questionnaire, Visually impaired children, Filipino children, Vision-specific questionnaire, Medicine*

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0393

Validation of the Filipino Version of the Pittsburgh Sleep Quality Index (PSQI) in Perpetual Help Medical Center–Biñan and University of Perpetual Help Biñan

Espiritu-Picar, Rosalina B., Bernabe, Kris A

Introduction: Sleep health is essential to overall physical, mental and neurobehavioral well-being. Poor sleep quality has been linked to numerous health conditions, impaired school and work performance and increased risk for accidents. Hence, evaluation of a person's sleep health is vital to any medical examination. Questionnaires such as Pittsburgh Sleep Quality Index (PSQI) have an important role in the preliminary evaluation of sleep health. PSQI has been regarded as the standard instrument to measure sleep quality. It has been translated into several languages and has been validated in various populations. This study aimed to assess the validity and reliability of the Filipino version of the PSQI.

Methods: The Filipino version of the PSQI was administered to 200 adult subjects. After 24-48 hours, the English version of the PSQI was administered to the same respondents. Basic demographic information, co-morbidities and use of medications were obtained. Cronbach's alpha and Kappa test of agreement were measured to test the reliability of the Filipino version while confirmatory factor analysis was used to determine the validity of the translated tool.

Results: The Filipino version of the PSQI was reliable with Cronbach's alpha of 0.70. The agreement coefficient of all items in the questionnaire were all above 0.81 indicating a very good level of agreement between the English and Filipino versions. Confirmatory factor analysis showed that items Q1, Q3, Q4, Q5a-Q5i, Q6, Q7, Q8 and Q9 were significant with p-values below 0.05. Overall, as measured by the Goodness of fit, it showed that the items in the Filipino version of the questionnaire are directly correlated with English PSQI Score.

Conclusion: The Filipino version of the PSQI is a valid and reliable instrument to assess sleep quality. (Author's abstract)

Keywords: Sleep, Sleep questionnaire, Sleep quality, Medicine

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0394

Validity and Reliability Testing of Indonesian Version of Orto-15: An instrument for orthorexia nervosa assessment

Warsini, Sri, Supriyanto,

Eating disorders are often underdiagnosed. Orthorexia nervosa (ON), a new type of eating disorder, is defined as excessive preoccupation with healthy eating, causing significant nutritional deficiencies and social and personal impairments. The ORTO-15 is a 15-item instrument widely used to evaluate orthorexia nervosa. It was developed by Donini et al (2005) in Italian and has been translated and adapted in other languages. In this study, the validity and reliability of the Indonesian version of ORTO-15 were assessed.

The Indonesian version of the instrument was then reviewed by experts after translation. The back-translation was assessed for consistency with the original instrument. The instrument was then statistically-tested for validity and reliability on 50 randomly selected subjects. The subjects were balanced in gender and the mean age was 19.4 + 0.8 years. The reliability was tested using Cronbach's alpha. The validity was tested using Pearson's product-moment correlation and confirmatory factor analyses (CFA).

The Pearson product moment verified good validity for the instrument ($r = 0.369 - 0.881$). CFA analyses confirmed good communalities (extraction > 0.5) and revealed three components construct (cumulative 73.5%). Reliability test confirmed that the instrument had good reliability (Cronbach's alpha = 0.915).

The ORTO-15 Indonesian version is a valid and reliable instrument for the assessment of ON. (Author's abstract)

Keywords: Eating disorder, Instrument, Validity, Reliability, Medicine

Viral Myopericarditis and Viral Encephalitis as manifestations of COVID-19 infection: A Case Report

Amorado-Santos, Florence , Gnilo, Mariean Rocielle D., Cruzat, Ke

Introduction: Coronavirus disease (COVID-19) is currently a global health crisis and is caused by a new strain of coronavirus. However, emerging literature of case reports noted possible extrapulmonary manifestations of the disease. Because COVID 19 is a relatively new disease, at present, little existing literature tackles the diagnosis and therapeutic management of COVID-19 related conditions outside the pulmonary system.

Case: A 24-year-old male presented with sudden stiffening of all extremities but non-contrast computed tomography (CT) scan was unremarkable. Chest X-ray revealed interstitial pneumonia and SARS-CoV-2 RT-PCR (OPS/NPS) was positive. Electrocardiogram (ECG) findings showed supraventricular tachycardia and had elevated Troponin I levels. Pertinent physical findings noted were slurring of speech, dysmetria, and vertical nystagmus. The patient was initially treated as a case of Bacterial Abscess versus Viral encephalitis. Pericardial ultrasound revealed small pericardial effusion and was started on Colchicine. Repeat cranial CT scan noted unremarkable results but due to persistence of symptoms, the patient was started with Dexamethasone. On Day 16 of illness, the patient was noted to have full resolution of symptoms. Rapid antibody testing was done which revealed positive for both IgG and IgM hence the patient was discharged with the final diagnosis of Viral Myopericarditis resolved, Viral encephalitis resolved, COVID-19 pneumonia recovered.

Conclusion: Extrapulmonary manifestations have been reported increasingly as an atypical presentation of COVID 19 infection. Early recognition of viral myopericarditis and viral encephalitis as a manifestation of COVID 19 can lead to the initiation of proper treatment and management. More reports on these cases can aid future studies on diagnostics and therapeutic approaches during the COVID-19 pandemic. (**Author's abstract**)

Keywords: Covid19, Viral myocarditis, Viral encephalitis, Case report, COVID-19, SARS-COV-2, Coronavirus infection, Medicine

The Yield of Malignancy for Early Fixation versus Routine Fixation of Pleural Fluid Samples

Orcasitas, Jessie F. , Yee, Richard Baron B. , Cortez, Ria Katr

Background: The etiology of pleural effusion remains unclear in nearly 20% of cases. One way to diagnose malignancy is by doing pleural fluid cytology. There are factors that influence the yield of pleural fluid cytology and one of them is appropriate and timely fixation of samples. Currently, there is no local consensus regarding the timing with which the specimen should be fixed.

Objective: The study aims to compare the yield of malignancy between early fixation versus usual fixation of pleural fluid samples, meaning there is no set time for fixation to be done.

Methodology: The study employed a prospective cross-sectional research design. All patients with pleural effusion who fulfilled the criteria set by the study were included. Two sets of pleural fluid samples were collected amounting to 20cc each. First sample was assigned as Bottle #1 and placed immediately with fixative while the second sample was assigned as Bottle #2. Bottle #2 underwent routine fixation which follows no fixed or standard time of fixation. The time difference between the fixation of two sample groups greatly varied with Bottle #1 fixed immediately right after collection while Bottle#2 depends on the time it will be processed by the laboratory personnel. Both samples were submitted for cell block and cell cytology reading.

Results: Characteristics of the 55 patients included in the study showed age group range from 41 to 65 years of age, with 27 male and 28 female patients. Only one third had history of smoking. There were 21.82% who had family history of cancer and with and suspicious mass on chest radiograph. Out of 55 patients, 29 patients had history of previous diagnosis of cancer, 23 had recurrent pleural effusion, and 28 had chest radiograph with suspicious nodules. Based on gross appearance, there were 20 serous and 21 sanguineous pleural fluid noted. Mean cell count was high ($1,115.50 \pm 741.02$) with lymphocytic predominance (82.56 ± 24.46). Elevated protein concentration ($5,388.25 \pm 8,230.46$) and LDH (484.17 ± 248.72) were noted. Glucose (8.78 ± 6.68 mmol/L) was low. There were 21 patients who had high WBC, 24 with high protein and 16 with elevated LDH. There were 3 patients who were positive for AFB and none for KOH. Comparative analysis showed that the pleural fluid samples assigned to the routinely fixed group which were handed to the nurse after thoracentesis, then forwarded to the laboratory through a ward laboratory aide or patient watcher for fixation with with 95% alcohol by the laboratory personnel significantly had a longer duration of 406.62 minutes as compared to immediately fixed at 12.27 minutes ($P < 0.01$). For diagnosis of malignancy, significantly more cases were diagnosed in the immediately fixed group with 36.36% cases versus 18.18% ($p = 0.016$).

