

# Book of Abstracts

## The 5<sup>th</sup> International Conference on Public Health and Well-being

(PUBLIC HEALTH 2023)

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Book of Abstracts of the 5<sup>th</sup> International Conference on Public Health and Well-being  
(PUBLIC HEALTH 2023)

Edited by Prof. Sally Guttmacher & Prof. Dr. Hardisman Dasman

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## MESSAGE FROM THE CONFERENCE CO-CHAIR PUBLIC HEALTH 2023



We trust you will find of interest the papers in this volume that were presented at the 5<sup>th</sup> International Public Health and Well-Being Conference held in Bangkok, Thailand in 2023. The overall theme of the conference was: Interventions to Mitigate Risk Factors Threatening the Public's Health. Presenters at the conference represented 18 countries and the presentations are on a variety of topics including: MCH, Communicable diseases, (mostly COVID 19), Non-Communicable diseases, Mental Health, Nutrition, and Dental disease.

Astonishingly, some of the major health advances in the past century which were accomplished through public health research and measures are currently being challenged. The anti-vaccine or "anti-vaccers", as they are called have organized and disseminated through social media or non-peer reviewed journals papers that ignore the findings of science and continue their critiques that vaccination leads to cancer or autism and that the COVID 18 vaccine will harm you. In parts of the world religious extremists continue to murder public health workers who are attempting to vaccinate children against polio. Manufacturers of guns continue to fight against gun control, putting profits above the public's health. And the free and easy way that "pain killers" are continuing to be promoted leads to a continuous climb in drug overdoses. Clearly those of us who have chosen to work in public health have many challenges to deal with and much work to do. It is hoped that by continuing our work and sharing our findings through meetings like this that we will further protect and secure the public's health.

The next conference on Public Health and Well Being will be held in Kuala Lumpur, Malaysia in 2024. We encourage all who are interested in attending the conference to submit an abstract of your presentation as soon as the call for papers is released.

**Prof. Sally Guttmacher**

Emerita Professor of Public Health,

New York University, USA

Senior Technical Advisor: Community Rising Africa Network

## MESSAGE FROM THE CONFERENCE CO-CHAIR PUBLIC HEALTH 2023



Dear Colleagues,

It is with great pleasure and excitement that I welcome you to the 5<sup>th</sup> International Conference on Public Health and Wellbeing as a Conference Chair. This gathering represents a significant milestone in the field, and I am deeply honoured to be a part of this dynamic community of researchers, professionals, and enthusiasts. I would like to express my heartfelt gratitude to every one of you for joining the conference.

The conference will be held on 7-8 November 2023 in Bangkok, Thailand with hybrid modules, in which the participants can join either in person or online. Over two days, we have the unique opportunity to engage in thought-provoking discussions, share groundbreaking research, and foster meaningful collaborations that will shape the future of our field of health and wellbeing. The health and wellbeing conference covers the spirit of innovation and progress that defines in the field of health and wellbeing from prevention to rehabilitation, from youth and active age to elderly. Moreover, throughout the event, we will explore the latest developments, challenges, and opportunities that we face a head.

Beyond the formal sessions, the conference will be a tremendous opportunity opening the bridge for future collaboration. I encourage all participants to take full advantage of the networking opportunities available by looking at the expertise area of presenters and participants. Building connections and exchanging ideas with your peers is one of the most valuable aspects of this even. I am very pleased that you will find this experience both professionally enriching and personally rewarding. In addition to the intellectual feast that awaits, we have arranged social events and activities to allow you to unwind and connect on a more personal level. Whether you are a seasoned conference attendee or a first-time participant, there is something here for everyone.

Lastly, I would like to express my sincere gratitude to our organizing committee, specially iConferences, and volunteers whose tireless efforts have made this event possible. Their dedication to our shared mission is truly meaningful. As we come together to explore, learn, and collaborate, let us also remember the broader impact of our work. Our contributions have the potential to drive positive change, solve pressing global challenges, and inspire future generations. Let us seize this moment to reaffirm our commitment to making a difference.

Thank you for being a part of this incredible journey.

