



Abstracts of 8th International Conference on Global Public Health 2023

ISBN 978-1-988652-60-3



Abstracts of 8th International Conference on Global Public Health 2023

Kuala Lumpur, Malaysia

19 - 20 October 2023

Abstracts

2023

**Unique Conferences Canada Publication
Toronto, Canada**



Published by

Unique Conferences Canada

Unique Conferences Canada
18 King Street East - Suite 1400
Toronto Ontario M5C 1C4
Canada

info@uniqueca.com
[http:// www.uniqueca.com](http://www.uniqueca.com)

Published in Canada
October 2023

ISBN 978-1-988652-60-3



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KEYNOTE SPEECH

"The Environmental Impact of Plant Based Diets"

Dr. Klaus Irrgang*

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Faculty of Science, Burman University, Canada*

Environmental data is fast collecting on the unsustainable nature of today's meat-and-dairy-heavy global food consumption patterns. Non-renewable natural resources are getting limited, and environmental deterioration is accelerating. The goal of this paper is to summarize the total influence of a plant-based diet on environmental sustainability and of the qualitative study to investigate university students' knowledge and perception on the issue. In 2018, there were around 850,000 vegans in Canada, according to a 2020 Statista dossier. Furthermore, almost 2.3 million Canadians identified as vegetarians. According to study performed by the Angus Reid Institute (Canada's non-profit independent research organization), nearly one-fifth of Canadians (22 percent), who eat meat on a daily basis would prefer to reduce their meat consumption. According to a poll performed in 2018, British Columbia has the highest percentage of vegetarianism and veganism in Canada, with 8.6% of respondents identifying as vegetarian and 3.9 percent as vegan. In 2004, the World Bank claimed that animal agriculture was responsible for the vast majority of Amazon rainforest deforestation, with cattle ranching taking up 91 percent of the destroyed area. A survey published in science indicated that following a vegan diet could reduce land usage by 76%, greenhouse gas emissions by 49%, and freshwater withdrawals by 19%. Many factors play a role in environmental degradation. One of them being personal lifestyle choices, like diet. However, this paper and study wants in no way detract from the blame that has also to be placed upon the corporate world and its marketing. The qualitative study on Burman University students found that the majority in this study understand the positive health and environmental advantages of a plant-based diet. We speculate that this is because of the setting in Burman University. Burman University's Wellness department educates its students particularly well in regard to the principles of health and nutrition and in other science courses in comparison to public universities who promote and integrate animal-based diets in their curriculums. In contrast, some subjects from other departments did not know the exact benefits of eating a plant-based diet, pointing to a need in education on the subject.

*Research Partner - *Donna Macam, Burman University, Canada*

KEYNOTE SPEECH

**The Interconnectedness of Mental Health and Sustainable Development:
Illness or Prevention Model**

Paul Illingworth

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De Montfort University, Leicester, England*

Wait until people are ill, then treat. Or prevent ill health before it happens. These are two ends of a spectrum, those working health care have argued about for years. This is a fundamental challenge for global health. The illness then treat approach has dominated, certainly Western health care. It is the approach most often championed by the World Health Organisation (WHO), United Nations (UN), associated organisations and Governments. But is it what we should be continuing to do? Is it the global universal health model it has been made out to be?

This paper explores whether the illness model is sustainable (and affordable) for health care. We have all probably heard the phrase 'prevention is better than cure', the phrase attributed to the philosopher Erasmus in the 16th Century. It is often cited as a central principle of modern health care. If that is the case, why is western health care, disease/illness driven? Why have hospitals, their specialisms and spiralling costs been the focus and prevention the poor relation?

Can global health care remain sustainable and affordable? Given the massively rising costs of medical care and medicines. Given the evidence that major events such as Covid-19 had a massive impact on the global economy. Given Climate Change is and will continue to significantly cause further disease, illness and ill health. Is it now time (or even too late) to make a change? A change that means we are less dependent on expensive treatments and an illness model. This paper looks at this through a mental health perspective.

Keywords: *Mental Health, Sustainable Development Goals, wellness/illness*

The Acute Effects of Morning or Evening Green Exercise on Mental Health and Wellness

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Post-COVID-19, young adults have reported higher levels of stress, anxiety, and other forms of mental discomfort. Walking outdoors has been understood to be an effective method to reduce stress and improve well-being. Green exercise, which refers to physical activity in a natural environment, is beneficial and sustainable because it requires no additional equipment and generally produces zero waste. The purpose of this study was to determine the effect of green exercise during morning daytime and evening nighttime on self-esteem, well-being, perceived stress, and connectedness to nature. A convenient sample of 32 undergraduate students (13 male and 19 female) participated in a randomized crossover design study that included a 9–10-minute walk in the morning daytime and evening nighttime. Before and after each walking session, participants completed the Rosenberg Self-Esteem Scale, the WHO-5 Well-Being Index, the Perceived Stress Questionnaire, and the Connectedness to Nature Scale. Using repeated measures ANOVA there was a significant effect of walking trials on all mental health and wellness variables: Self-Esteem ($F(3, 93) = 9.03, p=0.001, \eta^2_p = 0.226$), Well-being ($F(2.28, 70.80) = 6.34, p=0.002, \eta^2_p = 0.170$), Perceived Stress ($F(3, 93) = 5.82, p=0.001, \eta^2_p = 0.158$), and Connectedness to Nature ($F(1.99, 61.74) = 3.29, p=0.044, \eta^2_p = 0.096$). Follow-up post hoc tests revealed that pre- to post-green exercise scores for perceived stress, significantly improved in both the morning ($t(31) = 3.018, p=0.025$) and evening ($t(31) = 3.536, p=0.007$). Only morning pre- to post-test scores significantly improved in well-being ($t(31) = -5.388, p < .001$) and connectedness to nature ($t(31) = -3.42, p = .009$). Evening pre- to post-scores significantly improved in only self-esteem ($t(31) = -2.737, p=0.47$). In general, these results indicate green exercise appears to acutely improve mental health and wellness during morning daytime and/or evening nighttime but may be more influential during morning daytime. Public health officials may use this information to support the promotion of more green exercise opportunities to improve mental health and wellness, especially during a time of increased mental health concerns, post-COVID-19.