Conclusion: Among patients with suspected malignant pleural effusions, early fixation of pleural fluid samples resulted in higher histopathology yields as compared to those fixed after going through the routine fixation. (Author's abstract)

Keywords: Malignant pleural effusion, Pleural fluid analysis, Lung malignancy, Medicine

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NUTRITION

0397

A Case Study on Undernutrition among Children under Five Years of Age in Barangay Calumpang, Nagcarlan, Laguna

Maneja, Ma. Charina P., Barrion, Aimee Sheree A., Salvo, Regine Summer T., Lanorio, Ma. Cristina

Background. In 2020, Barangay Calumpang, a 2nd class municipality in Nagcarlan, Laguna recorded the highest prevalence of undernutrition among children under five years of age out of the 52 barangays.

Objectives. This study was undertaken to describe the factors possibly causing undernutrition among children under five years of age in Barangay Calumpang and provide key recommendations to improve their nutritional status.

Methods. The study used a descriptive research design wherein secondary data from the 2020 Barangay Management Information System (BMIS) and Operation Timbang (OPT) 2021 was merged to extract the children's data. The Statistical Package for the Social Sciences (SPSS) was used for the principal component analysis (PCA) and creation of the wealth index. The children's nutrition situation and profile were also cross-tabulated.

Results. We included 28 children. Undernutrition was more prevalent in boys than girls. Most of the children had improved water sources, sanitation facilities, and waste disposal methods. The wealth index showed that half of the subjects were in the lower quintiles, and all were partially immunized. The most prevalent forms of undernutrition were severe underweight (36%) and severe stunting (39%). Other forms of undernutrition were also present in the barangay, such as underweight (14%) and severe wasting (14%). There was also a prevalence of 11% for both stunting and wasting.

Conclusion. Undernutrition was more frequent in boys, lower quintile households (stunting), and partially immunized children. Conducting gender-targeted nutrition programs, developing nutrition-focused livelihood programs, increasing awareness on the advantages of immunization, and promoting proper infant and child feeding practices were some of the recommendations given to improve the nutritional status of children under five. **(Author's abstract)**

Keywords: *Child undernutrition, Rural community, Philippines, Nutrition*

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0398

Determinants of Underweight and Stunting among 6–59-months-old Indigenous Children in the Philippines

*Angeles-Agdepp, Imelda, Amita, Patricia Isabel G., Gulay, Joanne Jette S., Maniego, Ma. Lynell V.,
Dorado, Julieta B., Viajar, Row*

Data on the nutrition and health situation of indigenous people (IPs) across groups in the Philippines is limited. This study determined the factors associated with underweight (UW) and stunting of 6–59-mo-old indigenous children utilizing the 2018 Expanded National Nutrition Survey data of the Department of Science and Technology's Food and Nutrition Research Institute. The study participants were 1,173 indigenous people households and their 6–59-mo-old children covering 29 provinces and highly urbanized cities. Potential predictors of UW and stunting were examined using descriptive and logistic regression analyses. Multivariate logistic regression analysis showed that indigenous children 6–59-mo-old living in food-insecure households, with an unimproved source of drinking water, and with inadequate riboflavin intake were more likely to become UW than their counterparts. Likewise, indigenous children belonging to food-insecure households, children who have not undergone newborn screening, those with inadequate energy intake, and vitamin A deficient children were more likely to become stunted than their counterparts. Policy actions should focus on improving the indigenous people's household food security and source of drinking water, child's nutrient intake, vitamin A status, and participation in child's health and nutrition programs. Participation in a vitamin A supplementation program and strengthening backyard gardening to increase accessibility and use of vitamin A-rich foods may help improve the vitamin A status of a child. A follow-up study exploring the behavioral barriers to IP households' participation in health and nutrition programs among children under five is recommended. **(Author's abstract)**

Keywords: *Children, Indigenous peoples, Philippines, Stunting, Underweight, Nutrition*

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0399

Snacking Patterns of Filipino Children: Frequency and Contribution to Energy and Dietary Intakes

Ducay, Apple Joy D. , Goyena, Eva A. , Desnacido, Josie P. , Serafico, Mich

Snacking can be defined as eating outside the three main meals in a day, regardless of the amount or type of foods consumed. Snacking patterns vary between developing and developed countries, and across nations around the globe. Utilizing data from the Philippine ENNS collected in 2018 and 2019, the authors were able to determine the distribution and frequency of snacking among Filipino children, the type of snack foods consumed, and the contribution of snack foods to their energy and dietary intakes. Results revealed that around 70% of Filipino children consume snacks once a day, usually as afternoon snacks. Moreover, consumption of snack foods decreases as the age of children increases. The snack foods frequently consumed are pastries and cookies, bread, crackers, and biscuits, along with sugar-sweetened beverages – with an average energy intake of 300.0 kcal from snack foods. Snack foods contributed 31.2% of the total daily energy intake for Filipino children aged 3–5 yr old, 25.1% in 6–9 yr old, and 21.6% in 10–12 yr old. The nutrient content of the snack foods ranged from 29.5–46.7 g protein, 295.4–347.8 mcgRE vitamin A, 5.4–7.7 mg iron, and 272.3–381.7 mg calcium. More than half of Filipino children consumed snack foods at least once a day, with a higher proportion of snackers meeting the recommended energy intakes and estimated average requirements than non-snackers. However, the promotion of healthy snack choices such as fruits and vegetables and other nutrient-dense foods needs to be strengthened. Findings support the need to develop guidance on healthy snacking among Filipino children and represent a key target for food and nutrition policies to improve the dietary quality of snacks in this population. **(Author's abstract)**

Keywords: *Energy, Filipino children, Nutrition, Snacking, Survey, Nutrition*

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PHYSICS

0400

Calorific Values and Mechanical Compression Property of Briquettes Made of Palm Shell with Plastic Addition

Aditya, Irfan Dwi , Gusnia, Yessi , Wi

In Indonesia, palm shells and plastic waste are quite abundant, and they have the potential to cause environmental pollution. Additionally, the availability of fossil fuels is dwindling, so other energy sources are needed. This study aimed to find a solution to these problems. In this study, briquettes based on dried palm shells (*cangkang kelapa sawit* or CKS) with the addition of polypropylene (PP) and polyethylene (PE) plastics were prepared and characterized. The briquettes were made using cassava starch adhesive, and the densification was carried out at a pressure of 1283.40 N/m² for 30 min. The briquettes were made with varying amounts of plastic added to the mixture: 1, 2, 3, and 4 % (w/w % of CKS). The produced briquettes were analyzed for their calorific values and mechanical compression properties. Calorific value is an important parameter related to the energy content of briquettes as fuel. A compression test is important since the briquettes must resist external compression load due to stacking during storage and transportation. The calorific values of the briquettes obtained from the experiments were found to be in the range of 27.14–27.7 MJ/kg, wherein the calorific value for briquettes containing PP is higher than that of the ones containing PE. From the compression testing, it was found that the higher the plastic content, the higher the compression modulus of elasticity and ultimate strength of the briquettes. As with the calorific values, the modulus of elasticity, and ultimate strength value of briquettes containing PP are higher than that of the ones containing PE with the same palm-to-plastic ratio. **(Author's abstract)**

Keywords: *Briquette, Calorific value, Compression, Palm shell, Plastic, Physics*

Momentum Distribution in the Classically Forbidden Region of a Ballistic Particle at the Turning Point

Villanueva, Anthony Al

A wave packet $\psi(x, p, t)$ of a single particle has a statistical correlation between its position x and momentum p , quantified as the position-momentum covariance. The covariance influences wave packet spreading and the probability current through a given point. This paper shows another effect of the covariance: non-zero covariance can manifest as an asymmetry of the regional momentum density. Consider a selective measurement $\rho(x, p) \rightarrow |\psi(x, p)|^2$ where the initial state $\psi(x, p)$ is projected into the state $|\psi(x, p)|^2$ within a smaller region $\delta x < \delta x_{TM} < \delta x_{TM}$. The momentum representation of the projected state is $\psi(x, p) = \hat{Y}^{-1} \rho(x, p)$ and the corresponding momentum density $|\psi(x, p)|^2$ is the regional momentum density. This paper examines a molecule-sized particle under uniform gravity (represented by a Gaussian wave packet $\psi(x, p)$) at the classical turning point. I consider the effect of the covariance of $\psi(x, p)$ on the regional momentum density in the classically forbidden region. The initial state $\psi(x, p)$ with a given covariance is projected into the classically forbidden region, producing the state $\psi(x, p)$. If the corresponding momentum wave function is $\psi(x, p)$, the regional momentum density is $\rho(x, p) = |\psi(x, p)|^2$. I derive an analytic expression for $\rho(x, p)$ that shows that a non-zero covariance predicts an asymmetric momentum density in the classically forbidden region. This gives us a measure of control in preparing a preferred momentum distribution in the classically forbidden region using the appropriate covariance, at the price of a larger momentum uncertainty due to the uncertainty principle (as the configuration space of the particle is decreased). Also, since the momentum density is obtained experimentally from the statistics of momentum measurements, we can measure the covariance through comparison (Author's abstract)

Keywords: Gravity, Position-momentum covariance, Quantum mechanics, Regional momentum density, Selective measurement, Physics

Simulated Docking of alpha-Conotoxin Interactions with Nicotinic Acetylcholine Receptors

Bautista, Clarence Lei B., Acda, Ron Michael V., Bascos, Neil Andrew D., Jimenez, Elsi

The nicotinic acetylcholine receptors (nAChRs) are linked to several biological processes and neurological conditions. The α -conotoxins represent an essential resource for ligands with which to explore structure-function correlations for a variety of nAChR subtypes. With the multitude of nAChR subtypes occurring *in vivo*, it is imperative to search for subtype-selective ligands to effectively utilize their modulatory functions for their target receptors. In this work, docking simulations using PatchDock showed that either the replacement of Ala10 with the more hydrophobic Leu in PnIA to PnIA[A10L] or the presence of a sulfated tyrosine in the structural scaffold of PnIA[Y15Y] or PnIB[Y15Y] (Y stands for sulfated tyrosine) is sufficient to alter the interactions of

α -conotoxins PnIA and PnIB for their target nAChR receptor subtypes – $\alpha 7$ and $\alpha 3\beta 2$. The employed protocol can be utilized to screen for ligand docking and amino acid residue interactions of α -conotoxins to certain nAChR subtypes. This was tested on α -conotoxin LoIA, which was predicted to preferentially bind to the $\alpha 3\beta 2$ nAChR over $\alpha 7$ nAChR. The present work is supportive of the idea that the conserved α -conotoxin structural scaffold can be further investigated to guide the synthesis of novel nAChR ligands with greater specificity. The results of this study will be useful in the rational design of selective nAChR antagonists for potential peptide therapeutics. **(Author's abstract)**

Keywords: #945-conotoxins PnIA[Y15Y], PnIB[Y15Y], and LoIA, #9457 and #9453#9462 nAChRs, Molecular docking, Molecular modeling, Sulfation of tyrosine, Physics

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SCIENCE AND TECHNOLOGY

0403

Estimation of Measurement Uncertainty for the Analysis of Arsenic in Water by Hydride Vapor Generation–Atomic Absorption Spectrometry

Valdueva, Johanna Andrea C. , Damian, Ruth L. , Ubando, Isaiah E. , Abarintos, Vernalyn R. , Kalacas, Noel Angelo P. , Dablio, Admer

Every person should have the right to have access to an adequate supply of safe drinking water. However, the presence of different chemical contaminants compromises its quality. Among these chemical contaminants is arsenic, particularly its inorganic species, which when consumed at certain levels in drinking water can cause cancer and heart, respiratory, and neurological problems. For this reason, the determination of arsenic in water requires the use of a validated test method. In this context, the estimation of measurement uncertainty (MU) is an important tool that identifies the impact of each step of the measurement protocol on the overall accuracy and reliability of measurement results. This study is important for drinking water consumers to have accurate test results and can be used by testing laboratories as a guide in their MU calculations for arsenic analysis. In this paper, MU estimation was presented as a validated test method for the analysis of arsenic in a water sample by hydride vapor generation–flame atomic absorption spectrophotometry (HVG-FAAS) using the bottom-up approach. The concentration of arsenic found in the water sample was $0.530 \pm 0.07 \mu\text{g L}^{-1}$ ($k = 2$, norm.), which complies with the maximum allowable level (MAL) of arsenic at $10 \mu\text{g L}^{-1}$ set in Philippine National Standards for Drinking Water (PNSDW) of 2017. The concentration of arsenic in the sample solution is the major contributory component to the estimated uncertainty with 90.60%; 7.07% is due to overall bias and 1.87% to method precision. Based on this outcome, this study can provide a suitable procedure for estimating MU in HVG-FAAS analysis of arsenic in clean water. Further studies can be done for dialysis water, wastewater, and environmental water. **(Author's abstract)**

Keywords: Arsenic, HVG-FAAS, Measurement uncertainty, Water, Science and technology

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0404

Exploring Ethnoscience in Hablon Weaving of Miagao as Context for a Culturally Relevant Science Education

Diesto, Bema Rita , Muyong, Jr., Pelagio M. , Famanila, Sharon Rose F. , Noble, Janice Irene T. , Subong, Kathleen D. , Tajolosa, Mae Angeline T. , Coronado, Edsel O., Pamos, Rey Ja

Miagao's *Hablon* weaving traditions shape pride, joy, opportunities, and honor in their weaving communities. This paper explored and examined the science concepts of the hablon weaving traditions as a context for culturally relevant science education. Three hablon weavers were selected from each hablon center in the municipality of Miagao, Iloilo, Western Visayas, Philippines. The data was collected using anthropological tools such as memory banks, field notes, journals, and interview guide questions. The data were analyzed through thematic analysis. *Hablon* is a vivid and creative product that is a source of pride for the people of Miagao. Making the *hablon* is a complex process. Patience, a good hand pulse, and coordinated foot and hand motions are required. Core materials, tools and equipment, and procedural procedures are all factors to consider while creating a *hablon*. A Hablon weave takes about two hours to prepare, including planning, preparing the loom and threads, handloom weaving, and warping the threads. Science principles like the center of gravity, equilibrium, the string's tension, force, stress and strain, tensile strength, and climatic and weather factors that impact the stability of the thread are all visible in the Hablon weaving process. Weavers strive tirelessly to maintain the tradition and carry on the elders' tradition by encouraging the youth to participate and learn the ways of hablon weaving. **(Author's abstract)**

Keywords: *Culturally Relevant Education, Ethnoscience, Hablon, Science Education, Science and technology*