Keywords: *environmental psychology, nature, mindfulness*

Copper Exposure to the Malimongan Goldsmith Community, Makassar, Indonesia: An Environmental Health Risk Assessment

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Introduction: The Malimongan goldsmith plays a significant role in Makassar's economy and cultural customs related to gold jewellery. As an established community, Malimongan uses copper as an alloy without formal regulations. This practice is based mainly on the goldsmiths' local knowledge about handling chemicals. Therefore, this study uses the Environmental Health Reach Assessment (EHRA) approach to understand copper exposure in the goldsmith community.

Methodology: This study is a cross-sectional study using the EHRA approach. Thirty goldsmiths and thirty family members of the Malimongan goldsmith community were recruited. The concentration of copper (Cu) in hair for both cohorts was analysed with Inductively Coupled Plasma Mass Spectrometry (ICP-MS) in the Makassar Centre Laboratory of Health (BBLK Makassar).

Result and Discussion: All goldsmiths are male, and 90% of the family members who joined the study are female (wife). Education level results show 46.7% of goldsmiths and 76.7% of the family members only graduated from elementary school. Most goldsmiths were older than 57 years, while the age of family members ranged from 28 to 38 years. Moreover, most of the respondents for both cohorts weighted over 57 kg. The highest hair Cu concentration was 427.99 mg/kg for goldsmiths and 101.88 mg/kg for relatives. This shows the average concentration in goldsmiths was double that of the family members. Compared to other studies, the result was significantly higher. In addition, based on the EHRA approach, all respondents were at risk with 100% $RQ > 1$. The EHRA approach considers several factors for the RQ calculation, such as exposure length, exposure duration, and the reference dose.

Conclusion: Malimongan goldsmiths and their families are exposed to high copper levels during jewellery production, surpassing other studies and indicating health risks (100% $RQ > 1$). Government intervention is needed to mitigate these risks.

Keywords: *Goldsmith, copper, environmental health risk assessment*

The Inverse Association between Coffee Consumption and Serum Triglyceride Levels among Japanese Adults

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Purpose - Coffee is one of the most commonly consumed beverages in the world. Some studies have shown associations of coffee intake with lower levels of serum triglyceride. However, evidence is limited. Therefore, this cross-sectional study aimed to examine the associations between coffee consumption and serum triglyceride levels among Japanese general population.

Methods - This study recruited Japanese general adults aged 35–79 years from the baseline survey of the Japan Multi-Institutional Collaborative Cohort (J-MICC) Study in Okazaki area between 2007 and 2011. Participants completed a questionnaire regarding lifestyle and medical information and provided a blood sample. Serum triglyceride level was measured. Multivariate linear regression analysis was conducted to evaluate the association between coffee consumption and the natural log-transformed values of triglyceride levels after adjusting for age, Body Mass Index (BMI), physical activity, smoking status, ethanol intakes. The study protocol was approved by the ethics committee of Nagoya City University of Graduate School of Medicine. All participants in this study provided a written informed consent. All statistical analyses were performed using Stata version 14.0 (STATA Corporation, College Station, TX, USA).

Results - In total, 7,300 participants (4,028 men and 3,272 women) were assessed. Geometric means of serum triglyceride levels (first quartile-third quartile) were 105.9 (74-136) mg/dL for men and 81.0 (58-110.5) mg/dL for women. Coffee consumption (ranged 0-10, cups/day) was significantly associated with lower log-transformed values of triglyceride levels after adjusting for age, BMI, physical activity, smoking status, ethanol intakes in both sexes ($\beta = -0.013$, 95%CI: -0.024, -0.0016 for men, $\beta = -0.015$, 95%CI: -0.027, -0.0043 for women).

Conclusion - Coffee consumption was significantly associated with lower serum triglyceride levels among Japanese adults.

Keywords: *coffee, serum triglyceride*

Potential Health Issues due to the Relationship between Authorship Gender and Female Participants in Exercise and Medicine Research

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Females are underrepresented as participants in exercise and medicine research. This can be detrimental to determining female-specific recommendations and guidelines. Female underrepresentation may be related to authorship gender. Furthermore, female underrepresentation may also differ among journal impact factor (IF) tiers. The purpose of this study was to determine if authorship gender related to participants' sex in exercise and medicine research. A secondary aim was to determine if journal IF was related to participants' sex. Articles from the 2020 volumes of the British Journal of Sports Medicine (IF 18.47, 334 articles), the Medicine and Science in Sports and Exercise (IF 6.289, 347 articles), and the International Journal of Exercise Science (IF 1.15, 147 articles) were reviewed. Authorship gender of the first and last authors was determined through photos or pronouns on university websites, LinkedIn, ResearchGate, Google Scholar, and other Google searches. Participants' sex was determined by identifying the sex of participants as reported by the authors in the article. Articles were identified as including "male only," "female only," or "both" as participants. There was a statistically significant association between first author gender and participants' sex ($\chi^2= 45.4$, $p < .001$), as well as last author gender and participants' sex ($\chi^2= 19.7$, $p < .001$). There was also a statistically significant association between journal impact factor and participants' sex ($\chi^2= 18.2$, $p= .001$). An underrepresentation of female participants in exercise and medicine research may be influenced by having more male authors. By recognizing this relationship between authorship gender and participants' sex, strategies can be implemented to increase female representation. For example, male authors can be encouraged to include more "female only" or "both" sex studies. In addition, more females may be supported to become researchers in exercise and medicine. Finally, journals of all tiers, but especially lower tiered journals, can make a call for studies to include more "female only" or "both" sex studies. Without changes to include more female participants in exercise and medicine research, females may experience potential health issues and challenges due to a sex-data gap in specific health guidelines, recommendations, and treatments.