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0405

Gluing Characteristics of Giant Bamboo Using Four Commercial Adhesives

Ramos, James Edelbert C. , Jimenez, Jr., Juan

The study aimed to determine the bonding performance of laminated giant bamboo [*Dendrocalamus asper* (Schult.) Backer] glued with four commercial adhesives (PVAc-D3, PUR, UF, PF) at different surface pairings (pith-pith, pith-skin, and skin-skin) and glue spread rates (100, 150, and 200 g/m²). Kiln-dried giant bamboo poles were rip-sawn, planed, and cut to length to produce slats for lamination. Slats for surface roughness and wettability tests were sanded with 180-grit sandpaper on both skin and pith surfaces. Surface roughness of the skin and pith was measured using Mitutoyo SJ-210 SurfTest unit, whereas wettability was determined via the sessile drop method. Giant bamboo slats were bonded using specific lamination parameters for each adhesive. Tensile shear tests at dry and wet conditions were performed on the laminates to determine bond strength. The results showed that the bamboo pith had a rougher texture than the skin but with insignificant contact angle differences. Moreover, PVAc-D3 and PUR gave the highest and lowest initial contact angles on both sides, respectively, with PUR maintaining the smallest values throughout the contact duration. Adhesive, surface pairing, and some interactions (adhesive x glue spread and adhesive x surface pairing) significantly affected the dry shear strength, whereas adhesive and adhesive x surface pairing influenced wet shear strength. PUR-bonded laminates had the highest dry shear strength, followed by PF, PVAc-D3, and UF. In terms of wet shear strength, only PVAc-D3 did not conform to the minimum glue bond strength requirement of more than 1 MPa and cohesive bamboo failure of at least 40% (PNS 2099:2015). Skin-skin and pith-pith surface pairing yielded the highest and lowest dry shear strengths, respectively. Increasing the amount of glue did not translate to a stronger bond. PUR, UF, and PF are feasible alternatives to PVAc-D3 in engineered bamboo production for various end-uses. **(Author's abstract)**

Keywords: *Engineered bamboo, Lamination, Phenol formaldehyde, PUR, PVAc-D3, Surface roughness, Urea formaldehyde, Wettability, Science and technology*

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Needs Assessment and Co-creation of Policy Recommendations for DOST-CEST

Program Sites: Philippines' Transdisciplinary Approach

Malenab, Ma. Charisma T. , Calara, Alvaro N. , Bernardez, Miciah P. , Sarmiento, Angelika M. , Muros, Maria Shiela M. , Cabauatan, Daniel Joy C. , Torio, Diana A. , Marcelino, Rocky T. , Visco, Emilia S. , Mendoza, Maria Emilinda T. , Amparo, Jennifer Marie S. , Consignado, Gillian D. , Dangcalan, Ron Jay P. , Geges, Dhino B. , Dapito, Marife B., Ang-Bon, Rita Mae C. , Piñon, Carolin

Local development is multi-faceted, which precipitates the need for transdisciplinary approaches to capture the complexity of issues and possible solutions to development challenges. Six program sites in two provinces located in Southern Luzon, Philippines under the Department of Science and Technology Community Empowerment through Science and Technology (DOST-CEST) program were studied to determine possible science and technology interventions to accelerate local development. The study used a concurrent mixed-method research design where the qualitative and quantitative data are collected during the same stage. Focus group discussions and key informant interviews were conducted to represent local government and sectoral groups. Secondary data – which includes barangay and municipal profiles and local government unit (LGU) data on social services – were collected, and a survey was used to gather information on the needs of the community members. The existing needs include access to healthcare, health facilities, and services, improved access to potable water sources, compliance with solid waste management, educational assistance, sustainable livelihood opportunities, and equipment for better disaster preparedness and response. Theoretical reflections using transdisciplinary approaches such as human ecology and social technology assisted in local development planning and policy recommendations where data and synthesis generated the need for a convergence approach, integrative research, community organizing, and partnerships with higher education institutions. Specific recommendations would include improving the quality of the KALINGA mix for health and nutrition, provision of ceramic water filters for water and sanitation, STARBOOKS (Science and Technology Academic and Research-Based Openly Operated Kiosk Station) units, which are like science library-on-the-go kiosks for basic education, and incorporating technologies like an automated rain gauge, flood early warning station, and water level monitoring station in the current disaster risk response and management. Prioritization of interventions should be matched with the resources and capacities of both DOST and LGUs. **(Author's abstract)**

Keywords: *Community empowerment, Human ecology, Local development, Needs assessment, Policy recommendations, Social technology, Transdisciplinary, Science and technology*

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QR-store Online: Development of a Web Application with Quick Response (QR) Technology for Small-scale Businesses

Paglinawan, Alyssa Marie M. , Paglinawan, Johnrel M. , Sarucam, Jae-An V. , Otto, John Vi

This study aimed to design and to develop a web application for small-scale businesses serving as a virtual store interface with access to all enrolled stores providing their customers the services to check the store and product availability and choose items to purchase. This study would not only help consumers and store owners conveniently do buying and selling but also help in limiting the time spent for face-to-face interaction which is very important in mitigating the spread of any virus such as COVID-19. The web application will be responsive and available on mobile phones for easier access. It also has integrated Quick Response (QR) Code technology

which was used to provide a reference code to customers. The system was developed using Agile development model, a conceptual framework for undertaking software engineering. Bootstrap Framework was also used in designing the application's user interface to easily achieve responsive user interface (UI) maintaining ease of use and functionality in various mobile and desktop views. Prior to development, a qualitative interview with the consumers and store owners regarding the traditional shopping processes was conducted to determine system requirements. Processes were observed, documented, and evaluated to serve as basis for system design and development. Furthermore, a usability survey was conducted to know the perception of the users in terms of usefulness, satisfaction, and ease of use/learning the web application. By closely observing the current processes of buying and selling, a more efficient and convenient system was successfully developed and tested and based on the survey result, the developed web application was useful and easy to use, and users were satisfied with the application. The paper will also provide the information of the processes involved during the development of the application and will present the system design and overall functionality of the system. **(Author's abstract)**

Keywords: *Science and technology, Web Application, Local Store, Small-scale Businesses, Quick Response (QR) Technology, Online Shopping*

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NP

0408

Sustainable Development Goal Target Interactions in the Philippines: a Two-Method Approach

Rivera, Roselle Leah K. , Soria, Spencer C. , Bongolan, Vena

In 2015, the United Nations adopted 17 Sustainable Development Goals (SDGs) with 169 targets for transformation toward a more sustainable future by 2030. Around the world, countries struggle with their implementation, deciding priorities, and wonder about the “consistency” of these goals and targets. This study seeks to evaluate and analyze SDG target interactions in the Philippines to determine resolution measures for conflicting targets, and prioritization for reinforcing targets. The problem is modeled as a graph with 169 nodes (targets) and 14,196 edges (target interactions). Two methods are employed. First, experts were asked to evaluate interactions using a 7-point scale. It then becomes an “edge-coloring” problem for the graph. Second, a non-parametric Spearman rank correlation is used on official indicator data with resulting coefficients serving as interaction scores. The graph is similarly colored depending on the correlations. Scores are then interpreted to mean that target pairs interact positively (synergies), negatively (trade-offs), or neutrally (non-classified). Edge colorings are at sdg-interactions.herokuapp.com. Results from both methods were synthesized to formulate recommendations – most notably, negative interactions involving targets 3.1 (“Reduce maternal mortality”), 3.6 (“Reduce road injuries and deaths”), and 3.7 (“Universal access to sexual and reproductive care, family planning, and education”). Negative interactions/ trade-offs should be carefully studied and resolved for better implementation efficiency. Targets that reinforce each other should be prioritized (subject to country objectives) – including 1.1 (“Eradicate extreme poverty”), 1.2 (“Reduce poverty by at least 50%”), 4.2 (“Equal access to quality pre-primary education”), 4.B (“Expand higher education scholarships for developing countries”), 6.2 (“End open defecation and provide access to sanitation and hygiene”), 6.6 (“Protect and restore water-related ecosystems”), 8.1 (“Sustainable economic growth”), 8.5 (“Full employment and decent work with equal pay”), 9.4 (“Upgrade all industries and infrastructures for sustainability”), and 9.5 (“Enhance research and upgrade industrial technologies”). Both methods are hampered by data collection. Efforts to recruit respondents and make the website more “intuitive” are continuing. The method of UN Indicators might be improved since, currently, the mapping of indicators to targets, as well as the weighting of indicators for their effects on targets are “global” – that is, there is only one mapping and one weighting system for all countries, and this has been questioned, pointing to possible localization in the future. **(Author's abstract)**

Keywords: *Sustainable Development Goals, SDG, SDG interactions, SDG targets, SDG Philippines, Science and technology*

SOCIAL SCIENCES

0409

An Analysis of the Key Influencers of Nerian Happiness

Prado, Jonathan Clave , Gaddi, Zarren

The study aims to provide an objective view of 'Nerian Happiness'. 'Nerian' is the moniker for the students of SFNCS in the Philippines. The research focused on the factors influencing Nerian Happiness and the direction of the factors tested as key influencers of happiness in the San Felipe Neri Catholic School (SFNCS). Methodologically, this study provided key functions in using Data Modelling through PowerBI - Microsoft-powered data analyzer and data modeler which enables the researcher to dig deeper into the analysis of the study. Utilizing a researcher-made questionnaire that was validated using the Cronbach alpha test, the researchers were able to elicit quantitative responses concerning the extent of Nerian Happiness toward their teachers and the school. The study also looked at the perspective where the school can be recommended to prospective clients or stakeholders. The results of the study revealed the varying degrees of happiness among students in different grade levels that show a statistically significant association between the students' desire to continue to study in SFNCS next school year, and their willingness to recommend the school to prospective clients and stakeholders. The results of the study will be utilized to enhance the programs of the Marketing and Promotions Department, and boost school enrollment. (**Author's abstract**)

Keywords: *Educational research, Power BI, School promotions, Happiness, Satisfaction, Social sciences*

0410

So Close Yet So Far: Social Cohesion Effects of Altered Catholic After-death Rituals during the COVID-19 Pandemic

Oracion, Enrique G. , Albina, Alb

The death of a loved one is one of those significant life events when social cohesion is desperately needed to ameliorate the pain and grief. However, social cohesion in times of pain and grief has been frustratingly disrupted by the COVID-19 pandemic because of physical distancing, border closures, travel restrictions, and other similar measures. This present study aimed to investigate the effects on the social cohesion of altered Catholic after-death rituals as a result of the state-imposed restrictions to contain the COVID-19 pandemic in the Philippines. Employing interpretive phenomenology to capture the lived experiences of bereaved individuals, 48 participants across the capital cities of the Central Visayas region agreed to participate in in-depth interviews. Digitally recorded interviews were thematically analyzed to generate the themes and subthemes. Three themes emerged as results of reshaped after-death rituals: physically disconnected community members, socially isolated and stigmatized mourners, and loss of autonomy due to state-imposed restrictions. Social cohesion regarding the expression of reverence for the dead person and condolence to the bereaved, along with the performance of after-death rituals, are significantly challenged and weakened by the state-imposed restrictions during the COVID-19 pandemic. However, the ability of the social actors (individuals, community, and institutions) to find alternative ways to salvage social cohesion was observed. Specifically, some participants were quick to transition to

technology- mediated communication and virtual after-death rituals to mitigate the unpleasant effects of the restrictions. **(Author's abstract)**

Keywords: *Social cohesion, After-death rituals, Physical distancing, Mourning in isolation, Stigma, Medicalized death, Technology-mediated rituals, Social sciences*

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0411

A Comparative Study of Digital Transformation among The Emerging Economies in Asia and Africa during 2001-2020

Pawar, Puja

The purpose of this paper is to undertake comparative analysis examining the amount of digital transformation that took place in the selected Asian and African countries during 2001-2020. The study chose 10 emerging economies, from Asia and Africa, namely, Egypt, Libya, Algeria, Sudan, Morocco, Pakistan, China, Japan, India, Indonesia. The sample countries selected showed major impact of digital transformation in their regions. The study emphasizes on analyzing qualitative data using scientific literature and quantitative data were examined using simple Microsoft Excel program. Pivot tables were used to summarize the calculations. The average, maximum and minimum values were calculated for all selected countries in both continents to avoid data confusion, and then the maximum value and the minimum value were calculated for each variable to show the data more clearly. The study found that all the chosen variables, the number of internet users and the percentage of rural and urban population were affected by digital transformation, resulting in shift of people from rural to urban areas for better digital access and infrastructure, but it majorly affected some poor African countries as compared to Asian countries. As a matter of fact, the governments in these countries must focus in their policies on investments to develop more digital infrastructure in all the regions of the country and not just in the developed cities or urban regions. This is important to curb migration of people for digital access. Thereby creating imbalances in the rural urban population and widening digital gap. **(Author's abstract)**

Keywords: *Social sciences, Digital transformation, Infrastructure, Emerging economies, Digital gap*

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(Filipiniana Analytics)
NP

0412

The correlation of population, population density, age, and sex to the number of confirmed cases of COVID-19 among local government units in the National Capital Region

Yee, Ally Norr G. , Yap, Krista Mari P. , Yañga, Victor Antonio F. , Wee, Kimberly Anne D. , Villareal, Geneve S. , Villanueva, Crizelle Keith G. , Villanueva, Cristina P. , Vigo, Estrella Natalia O. , Ventura, Nina Patricia S. , Velasquez, Alixson M. , Vedan, Ron Carlo C., Zambrano, III, Dan H. , Zantua, Rik James S. , Sison, Jr., Leopold

Introduction The NCR had amassed 752,668 cases of COVID-19 as of September 2021, the highest among the regions in the Philippines. This study aimed to determine the correlation between population, population density,

age, and sex with the number of cases among local government units (LGU) in the National Capital Region (NCR).

Methods The data for population, population density, age, and sex distribution of the LGUs of NCR were retrieved from the 2015 Philippine census while the data for cases were from DOH's COVID-19 Tracker. Pearson correlation coefficient was computed to determine the correlation between population, population density and cases. Phi and Cramer's V statistic were computed to determine associations between sex, age groups, and cases.

Results There was little or no correlation between population density and number of cases ($r = 0.236$) but was good ($r = 0.905$) when Quezon City was excluded for being an outlier. There was good correlation between population and number of cases ($r = 0.964$, $p < 0.001$). There was very weak to no association between sex and number of COVID-19 cases. There was a statistically significant moderate association between age and COVID-19 cases ($f = 0.145$, $p < 0.001$).