Keywords: *sex-data gap, authorship bias*

Perceptions of Effects of Diet on Mental Health among Young Canadians, a Qualitative Study

Klaus Irrgang and Tracy-Ann Adjei,

Burman University, Canada

The link between nutrition and mental health has become a topic of interest in recent years. The World Health Organization (WHO) states that the burden of mental disorders continues to increase worldwide with negative consequences for health as well as social, human rights and economic impacts. There is also a growing realization of the importance of mental health in achieving the UN sustainable development goals. Healthy eating patterns, such as the Mediterranean diet, are linked with better mental health. Since the research in this area is still in its infancy and results sometimes contradictory, a qualitative study was conducted to explore perceptions of a connection between diet and mental health. Via mostly electronic means, participants of a convenient sample of young Canadians in Alberta were asked about their perceptions through a series of open-ended questions. There were 60 responses to the questionnaire. The majority of respondents said they had been diagnosed with a mental health issue in the past. Most participants saw a correlation between diet and mental health. They also thought that other lifestyle factors like exercise, adequate sleep, relaxation, prayer, nature contact and fresh air, positive relationships as well as medication and therapy should be considered to help with mental health issues. A majority of respondents thought a mostly plant based dietary pattern consisting largely of vegetables, fruits, whole grains, nuts and seeds, as well as legumes would have a positive effect on mental health. Asked about the perceived mechanisms most mentioned that a healthy body would promote a healthy mind. Several respondents thought there was a connection between the gut and the brain. The respondents were quite knowledgeable about the subject and their perceptions largely agree with current research on the subject. The personal perceptions about diet and mental health further underlines the importance and clinical relevance of diet as a preventive factor in mental health and the emerging field of nutritional psychiatry. The subject could have a profound impact on prevention and treatment of mental health on a global scale.

The Relationship between Underweight and Leukopenia in Korean Adults: Based on the 2010 ~ 2019 Korea National Health and Nutrition Examination Survey

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According to Korea National Health and Nutrition Examination Survey, the prevalence of underweight in Korean adults is 3.1% in men and 6.3% in women. In addition, the prevalence of underweight is increasing among adult women aged 20-59 years. It is well established that being underweight is an important risk factor for osteoporosis and has been linked to anemia and infertility. Underweight is also a risk factor for cardiovascular disease and is associated with a higher overall mortality rate compared to a normal weight population. Undernutrition and malnutrition are important issues in the underweight population, and are of socioeconomic importance, especially in young women. The aim of this study is to evaluate the relationship between being underweight and leukopenia in Korean adults and to investigate the nutritional characteristics of the underweight with leukopenia. The subjects were divided into underweight, normal weight, and obesity groups based on body mass index (BMI). Multivariate logistic regression analysis was performed to determine relationships between underweight and leukopenia. Leukopenia was 10.9% in the underweight group, which was significantly higher than 8.0% in the normal weight group and 3.4% in the obese group. A multivariate logistic regression analysis showed the association of leukopenia to underweight group based on normal weight, the odds ratio (1.33, 95% CI 1.09-1.60, P-for trend <0.001) was significantly increased. In the subgroup analysis, leukopenia was significantly increased in the case of underweight women with being insufficient the energy intake. (Odds ratio 1.55, 95% CI 1.04 - 2.30, P=0.032) Leukopenia is associated with the underweight population in Korean adults and can be used as a nutritional indicator.

Keywords: *Underweight, Leukopenia, Nutritional Status, KNHANES*

Dating Violence among Undergraduate Medical Students at a Public University in Mexico City: An Exploratory Study

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Gender-based violence (GBV) and cyber-aggression are growing problems in Mexico, but there is a dearth of information on their associated risks. We aimed to determine the prevalence of dating violence (DV) and cyber-aggression in a public campus and compared students' acceptability of abusive DV based on their sex and sexual orientation. We employed a cross-sectional design to survey 964 first-year medical students attending a public university. We analyzed who found "acceptable" abusive behaviors from a dating partner and carried out descriptive analyses of sample characteristics by sex. We included 633 women and 331 men. Homosexual and bisexual orientation was lower among women (1.5%, 4.8%) vs. men (16.9%, 7.2%). Of women and men, respectively, 64.2% and 35.8% reported having been in a dating relationship. Experiencing abusive behaviors in the year prior to the study was associated with students' level of "acceptability". A total of 43.5% of the students who experienced cyber-aggression did not report any mental health consequences, 32.6% did not seek professional help, and 17.4% reported feeling depressed. Students that accepted emotionally abusive DV behaviors displayed a fourfold risk of experiencing physical abuse. Women and sexual minorities are more at risk of experiencing GBV and DV. More male students reported being victims of cyber-aggression.

Keywords: *dating violence; gender-based violence; Mexico; medical students*

Economic Impact of the Pandemic & the Role and Adequacy of Public Policy Initiatives to Provide Relief: A Case Study of Textile Industry in India, Vietnam, and Bangladesh

Gopal Sekhar

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The Covid-19 pandemic has caused deep distress in economies across the globe by disrupting the demand and supply chains for a prolonged period. The impact on the textile manufacturing sector in Asia has been very severe. First of all, there has been a significant loss of man-hours of work due to complete and partial lockdowns (as the textiles were one of the non-essential sectors of the economy, they were one of the last to resume normal functioning). Secondly, the sector depends greatly on the import of raw materials and caters mainly to the export markets. The stoppage of transnational trade has wreaked havoc in the textile segment. As the textile sector is one of the largest providers of employment, this has brought down the purchasing power of families, further affecting the economy. Post-pandemic, governments of various countries have introduced various economic packages to boost the textile sector. The present study aims to analyze the impact of Covid-19 on the textile sector of India and the relief measures introduced by the Government of India in the form of economic packages to boost the textile sector compared to the textile sectors in Vietnam and Bangladesh. An in-depth study is made using primary data collected from the significant textile hub of South India, the twin cities of Coimbatore and Tiruppur in the state of Tamil Nadu, often dubbed as the Manchester of India. This is supplemented by secondary data in the form of Government, Industry, and Trade reports available in the public domain. Such secondary data is used in respect of Vietnam and Bangladesh as well. This explorative study focuses on the economic impact of a worldwide health emergency and the role and adequacy of mitigating public policy measures.

Keywords: *Covid 19, Textile sector, Public Policy, Workforce*

Enhanced Effectiveness in Blood Pressure Using the Medical Mobile Clinic Approach and Bluetooth Remote Monitoring Devices in Low Resource Areas of the Philippines

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Introduction: ABCs for Global Health (ABCGH) established a Mobile Medical Clinic (MMC) to provide accessible, affordable healthcare to eighteen disadvantaged communities in the Philippines. Lack of access to quality healthcare puts Filipinos at risk for hypertension, diabetes, and high mortality rates. The COVID-19 Pandemic further aggravated the lack of access to healthcare in low resource areas. This project aims to evaluate the success of the MMC and Bluetooth remote monitoring devices in managing blood pressure, assessing participation and retention rates, and educating the communities on lifestyle changes to improve quality of life.