Conclusion The study has shown that population density and population have a good correlation with the number of COVID-19 after Quezon City was removed as a data point. There is a moderate association between age and number of COVID-19 cases. There is a very weak to no association between sex and COVID-19 cases. (**Author's abstract**)

Keywords: *COVID-19, Population density, Correlational study, Social sciences*

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NP

0413

Cyclicity of Moves in the Introduction Section of Research Articles Written by Filipino Academic Writers in Applied Linguistics

Dumas, Alvin, Morales, Rodr

The scientific and practical contributions of published research articles have benefited researchers with similar interests in a particular field in progressing knowledge and its application. It is deemed that the dissemination and publication of research findings to reach the widest audience are the responsibilities of a researcher. Apart from these, publication creates an avenue where findings can be critically evaluated, supported, challenged, or even refuted which builds active participation between and among the members of the discourse community. Moreover, novice writers also refer to published articles for modeling and reference as they author their research articles. However, novice writers who aspire to publish their research works must be equipped with rhetorical strategies to meet the standards of academic scholars and reviewers for acceptance and publication. Acceptance of research articles can also be attributed to the way writers develop the structure of the introduction section of their research articles for it requires effective persuasion skills in providing the rationale of their study. This study, therefore, aimed at analyzing the rhetorical features of 30 research articles' introduction sections (RAIs) published in Applied Linguistics journals selected under similar contextual conditions. The "Creating a Research Space" (CARS) model for analyzing the discourse features at the sentence level was employed. The results of the study revealed that Moves 1, 2, and 3 are obligatory and the steps in realizing the moves do not follow a linear pattern but are interwoven. This study captured a basic representation of the rhetorical organization preferred by the writers in structuring their RAIs. This provision would give Filipino academic writers a wide range of discourse preferences in structuring the introduction section of their research articles to meet the required standards for acceptance and publication. Pedagogical implications were provided for future research directions. (**Author's abstract**)

Keywords: *Rhetorical structure, Cyclicity of moves, Introduction section, Research articles, Filipino academic writers, Applied linguistics, Social sciences*

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2022,

An Ethnolinguistic Vitality Study of the *Hanunoo Mangyan* Language *Ilaol, Joel, Jabar, Melvin, Lucas, Rochelle Irene, Collado, Zal*

The ethnolinguistic vitality of the *Hanunoo Mangyan* language in Oriental Mindoro, Philippines was examined. This study argues that cultural identity and social interaction can either make or brake language use. This means that individuals with strong identity affiliation will likely have higher minority language literacy. However, social interaction outside the community will somehow impact language use and even identity pride. Results of the survey indicate that the *Hanunoo Mangyan* language is still safe as it is still widely spoken in the communities. The language serves as a source of identity and a sence of pride, which primarily is the driving force for the language to survive. Although, one must not discount the fact that the communities in the study are gearing towards multilingual parity as their members make use of several languages in different social encounters. This clearly poses language attrition when language preservation is not given a priority. **(Author's abstract)**

Keywords: *Surat Mangyan, Hanunoo Mangyan, Mangyan, Ethnolinguistic Vitality, Language Preservation, Social sciences*

An Exploration of the Sustainability of Selected Private Schools during the COVID-19 Pandemic *Borines, Marissa, Sarao, Gracia Dg, Gonzaga-Trinidad, Rona Maye, Crudo-Capili, Maria Antonia, Santiago, Sh*

The COVID-19 pandemic resulted in the closure of schools; however, some remained operational. The objective of this research was to determine how private HEIs were able to sustain their operation at the height of the COVID-19 pandemic. Using a Multiple Case Study design, 17 administrators, 8 faculty members, and 4 non-teaching personnel from three schools that remained operational during the pandemic were purposively selected based on their knowledge of the operation of their schools as well as their availability at the time of the study which was June to August of 2021. The key informants were interviewed, and their responses were organized using Microsoft Excel. Using thematic analysis, the study revealed the following strategies schools employed to sustain their operation: retained and provided support to their personnel; implemented cost containment measures; instituted flexible working arrangement; adapted the mode of instructions and delivery of services according to students' need; employed flexible learning strategies; implemented virtual classes; provided spiritual and psychological support; maintained physical and digital environments; called for administrators and personnel to be responsive to the COVID-19 situation and built stronger relationship amongst the different people of the schools. The study also pointed out that perceptive administrators, faculty, and staff who were ready to embrace change are critical elements to the survival of schools. The study concludes that to survive, schools should look beyond the attainment of excellence and exercise empathy and come up with innovative strategies to attract students. **(Author's abstract)**

Keywords: *Higher Education Institutions, Private schools sustainability, COVID-19, Social sciences*

Level of Challenges and Coping Mechanism of College of Education Stakeholders on Modular Learning, Lagon,

The study titled “Level of Challenges and Coping Mechanism of College of Education Stakeholders on Modular Learning” was conducted in the College of Education of Capiz State University Burias Campus during the school year 2020-2021. More specifically, it aimed to answer the following questions: (1) What are the level of challenges encountered in the implementation of modular learning as a whole when grouped according to: students, parents, and faculty? (2) What are the level of coping mechanism in the implementation of modular learning as a whole when grouped according to: students, parents, and faculty? (3) Is there significant relationship between challenges and coping mechanism? The study employed the descriptive – correlational research design. The data were gathered by the researcher using a researcher-made questionnaire for challenges and adapted questionnaire for coping mechanism. The respondents were randomly chosen through simple random sampling technique. The results of the study revealed that the College of Education students of Capiz State University Burias Campus were mostly female, reside in barangay and without internet connectivity. The parent – respondents were high school graduate, with family income of PHP10,000 and below, and unemployed. The faculty–respondents were mostly instructor I and had a length of service between 1 – 10 years. The level of challenges encountered by the students, parents, and faculty in the implementation of modular learning was moderately challenged as a whole. The level of coping mechanism encountered by the students, parents, and faculty in the implementation of modular learning was strongly coping as a whole. The challenges and coping mechanism of the student - respondents in the implementation of modular learning was significantly related. However, the challenges and coping mechanism of parents and faculty were not significantly related. **(Author's abstract)**

Keywords: *Distance learning, Instructional quality, Internet connectivity, Springboard, Technical quality, Social sciences*

The lived experience of UERMMMCI student nurses: The untold stories of home confinement during the first 3 months of COVID-19 lockdown

Millares, Iyanla Jireh V. , Manatlaog, Michal Irijah T. , Lubao, Jasmin Claire I. , Garcia, Ellysa Rei N. , Chang, Mark Joseph V. , Baclig, Kyrah Aaliya B., Agustin, Flory Ma

Introduction The COVID-19 pandemic has forced countries to impose lockdowns. The aim of the study was to explore lived experiences of student nurses during their home confinement and acquire the shared meaning of the phenomenon among the participants. In this study, the researchers explored the impact of home confinement on student nurses to gain a thorough understanding of their perceived experiences, including their personal feelings, responses to the pandemic and learnings.

Methods The researchers used a descriptive phenomenological approach, wherein student nurses from all levels were selected through purposive sampling and were interviewed one on one through Zoom using a semi-structured

open-ended questionnaire. The researchers utilized Colaizzi's method of analysis to extract their lived experiences during their home confinement during the first three months of COVID-19 lockdown.

Results The results resulted in eight themes: Delighted, Attitude Towards the Disease, Home Isolation, Situational Awareness, Stronger Connection, Adaptation to Change, Role Function, Psychological Development and Outlook.

Conclusion Based on Sister Callista Roy's Adaptation Model Theory, there is a direct relationship between the stimuli, coping and behavior of the participants. (**Author's abstract**)

Keywords: *Long term home confinement,, COVID-19 pandemic, New normal, Social sciences*

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(Filipiniana Analytics)
NP

0418

The lived experiences of stay-in nurses and nursing aides in a private hospital in Quezon City during the coronavirus pandemic

Utana, Mary Bernadine C. , Padua, Markell Daniel E. , Losbañes, Sean Melnor P. , De Guzman, Angelica Janina M. , Manuel, Helen Grace D., Glinoga, Mildre

Introduction The COVID-19 pandemic caused traumatic events among health care workers. They are the ones who are exposed to the virus as frontliners. The study aimed to explore the experiences and impact of the pandemic on the physical, psychological and emotional aspects of both nurses and nursing aides.

Methods This was a qualitative interpretative phenomenological study, focused on describing the individual nurse's and nursing aide's lived experiences as stay-in personnel in a private hospital in Quezon City catering to COVID-19 patients. Participants were selected by purposive sampling. They were interviewed using a semi-structured questionnaire on how the pandemic affected their physical, psychological and emotional well-being. The qualitative data collected was coded and categorized according to themes that described their lived experiences.

Results The three themes derived were: impact of a pandemic, strategies and coping, and psychological outcome for the three interview questions. Impact of a pandemic included isolation from the family (loneliness/sadness and lack of family interaction) and adequate preparation for a pandemic (preparation for COVID-19, pandemic restrictions, health protocol compliance). Strategies and coping included comfort and convenience (living conditions, independent living), adapting to new normal (coping mechanisms, strategies; exploration), and family safety. Psychological outcome included the emotional impact (fear, anxiety).

Conclusion The nurses and nursing aides had both negative and positive experiences, with different outcomes depending on the participant. Most of the experiences were positive, thus the investigators concluded that a change in the participants' current lives has led to a voluntary decision to be separated from their loved ones while still being happy and content because of the assurance that their families were safe at home. (**Author's abstract**)

Keywords: *COVID-19, Lived experiences of stay-in nurses and nursing aides, Social sciences*

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Narratives of Kalagan Women on Life's Challenging Journey and Aspirations

Tudy, Ida G. , Tudy, Ra

Indigenous people, such as the Kalagan, have their own stories, including how they struggle in society being members of a minority group. This study aims to describe, in retrospect, life's challenging journey and the aspirations of Kalagan women in Hagonoy, Davao del Sur. It employed a descriptive phenomenological qualitative design. Twelve Kalagan women willingly participated in the focus group discussions (FGDs). The findings reveal that poverty, naivete, and discrimination are their life's challenges. As regards their aspirations for their tribe, two themes emerged: they long to be accorded respect by other people, and they are concerned with their children's academic and professional success. The challenges they have experienced have driven them to strive harder and motivated them to educate their children to improve their life situation. Moreover, their life's challenging journey has also called upon the local government and other relevant government agencies to look deeper into the needs of the Kalagan and provide faster, more efficient, and quality basic services. **(Author's abstract)**

Keywords: *Social science, Indigenous people, Kalagan, Narratives, Phenomenology, Philippines, Social sciences*

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Reclaiming the Narrative: Online Discourses of Post-pandemic Futures

Santiago, Jose Francisco , Labor, Paul Danielle , Maturan, Princess Lovella , Ong, Michelle G. , Aguirre, Alwin C., Quiñones, Diwa Malaya , Gastardo-Conaco, Ma. Cec

The profound changes in our lives and understanding of the world because of the COVID-19 health crisis have greatly affected both our personal and social well-being. In addition, the narrow way by which dominant structures have controlled the meanings we can make of this global concern tended to result in totalitarian, punitive but ultimately ineffective measures. The study is focused on mapping out the various ideas and sentiments of Filipinos regarding post pandemic scenarios and possibilities by tracing discourses of post-pandemic futures circulated via online content and platforms. Qualitative, discursive, and exploratory in approach, different data sets from different online platforms were gathered, initially analyzed for word salience, and finally thematically unpacked with attention to discourse. Mainly, the topics of "health," "economy," "governance," and "people" formed the most prominent thematic threads resulting from the initial word frequency analysis. However, upon closer reading of the data sets, the study contends that imagining a healthier and more inclusive post-pandemic future for the country rests on the principles of integration, complexity, and revaluing of human life and welfare. Results of the study are hoped to inform policies and programs that aim to create a more just and robust future for Filipinos beyond the confines of the present pandemic. **(Author's abstract)**

Keywords: *COVID-19, Post-pandemic future, Online discourse, Human life and welfare, Social sciences*

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Sense of Agency (SoA) in Human-Humanoid Technology (HT) Interactions in Flexible Face-to-Face Learning during Challenging Times: A Multimethod Research

Olazo, Reynaldo , Tecson, Jr., Armando , Basilio, Wilfredo , Leuterio, Ernesto , Salazar, Ramonita , Catajan, Michael William , Dino, Michael Joseph, Uayan, Ma. Luisa , Enriquez, Caroline Maria

As technological advancement in higher education mainstreams humanoid technologies (HTs) in clinical simulations in medicine and allied health programs, the sense of agency (SoA) involved in human-computer interaction and associated experiences with HT use must be investigated. This study aims to develop and pilot a self-report measure of SoA and explore its connection with the demographic, behavioral intention for technology use, and performance variables among learners (n=456) in a flexible face-to-face learning program during the pandemic. A mixed- method exploratory sequential design was employed, beginning with empirical measurements and analyses (descriptive, comparative, modeling) followed by a qualitative descriptive inquiry via focus group discussions to capture student experiences and practical reasoning associated with HTs and other flexible learning activities. Quantitative results revealed an acceptable tool, demographic and performance differences in SoA measures, and a parsimonious model of SoA and related variables. Qualitative inquiry produces a model eidetic of student experiences and practical reasoning. This project reinforces a shift from technology- centered and human-centered design to a life-centered approach to technology and simulation development. **(Author's abstract)**

Keywords: *Humanoid technologies, Human-computer interaction, Sense of agency, Behavioral intention, Flexible learning, Structural equation modeling, Social sciences*

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NP

0422

Spatial Analysis of Poverty Incidence and Road Networks in Eastern Visayas Region, Philippines

Atibagos-Nacion, Nelda , Pantolla, Her

Poverty is a prevailing challenge in the Philippines. Through the small area estimation (SAE) of the Philippine Statistics Authority, the poor cities and municipalities with poor households were identified. Some locations are also vulnerable to natural calamities and have limited resources. The 2018 SAE shows that the region of Eastern Visayas is one of the poorest in the country. Moreover, the region is vulnerable to natural hazards, particularly typhoons. The regional road network is also less connected for the poorer municipalities. Hence, slow economic growth is a concerted outcome. To provide an evidence-based framework on potentially optimized resource allocation of, say, government institutions and humanitarian organizations in countering these poverty concerns exacerbated by natural calamities, this paper used the geographical information system (GIS) for easier visualization and interpretability. Spatial analyses were also applied to [1] determine if clusters of poverty exist in the region across different periods and [2] if hot spots of poverty incidence exist in the latest SAE. The findings reveal that poverty incidence for all four previous periods of SAE has significant non-random clusters. In addition, poverty hot spots, at varying confidence levels, were statistically identified. These hot spots are also vulnerable to frequent typhoons and have limited access to national roads. Additionally, the bootstrap regression shows that economic growth could be boosted by expanding road networks as an indicator of decreased poverty incidence. This study, thus, further emphasizes the importance of data-driven decision-making, particularly in efforts to counter poverty, including some of its aggravating external factors such as natural calamities. The application of empirical methods in formulating and improving policies, especially those related to infrastructure investments and expansions, is also recommended, given the limited resources. It also highlights how road networks in the region could be instrumental in promoting economic progress, particularly in less accessible areas. **(Author's abstract)**

Keywords: *Geographical information system, Eastern Visayas, Poverty incidence, Road networks, Spatial analysis, Social sciences*

The Stories of Filipino Pregnant Teenagers and Teenage Mothers during the COVID-19 Pandemic