Methods: The MMC did regular monthly visits to each community and providing primary healthcare services which included monitoring of blood pressure of patients using electronic health records (EHR). Communities were chosen based on the 30-kilometer radius of headquarters of ABCGH, endorsements by government and non-government organizations. Patients were adults aged 19 years old and above, diagnosed with NCDs at seen at least twice by the MMC. Patients were monitored through digital blood pressure machines pre-pandemic and Bluetooth remote monitoring blood pressure machines during the pandemic. A retrospective analysis of the blood pressure was done with 95% confidence level for hypothesis testing.

Results: A total of 7,472 patients were seen and treated by the MMC. An average decline of 2.61 and 2.31mmHg on systolic and diastolic blood pressure at initial visit and subsequent visits resulted to further improvement of BP control. Patients with good follow-up visit have better BP control and have higher proportions reaching target BP goals compared to those with poor follow-up.

Conclusion: Healthcare is not equally accessible and affordable to all. Expanding programs such as the MMC, Bluetooth remote monitoring devices and partnering with local government units will pave the path globally for better delivery of primary healthcare.

Keywords: *primary care, medical mobile clinic*

Modelling the Public Health Burden of Herpes Zoster and Impact of Adjuvanted Recombinant Zoster Vaccine Among Adults Aged ≥ 50 Years Old in Malaysia*

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Herpes zoster (HZ), commonly known as shingles, is a painful, dermatomal rash that has been described as aching, burning, stabbing, or shock-like. HZ can lead to complications including long-term nerve pain, known as postherpetic neuralgia (PHN). The lifetime risk of HZ disease without vaccination ranges between 20–30%. In Asia, the estimated overall incidence rate of HZ is 3–10 per 1,000 person-years. However, data in Southeast Asia, especially in Malaysia, are sparse. Therefore, HZ may be underestimated as a public health concern and adult vaccination may be undervalued by the public in Malaysia. Here, we estimated the public health burden of HZ and evaluated the public health impact of vaccinating adults aged ≥ 50 years in Malaysia with adjuvanted recombinant zoster vaccine (RZV), compared with no vaccination. A static multicohort Markov model with a one-year cycle length and a lifetime horizon was adapted to the Malaysian setting. The most up-to-date demographics (population size in 2022 and all-cause mortality in 2021) were obtained from the Department of Statistics Malaysia, age-specific annual HZ incidence from a worldwide meta-regression reporting Asian-specific values, proportions of PHN and other non-PHN complications from local and regional studies, and vaccine efficacy from the long-term follow-up trial ZOE-LTFU; (NCT02723773). First-dose coverage and second-dose compliance of RZV were assumed to be 30% and 70%, respectively. One-way sensitivity analyses (OWSA) were conducted to assess the robustness of model results. The model estimated that without RZV, there would be a total of 1,224,089 HZ cases, 304,605 PHN cases, and 166,044 non-PHN complications in Malaysia. Introducing RZV under 30% coverage could avoid 207,692 HZ cases, 48,448 PHN cases, and 28,173 non-PHN complications. The numbers needed to be vaccinated to avoid one case of HZ and PHN were 10 and 41, respectively. OWSA showed that the input parameters with the largest impact on the estimated number of HZ cases avoided were first dose coverage, initial HZ incidence, and vaccine efficacy waning. Overall, this modelling study estimated a substantial public health burden of HZ in Malaysia. The introduction of RZV could have the potential of reducing the HZ burden.

Keywords: *Herpes zoster; post-herpetic neuralgia; recombinant zoster vaccine; public health burden*

*Funding: GlaxoSmithKline Biologicals SA (VEO-000513).

Depression-like Symptoms in the Smartphone use Experiences of Students

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It is no longer news that smartphone technology and apps are critical tools for sustainable development and growth. The devices are essential for delivery, efficiency, engagement, security, health and communication. After all, the union between human development and digital technology is illuminated by smartphones. For instance, smartphones drive the process of extending opportunities, liberties and freedoms of people by improving daily living and well-being. Smartphones encourage the individual freedoms of ordinary folks to live better lives given the features and affordances of the tools in ways to promote human development. However, there is a concern on the uptake, affordances and the excessive use of smartphones by multiple categories of users and the impact on the society as a result of depression-related symptoms. The study evaluated depression-led behaviour within a user community in a developing country landscape within a human development framework. It is estimated that many young people spend too much time on their phones and the projections suggest even higher numbers with disturbing estimations for overall health and human development. There was a need to evaluate the prevalence of the phenomenon within a user group and assess the risk factors of frequent use behaviour. The assessment was essential to map the severity of the situation for sustainable human development and outline the drivers of the conditions so that we can determine its chronic, transient or progressiveness among a small sample of early excessive users. The research outlined the fundamental mechanisms that influence excessive use of smartphones by learners using perspectives from the Incentive-sensitization Theory (IST) to add scope and breadth. A total of 500 undergraduate students were invited to participate in the study. The fundamental results provided an understanding of the relationship between depression-like behaviour and anxiety and shed new light on the influence of frequency of excessive use, stress and depression-related symptoms. The conclusions outline how good smartphone practices can sustain human development and how users engage their smartphones leading to changing behaviours with mental health, stress and public health implications.

Keywords: *Excessive use, smartphones, depression-related symptoms, human development.*

**Assessment of Effective Coverage of Antenatal Care and Associated Factors in Squatter Settlements of Islamabad Capital Territory, Pakistan:
An analytical cross-sectional study**

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Background: Effective coverage of antenatal care goes beyond contact coverage and assesses the quality of service provided. We used World Health Organization (WHO) recommended positive pregnancy guidelines to assess effective coverage and factors associated with utilization of antenatal care among women in squatter settlements of Islamabad Capital Territory.

Methods: We conducted a household survey in the study area with 416 women who had given birth in the past one year. Face to face interviews were conducted after the selection of study subjects was done through a multistage sampling approach. Statistical analysis was carried out using SPSS 22. Effective ANC coverage was defined as 4 or more ANC visits along with all WHO recommended interventions received at least once during ANC. Adjusted Odds ratios with 95% CI were calculated using binary logistic regression to determine the independent effects of factors associated with the outcome.

Results: Of the 416 women interviewed, 399 (95.6%) had availed ANC services at least once. The coverage of four or more ANC visits was 92% but effective coverage was only received by 35% women. The proportion of women who received nutritional interventions, maternal and fetal assessment and other preventive measures was 68%, 51% and 80.8% respectively. Maternal education [adjOR,95%CI = 4.8(2.4-9.3)], family income [2.3(1.1-5.1)], multiparity [1.7(1.1-2.9)], place of first ANC visit [4.2(1.7-10.5)] and distance from health facility [2.2(1.3-3.6)] were independently associated with the uptake of effective antenatal care.

Conclusion: Despite a very high crude coverage of ANC services, the study shows a very low proportion of women receiving effective coverage. This stresses the importance of measuring the proportion of the population that receives health services with quality to monitoring progress towards achieving universal health coverage.

Keywords: *Antenatal Care, Effective Coverage, Squatter Settlements, Factors Associated*

Is only PCR Result Valid for Covid-19 diagnosis?

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Background: COVID-19 was a major challenge for different countries and their healthcare systems. Different countries were selected different diagnostic criteria for Covid-19. PCR test response was accepted as only diagnostic criterion of the COVID-19 by the Ministry of Health of Republic of Armenia (MH RA), based on which medical and anti-epidemiological care was provided.

The aim our study was comparison of pulmonary test results of Covid-19 convalescent patients in PCR positive and negative groups.

Methods: A prospective case-control study was conducted. The subjects of the research were the patients who received medical care in University clinics with coronavirus disease. Patients who were meet to inclusion criteria (moderate form of disease, no smokers) were selected. Then groups were formed based on the result of the PCR test. Patients with PCR positive response formed case and with negative response-control groups. After 3 months of discharge pulmonary function test (forced expiratory volume in one second - FEV1, forced vital capacity-FVC, forced mid-expiratory flow FEF25-75%) were conducted among two groups.

Results: Overall, 46 patients admitted with Covid-19 were recruited between 1 October until 1 December 2021 in University Clinics in Yerevan, Armenia. The baseline characteristics of COVID-19 patients in both groups were similar and didn't detect any differences between age, gender, height and weight. FEV1 was 3.12 ± 0.12 and 3.29 ± 0.3 in case and control groups, respectively ($p > 0.05$). FVC was 3.41 ± 0.18 and 3.54 ± 0.13 in case and control groups, respectively ($p > 0.05$). FEF results also were similar in groups.

Conclusion: Pulmonary functions tests after 3 months of discharge were similar regardless of results of previous PCR test. The use of PCR test as only diagnostic criterion for COVID-19 by MH RA is justified neither clinically nor epidemiologically. In order to study and clarify the obtained results, it is necessary to carry out a larger sample and in-depth research.

The Relationship of Depression Risk and Gestational Diabetes Mellitus

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Introduction: Gestational diabetes mellitus (GDM) refers to the occurrence of any degree of impaired glucose tolerance in pregnant women during pregnancy. GDM has short-term and long-term adverse effects on both the pregnant woman and the newborn, and it reduces the quality of life. GDM may increase the risk of developing preeclampsia, hypertension, and type 2 diabetes in pregnant women, and they are more prone to undergo caesarean section and experience preterm birth.

Methods: This study included review and integrated analysis relevant literature retrieved from search involving total of 6,876 patients with gestational diabetes mellitus. The search utilized the keywords ("gestational" AND "diabetes mellitus") AND ("depression" OR "depressive") AND ("adults" OR "women"), with a search period until October 2022. The literature search followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, analyzing, excerpting, and examining the retrieved relevant articles. Systematic literature searches were conducted in five databases, including Embase, PubMed, MEDLINE, CINAHL, and Cochrane Library, followed by an integrated analysis.

Results: We study, including a total of 6,876 female participants. The results of the study showed that compared to healthy pregnant women, women with gestational diabetes mellitus (GDM) had a higher risk of developing depression, with a significant association risk (OR = 8.77, CI: 7.98-9.64, $p < 0.05$).

Conclusions Pregnancy is a significant life transition for women, during which they experience physiological, psychological, and social changes. Pregnant women need to undergo adjustments and adaptations, and the occurrence of gestational diabetes during pregnancy poses a major challenge, impacting both their physical and mental well-being. Therefore, healthcare professionals who demonstrate increased sensitivity to the psychological and social health issues of pregnant women, and who can identify these health problems early on, can greatly benefit women with gestational diabetes, their babies, and the entire family.

Clinical Relevance: Gestational diabetes mellitus (GDM) is a significant and concerning healthcare issue in the pregnant women population due to its close association with depression. To reduce the risk of subsequent depression among women with GDM, it is crucial for healthcare professionals to conduct early screening for depression in GDM patients and provide appropriate care strategies.

College Students and Fast Fashion

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Fast fashion damages the environment with a variety of pollutants and waste, and due to the lack of knowledge and understanding of its effects, many go on supporting this overwhelmingly large industry. The ever-growing demand for new and interesting products is causing the overproduction of clothing and textiles, creating a domino effect of environmental damage. Approximately 88 percent of American consumers shop for fast fashion. Young adults ages 18-24 are the most targeted group for fast fashion advertisements in the media as they influence their fashion behaviour. Previous studies have shown how many college-aged people are heavy fast fashion consumers. These studies relied on quantitative surveys regarding the habits and routines of students and their fashion choices. In contrast, this study is primarily composed of qualitative data regarding the thought process of college students. A simple questionnaire was emailed to the entire student body of Burman University. N for this study is 40, as expected most respondents were female (78%). Answers to open questions were grouped according to themes. Results showed that around a third of respondents often shop fast fashion while more than half frequently used alternatives to fast fashion. The wide majority of respondents were aware of fast fashions problems with pollution, overproduction, waste and work force ethics, even though not in as much detail as outlined in this paper. In conclusion, contrary to previous studies, college students are becoming more aware. This study shows that students are expressing interest in a change in societal shopping norms. College students can make a difference in fashion habits as their knowledge and understanding of fast fashion grows and disseminates through the population.