Nelson, Gloria Luz M., Gonzales, Mari Juni Paulette

The study aims to tell the meanings of the stories of the Filipino pregnant teens and teen mothers during the COVID-19 pandemic. The teens in the study were selected using convenient and snowball sampling methods. They were interviewed using screen-mediated, in-depth interviews, where 28% of the participants were pregnant, 61% were mothers and 11% were pregnant and also mothers. Based on their relationship and currently living with their own parents. More than half of 61% of the teens are in consensual union with their partners and staying either with the teen's family or partner's family while there are two who are married and living with their respective spouses. Using thematic analysis, the resulting themes that emerged from their stories are as follows: First, the teen mothers face multiple burdens because they lacked both the financial capability and emotional support. Early pregnancy is a health risk for the mother and the child. Second, pregnant teens and teen mothers also involuntarily drop out from school due to unplanned pregnancy. Third, an unplanned pregnancy, however, does not mean an unwanted pregnancy. Fourth, being pregnant and a mother during a pandemic brings about longingness for their friends and relatives. Fifth, the majority of the youth find their children to be a blessing and the source of inspiration for them to strive for a better life. Teen pregnancy, just like pandemic, is a global phenomenon. Institutionalized and implementation of current policies and programs is recommended to address the prevention, support, and care for teen pregnancy. (Author's abstract)

Keywords: *COVID-19 pandemic, Filipino pregnant teens, Filipino teen mothers, Thematic and narrative analyses, Social sciences*

Students' Acceptance of Nuclear Power in the Philippines

Santos, John Vincent L

Nuclear power as a source of energy remains a contentious technology issue that divides public opinion and acceptance, particularly in developing nations that lack an operational nuclear power plant. Students, being the future decision-makers and having a vital role in society's progress, make their acceptance of nuclear energy symbolize public opinion to a large extent. Incorporating the Theory of Planned Behavior (TPB) and the Protection Motivation Theory (PMT) helped identify the factors influencing students' acceptance of nuclear power. Utilizing a descriptive correlational research design highlighted the relationships between the model elements: nuclear power knowledge, nuclear power stigmatization, trust in government, perceived benefits, perceived drawbacks, attitude, subjective norm, perceived behavioral control, intention, and nuclear power acceptance. Of the 19 hypothesized relationships, 14 are regarded as directly and significantly influential. The findings suggest that knowledge of nuclear technology can promote students' acceptance of nuclear power in the Philippines and that this acceptance can be further reinforced by the ease of the perceived acceptance, favorable attitude towards the adoption of nuclear power plants, and perceived positive social influence of other people. However, stigmatized

information adversely influences their adoption through the negative perception and disadvantages of nuclear power plants. Thus, the inclusion of their benefits and risks in currently taught science and technology subjects in senior high school and college may improve the students' knowledge and understanding of nuclear power and nuclear energy and provide a platform for scientific literacy of the various potential energy sources to resolve the energy crisis in the Philippines. **(Author's abstract)**

Keywords: *Nuclear knowledge, Nuclear stigma, Nuclear energy adoption, Nuclear power acceptance, Social sciences*

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STATISTICS

0425

Detection of Outliers in Univariate Circular Data Using New Cut-off Points for the Circular Distance

Srisodaphol, Wuttichai, Papukdee, Nipada, Rattanawong, Be

The aim of this study is to propose two new cut-off points for outlier detection in univariate circular data using the concept of circular distance. The first cut-off point involves using a quantile of the gamma distribution based on adjusted circular distances, whereas the second cut-off point employs the upper fence of a modified boxplot for skewed data. Simulation studies are conducted using both uncontaminated and contaminated data, and the performance of the proposed cut-off points is evaluated in the proportion of outliers, probability of all outliers being successfully detected, probability of outliers being falsely detected as inliers (masking effect), and probability of inliers detected as outliers (swamping effect). Real data examples are also used to demonstrate the efficacy of the proposed cut-off points. The results of the simulation and real data experiments show that the proposed cut-off point involves using a quantile of the gamma distribution based on adjusted circular distances and is successful in outlier detection compared to the existing cut-off points. **(Author's abstract)**

Keywords: *Circular data, Circular distance, Outliers, Statistics*

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VETERINARY MEDICINE

0426

Comparison of Skin Wound Healing Closed with Intradermal Suture Pattern using Monofilament Poliglecaprone and Multifilament Polyglactin Sutures in Domestic Cats

Torres, Eduardo B., Reyes, Marco F., Matawaran, Veronic

To compare the skin wound healing using monofilament poliglecaprone and multifilament polyglactin sutures, this study was conducted. Twelve apparently healthy, adult, intact female cats were equally divided into three groups (7, 14 and 21 days post-surgery). Two full thickness midventral abdominal incision wounds were made and sutured. Macroscopically, wounds closed with monofilament showed significantly greater scab formation (7

and 14 days), hyperemia 9day 0) and elevation (0 and 7 days). Scar formation was significantly greater in multifilament (day 21). None of the wounds observed showed discharged and dehiscence. Microscopically, wounds closed multifilament were significantly invaginated and thicker (14 and 21 days). The wound gap was only observed on day 7 while angiogenesis was consistent for the duration of the study. Neutrophils and fibroblasts were significantly greater in wounds closed with multifilament. Most of the wound had light bacterial growth and none had heavy growth. The most common isolate was coagulase negative *Staphylococcus* spp. Single isolates were more common in wound closed with monofilaments. The mean tensile strength of multifilament polyglactin was not significantly higher than the monofilament poliglecaprone. **(Author's abstract)**

Keywords: Skin wound healing, Domestic cats, Intradermal suture, Monofilament poliglecaprone, Multifilament polyglactin, Veterinary medicine

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ZOOLOGY

0427

Analysis of Digestive Enzymes Concentration in Gut of Juvenile and Adult Group of *Notopterus notopterus* (Notopteridae; Osteoglossiformes)

Naeem, Muhammad, Ahmad,

Analyzing digestive enzyme concentration in the gut is important to know about the digestive physiology of fish. Therefore, we determined concentrations of protease, lipase, and amylase enzyme in gut extracts of juvenile and adult groups of *Notopterus notopterus* relative to total body length (TBL), body weight (W), gut length (GL), relative gut length (RGL), Zihler's index (ZI) and condition factor (K). A total of 60 *N. notopterus* specimens (30 juvenile and 30 adult) were collected, the gut of each removed, homogenized, and evaluated for the concentrations of protease, lipase, and amylase. Protease and lipase concentration were observed significantly ($P < 0.01$) correlated with increased TBL, W, and GL in both juvenile and adult groups of *N. notopterus*. Amylase concentration significantly ($P < 0.01$) increases with an increase in TBL, weight, and GL in the juvenile group, whereas amylase concentration significantly ($P < 0.01$) decreases with an increase in TBL, W, and GL in the adult group. K had a significant ($P < 0.01$) positive correlation with protease and lipase concentrations in both juvenile and adult groups, whereas K showed a significant ($P < 0.01$) positive correlation with amylase concentrations in juvenile and significant ($P < 0.01$) negative correlation in the adult group. Protease and lipase concentration were observed significantly ($P < 0.01$) correlated with an increase in ZI in the juvenile and adult groups. Amylase concentration significantly ($P < 0.01$) increases with an increase in ZI in the juvenile group, whereas amylase concentration significantly ($P < 0.01$) decreases with an increase in ZI in the adult group. The concentrations of protease (344.12 U/mg) and lipase (172.49 U/mg) were observed high in juvenile and adult groups, whereas amylase concentration (3.80 U/mg) was found low in the juvenile and adult *N. notopterus* groups. Present study results revealed the digestive physiology and carnivorous behavior of *N. notopterus*. Moreover, information from the present study about digestive enzyme concentration in juvenile and adult species of *N. notopterus* provides valuable information to understand the digestive physiology of carnivorous fishes. **(Author's abstract)**

Keywords: Amylase, Carnivorous fish, Lipase, *Notopterus notopterus*, Protease, Zoology

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