Feasibility of COVID-19 Self-Testing in Refugee Learning Centres in Malaysia: A Qualitative Approach

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Background: Self-testing plays a crucial role in the early detection and management of various diseases, including COVID-19, Hepatitis B and C, HIV, and HPV, empowering individuals to take proactive control of their health and alleviate the burden on the healthcare system. For marginalised refugee communities disproportionately impacted by COVID-19, self-tests expand accessibility, reduce disease transmission, and ensure timely interventions. Recognizing schools as crucial gateways to reach the wider refugee community, this study assessed the feasibility of implementing COVID-19 self-testing in Refugee Learning Centres (RLCs) across Malaysia amidst their return to endemicity.

Methods: During the preparatory phase, eleven semi-structured interviews (SSIs) were conducted with head teachers from five community-based (CBO) and six non-governmental organizations (NGO) based RLCs to capture contextual factors influencing the effective implementation of COVID-19 self-testing. Following study implementation at these RLCs, four SSIs and seven focus group discussions, involving 35 teachers were conducted to explore challenges encountered and lessons learned. Qualitative data were audio-recorded, transcribed verbatim, translated, and coded using thematic analysis. Themes with sub-themes were identified and defined with quotes from the transcripts to identify broad overarching issues linked to the study objectives.

Results: Three themes emerged in relation to the intervention implementation: firstly, the capacity of RLCs to sustain the COVID-19 self-testing intervention, including the resource constraints of logistics and limited space, shortage of staff, heavy teaching load, and a high student turnover rate. Secondly, barriers pertaining to refugee parents that challenged the intervention implementation, including low parental literacy levels, language barriers, and busy schedules. Thirdly, there were expected and unexpected benefits that accrued to the RLCs as a result of implementing the COVID-19 self-testing rollout, including reduction of transmission risk, increased awareness, reduced truancy rate, and overcoming economic barriers to access to COVID-19 self-testing.

Conclusion: This research contributed to evidence-building for COVID-19 self-testing strategies to be delivered through RLCs. The provision of free COVID-19 self-test kits facilitated a safe learning environment for refugee children and boosted the refugee community's active engagement in pandemic control strategies. It helped in the reduction of transmission risk within the RLCs and brought unexpected benefits in education.

Keywords: *refugee health, COVID-19, self-testing, learning centre*

Prevalence and Determinants of Premenstrual Syndrome among Female Youth in a Rural Area of Kerala, India

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Menstrual cycle has got a major role in the reproductive life of a woman and so are the disorders related to it. Premenstrual syndrome (PMS) is one among them. The worldwide prevalence of PMS is reported to be 30-40%. In India an incidence of 20% has been reported. PMS can have impact on the social, academic and work lives of a woman. So, it is important to study its prevalence and determinants particularly among youth which comprises of a productive age group. There are only a limited number of studies from Kerala on premenstrual syndrome and factors associated with it. Hence, this study was conducted with the objectives of estimating the prevalence of premenstrual syndrome and determining its associated factors among female youth in a rural area of Kerala. A community based cross sectional study was conducted among 376 female youth in Tholur Community Health Centre area of Thrissur district in 2020. Cluster sampling method was used. Data on socio-demographic profile, anthropometry, menstrual factors, lifestyle factors and premenstrual syndrome as per the American College of Obstetricians and Gynaecologists (ACOG) criteria were collected by interview technique using a semi structured proforma, after getting consent. Data were coded and entered in excel sheet and were analysed using SPSS 20.0. The mean age of the study participants was 19.61 ± 3.45 years. The prevalence of PMS was found to be 47.6% [95% Confidence Interval (CI) 39.8-55.4]. The most common symptom reported was angry outburst (72.6%) followed by joint or muscle pain (63.7%). The least reported symptom was weight gain (1.1%) The most common dysfunction due to PMS was the difficulty in concentrating in studies or work (75.4%). Other major dysfunctions included lack of motivation (55.9%) and absenteeism in school or work (47.5%). Multivariate logistic regression analysis has shown statistically significant adjusted odds ratios for obesity [1.28(95% CI 1.02-1.62)], dysmenorrhea [2.81(95%CI1.69-4.65)],family history[3.17 (95% CI 1.79-5.63)], frequent consumption of sugary food items [1.45 (95% CI 1.08-1.96)] and infrequent consumption of vegetables and fruits [2.51 (95% CI 1.79-3.51)]. PMS was not found to be significantly associated with any socio-demographic factor.

Keywords: *Premenstrual syndrome; prevalence; determinants; rural area*

Below the tip of the Iceberg: Rethinking the '*problem*' of adolescent pregnancy in Alta Verapaz, Guatemala

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Introduction: Guatemala's government signed the peace accords in 1996, ending a 36-year civil war marked by Mayan Indigenous genocide. Under-investment in the public health system has led to inequalities in access to healthcare services, including sexual and reproductive health (SRH), particularly for Indigenous adolescents. Alta Verapaz department is the most affected within the country, reporting the second-highest number of adolescent pregnancies and gender-based violence. In response, the Guatemalan government issued the National Plan for the Prevention of Adolescent Pregnancy, but it is far from addressing the problem and reaching the target population. The current study aims to reveal the discourses surrounding systemic barriers and opportunities related to adolescent SRH.

Methods and analysis: A Critical Discourse Analysis methodological design grounded in the Intersectionality-Based Policy Analysis framework was used. The fieldwork was conducted in Alta Verapaz for six months, consisting of four focus group discussions with Indigenous adolescents (13-18 years) ($n=30$), 18 semi-structured interviews with community members, and 20 interviews with key informants from institutions. An inductive reflexive thematic approach was used to create open codes and identify patterns for analytical themes.

Results: Based on participant discourses, four analytical themes emerged: 1) intergenerational identity, 2) SRH knowledge, attitudes, and practices, 3) Perceptions surrounding adolescent pregnancy, and 4) lack of government support. The main findings revealed systemic and cultural barriers and stigma that limit SRH information and services access. These factors contribute to a heightened risk for sexual violence and pregnancy, especially among adolescents under 14, resulting in rejection, discrimination, and marginalization. The detrimental cycle of identity alienation, inadequate protection, breakdown of family and community support networks, and limited access to maternal, neonatal, and mental health services often derive in tragic consequences such as forced marriages, unsafe abortions, and mental health problems, including suicide. These persistent violations of adolescents' fundamental SRH rights perpetuate the cycle of harm.

Conclusions: The current study uncovered a dissonance between the national plan implementation and the community experiences. A comprehensive and inclusive approach is needed to address SRH access and services gaps. Reflections on the implications of designing and implementing equitable adolescent SRH programs and policies are addressed.

Keywords: *Indigenous Adolescents, Sexual and Reproductive Health, Policy Analysis, Guatemala.*

Association between Chronic Obstructive Pulmonary Disease and COVID-19 severity Among People with HIV From The D.C Cohort: A Cross-Sectional Study

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Background: COVID-19 was a global pandemic, resulting in substantial morbidity and mortality. COPD has been identified as a risk factor for severe COVID-19 outcomes. However, the association between COPD and COVID-19 severity among people with HIV is not well established.

Methods: In this cross-sectional study, we investigated the association between COPD and COVID-19 severity in people with HIV using data from the 2020 DC Cohort COVID survey (N = 1,972). We used multivariable logistic regression models to analyze the data and calculate prevalence odds ratios and p-values for severe COVID-19 among patients with and without COPD, adjusting for age, sex, gender, asthma, and smoking status. We also investigated interactions for COPD by age, gender, race, age by race, gender, and smoking history, race by gender, and smoking history, and gender by smoking history.

Results: Of the 109 people with HIV with COPD included in the study, 0.60% had severe COVID-19. Our results suggest that there is no statistically significant association between COPD status and severe COVID-19 after adjusting for confounding variables (POR 2.297, p-value>0.646). However, among current smokers, there is a statistically significant association between COPD and severe COVID-19 (POR 24.87, p-value<0.036).

Conclusion: Our study provides important insights into the association between COPD and COVID-19 severity in people with HIV. Our findings suggest that current smokers with COPD may have a significantly higher risk of severe COVID-19 outcomes. These findings underscore the importance of smoking cessation programs and regular monitoring of COPD in people with HIV to reduce their risk of severe COVID-19 outcomes.

Advancing Health through Evidence Assisted Decision with Health Policy and Systems Research Program: a qualitative evaluation of a national health research grant management process in the Philippines.

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Background. Health policy and systems research (HPSR) emerged as a multidisciplinary field that seeks to improve evidence-based decision-making (EBDM). The Department of Health (DOH)-Philippines and Philippine Council for Health Research and Development (PCHRD) launched the Advancing Health through Evidence-Assisted Decisions with Health Policy and Systems Research (AHEAD-HPSR) program in 2017. Research conduct is an identified component to achieve AHEAD-HPSR's goal of EBDM and is implemented through the grant making role of DOH and PCHRD. Evaluation of the grant management process identifies enabling factors and barriers which limit the conduct of more research in low- and middle-income countries (LMICs).

Methods. This study evaluated the research grant management of the AHEAD-HPSR program through surveys, interviews, or focus group discussions with grant recipients, AHEAD-HPSR program staff and management, and DOH Bureaus. The data were analyzed through content and thematic analysis using an abductive approach guided by the grant life cycle for federal grant-making agencies and grant recipients by the US Government Accountability Office.

Results. The results of the study revealed positive features of the AHEAD-HPSR grant program but also revealed gaps as a research grant-giving initiative. Backchanneling and social capital are used by grantees to facilitate research implementation slowed down by multiple bureaucratic processes. Same policies are applied to drug development and HPSR grants—two highly different fields. Guidelines exist from the design to close out stages of the grant but are lacking in the broader outcomes stage. It is unclear how the grant influences policy through its funded research outside of peer-reviewed publications, especially as policymaking is a highly complex and political process.

Conclusion. This study contributes to the limited literature on HPSR grant management in LMICs. Valuable information and recommendations were contributed by stakeholders in this evaluation. These are manifestations of a continuing interest and desire to make HPSR in the Philippines more robust and relevant. HPSR grants must ensure that they are designed to be flexible. The program must continually evolve and modify grant policies and systems applicable to its multidisciplinary context.

Keywords: *research grants, grant management, health policy and systems research, research governance*

Effectiveness of a mHealth Intervention with Short Text Messages to Promote Treatment Adherence among Mexican People Living with HIV: A Randomized Control Trial.

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Background: UNAIDS in its latest report has registered over 37.6 million people living with HIV (PLWHIVA) globally in 2020, of whom only 27 million are estimated to have access to antiretroviral treatment. Adherence to treatment is a fundamental pillar to prevent the progression of the disease and increase the patient's life quality. Adherence promotion has been addressed from various approaches, one of which has been reminders with short text messages (Short message service, SMS) that have shown efficacy in various studies. Thus, we hypothesized that an mHealth type intervention will improve adherence to antiretroviral treatment in adult patients living with HIV compared to standard care. The objective of this study was to implement and evaluate the effect of the mHealth-type intervention on adherence to antiretroviral treatment in adult patients living with HIV compared to standard care.

Methods: Randomized controlled trial whose universe was the patients who received care at the HIV Unit of the Hospital Civil Fray Antonio, Guadalajara, México. A sample calculated at 40 patients for each group (intervention and control). Patients who have HIV infection and are starting antiretroviral treatment (ART), whose age is greater than 18 years and who have a mobile device were included in the study. The messages consisted of appointment reminders and adherence and motivational messages over a six-month period.

Results: The intervention group showed greater adherence to treatment than the control group (92 % vs 96 %, $p < 0.0001$). In addition, this group of individuals showed various improvements in their clinical characteristics compared to the control group; among them, lower viral load (141cop/mL vs 2413cop/mL, $p < 0.0001$) and the tendency to a greater number of TCD4+ lymphocytes (399 vs 290cell/uL, $p < 0.1526$). These findings allow us to reject the null hypothesis and accept that the intervention improved the adherence of patients who received it compared to standard care.

Conclusion: The results confirm that an mHealth intervention impacts ART adherence, therefore it is important to implement programs based on mobile electronic health which reduces the barrier of distance and increase the patient's commitment to their treatment.

Keywords: *mHealth, treatment adherence, HIV/AIDS*

Management of the Health Care System in the Context of Migration and the Refugee Influx to Poland

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With regard to the permanent demographic changes taking place in today's world, increased attention to planning and organizing health services is necessary. Refugee health and health care issues are complex, and an integrated, multidisciplinary approach is crucial. The purpose of this paper is to analyze the issues related to the migration situation in Poland with a particular focus on the refugee problem and, against this background, to signal basic directions regarding the planning and organizing of the health care system. The first part presents general information on the management of the health care system in Poland. The second presents the demographic situation of the country. The next deals with issues related to migration to Poland. The last part focuses on the situation of refugees from Ukraine, while signalling the problems of refugees from other countries. After Poland's accession to the European Union, due to mass mobility to EU countries, the balance of migration was clearly negative. The situation changed dramatically after 2014 and was associated with the influx of migrants from Ukraine. It has now been compounded by the events of 2022. The hostilities caused more than 3 million war refugees to cross the Polish borders between February and April (more than 880,000 people left for Ukraine in the same period). Such a large influx of refugees from Ukraine generates numerous challenges with regard to social policy, including the Polish health care system. At the same time, it should be emphasized that while the problem of providing medical assistance to the population arriving from across the eastern border is pressing, there are also other foreigners in the country, sometimes from culturally different countries, who already face a language barrier and difficulties in accessing information on health care options at the outset. The situations cited highlighted a number of challenges facing health care in Poland.

Keywords: *health systems - migrant health - demography*

Qualitative Insights on Syrian Refugees (in)accessibility to Healthcare pre- and post-COVID-19 Pandemic in Egypt

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The overlapping fragilities of Middle east and North African (MENA) countries aggressively threaten refugee health. The intricate interaction between a global pandemic and forced displacement becomes critically apparent in the population of Syrian refugees. Egypt is a unique context for Syrian refugees in the MENA region as data about them in Egypt is scarce and as Egypt is an assimilatory system of urban refugees striving towards an inclusive universal healthcare coverage (UHC). Although Syrian refugees are provided from a legal perspective with the same access to healthcare services as Egyptian citizens, numerous implementational barriers limit refugees' actual access to healthcare. Thus, this study investigates how access to healthcare of Syrian refugees in the biggest three refugee-hosting Egyptian cities have (not) changed after the COVID-19 pandemic on both the short- and long-term. There was a severe short-term decline of healthcare access among Syrian refugees, with 140% increase in out-of-pocket expenses spent on healthcare and 76% increase in hospitalization costs a few months upon the pandemic hit. On the long-term, mobilizing awareness campaigns and an inclusive national response, raised some attention to the unclaimed healthcare entitlements, health practices awareness, and false convictions, which did shift long-term healthcare utilization from private to public for some people. Despite the acute short-term impacts, the inclusion against a communicable public health emergency, showcased by the Egyptian authorities from day one, may play a defining role in Egypt's efforts to reform healthcare insurance schemes. Hence, COVID-19 long-term impacts could even extend beyond several years impacting how refugee insurance schemes could be envisioned in Egypt's future UHC. Many policymakers have expressed that mainstreaming of Syrian refugees into a national system will be the most viable option of inclusion since the current protection framework is neither effective nor sustainable. Although the final potential financial protection framework to accomplish mainstreaming remains unresolved, the incorporation of Syrian refugees into Egypt's UHC seems very highly likely to happen.

Keywords: *Syrian Refugees in Egypt; Healthcare Access; COVID-19 Pandemic; UHC*

Human Exposure of 5G Radio Frequency Electromagnetic Fields and Measurements in Langkawi Island

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In this article, the effect of 5G radio transmissions on health has been studied extensively. Despite the ever-growing body of scientific knowledge, the public including non-governmental organizations continues to be concerned about Electromagnetic fields from radio frequency of 5G and their adverse health impact. The recent studies on the 5G (RF-EMF) false claims from the news they perceived, and the related EMF compliances imposed by the International Telecommunication Union-Telecommunication Standardization Sector (ITU-T), leading to international standards for network antennas and exposure limits for the public are discussed. This article will help the public to understand that 5G RF-EMF is non-ionizing radiation and encourage them of their safety by assessing the RF-EMF exposure measurements from different locations of 5G base stations in Langkawi Island.

Keywords: *5G, Human Exposure, ITU-T, electromagnetic fields*

Assessment of Well-Being During and After COVID-19 Pandemic Among University Students in Philippines

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Purpose: Although the World Health Organization (WHO) recently declared the end of the COVID-19 pandemic as a public health emergency in May of 2023, long COVID or Post-COVID Conditions (PCC) continue to debilitate 19 million American adults with unknown prognosis. No similar data on this syndrome is available in other world populations, particularly low to middle-income countries. Our Philippines data reveal a devastating experiences for young adults who struggled to cope with physical ailments, psychological difficulties, financial and housing insecurities, and social alienation during the pandemic years.

This presentation will illustrate the profound, severe, and continuing impact on the mental well-being and social functioning of university students one year after restrictive quarantines were lifted in the northern province of the Luzon Island of the Philippines.

Methods: Two waves of data collection occurred November of 2022 (N=194) and May of 2023 (N=185) to assess knowledge, attitudes, and perceptions of the virus threats, impact on personal and social functioning, stress and anxiety, mental health concerns and proper treatment. Students, aged 18 to 62, who were enrolled at Baguio Central University, voluntarily responded to the web-based COVID-19 well-being questionnaire at Time I and II. The questionnaire elicits responses to financial resources and difficulties, knowing family or friend suffered or treated for COVID-19 infection, mental and physical health concerns and appropriate care, worries about COVID-19 threats and their coping skills. These questions were framed to the major time events related to the pandemic, at T1 measurement: before quarantines began in 2020, from 2020 to end of 2021, early 2022 to November 2022. For T2 measurement, the same questionnaire was used to exclusively ask about these experiences in May of 2023.

Results and Implications: We will present descriptive and inferential statistics to demonstrate the incidence rates of mental health problems and their relationships to gender, work/student status, financial resources. Social functioning will also be examined three years after the first national COVID-19 public health quarantines. For example, students reported in T1 as much as 86% of students who were symptomatically depressed, between 2020 and end of 2021; and knew someone similarly depressed during the same period.

We will discuss the important implications from the research findings to guide the planning and development of appropriate mental health support and interventions using telecommunication technologies to help university personnel and students cope with the current epidemic and future virus-based pandemics.

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