**Prof. Dr. Hardisman Dasman,**  
Professor in Medicine, Public Health & Community Medicine,  
Faculty of Medicine,  
Universitas Andalas,  
Indonesia



## MESSAGE FROM THE ACADEMIC PARTNER PUBLIC HEALTH 2023



Ladies and gentlemen, esteemed guests, and fellow healthcare advocates,

On behalf of our institution, Faculty of Medicine, Andalas University, it is with great honor and enthusiasm that I stand before you today as the academic partner to inaugurate this significant Health Conference. The 5<sup>th</sup> Public Health and Wellbeing Conference resonates deeply with our commitment to education, research, and the pursuit of a healthier world.

In an era defined by remarkable advancements in medicine and technology, the challenges and opportunities within the field of healthcare are more profound than ever. The global health landscape is evolving, and it is crucial for us to come together, share knowledge, and collaborate on innovative solutions that will shape the future of healthcare.

In the academic arena, we recognize our responsibility to foster a nurturing environment for both education and research. Our institution is dedicated to producing the next generation of healthcare professionals who will not only provide world-class care but also lead the way in driving positive change. This conference serves as a testament to our commitment to excellence in healthcare education and research. I believe, in this conference, we will have the privilege of engaging with leading experts, researchers, and practitioners in the healthcare field. The discussions and presentations scheduled throughout this event will explore the most pressing issues in healthcare today, from healthcare access and equity to cutting-edge medical breakthroughs.

We encourage you all to participate actively, exchange ideas, and forge connections that will foster a future where healthcare is not just a profession but a global mission. It is our collective dedication to advancing healthcare that will light the path towards a brighter, healthier, and more equitable world.

I would like to express my deepest gratitude to the organizing committee, our esteemed speakers, sponsors, and every participant who has made this event possible. Your presence and contributions signify your commitment to making a positive impact on the future of healthcare. Furthermore, I officially welcome all of participants to this conference. Let us embark on this intellectual journey together, striving for a healthier and brighter future for all.

Thank you, and I wish you all a successful and enriching conference.

Prof. Dr. Afriwardi, M.D., M.A.  
Dean of Faculty of Medicine,  
Universitas Andalas,  
Indonesia

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## **ABSTRACTS OF ORAL PRESENTATIONS**

**PAPER SESSION (A)  
VACCINATION RESEARCH**

A1

[01]

**TRANSLATING LEARNINGS FROM COVID-19 VACCINATION TO  
STRENGTHEN ROUTINE IMMUNIZATION FOR HARD-TO-REACH  
POPULATIONS**

*Arora S.<sup>1</sup>, Seth S.<sup>1</sup>, Rastogi A.<sup>1</sup>, Abbas M.M.<sup>1</sup>, Soni G.K.<sup>1</sup>, Paul V.S.<sup>2</sup>*

<sup>1</sup>John Snow India Pvt. Ltd., India

<sup>2</sup>USAID India

**Abstract:** The COVID-19 vaccination program in India resulted in new capabilities, resources, and innovations. The purpose of this study was to explore the application of these developed capabilities and innovations to rebuild and strengthen the routine immunization system. The study elicited insights from five states across India with diverse socio-geographic attributes, where the USAID-funded MOMENTUM Routine Immunization Transformation and Equity project facilitated COVID-19 vaccination among hard-to-reach and vulnerable populations, such as tribal communities, migrant populations, the elderly, occupation-based vulnerable groups, and persons with disabilities, through local non-government organizations. The team conducted 55 retrospective qualitative In-depth interviews in June 2023 with immunization program managers at the district level, health workers/vaccinators (Auxiliary nurse midwives) of the sub-centers, mobilizers, and community leaders for the village/urban area, across ten districts and five states. Interviews were conducted by trained moderators with the help of an IRB-approved discussion guide, audio recorded and transcribed verbatim in English language. Using a framework approach, thematic analysis was conducted with the help of ATLAS.ti (version 23) to draw key themes for translating learnings to routine immunization. The importance of strong interdepartmental coordination, better access to accurate information (when, where, and how to get vaccinated, dispelling myths and misconceptions), close-to-home vaccination, and community-centric solutions were highlighted by the respondents when asked about COVID-19 vaccination program's success and its implications for routine immunization. They believed implementing these strategies could increase vaccine acceptance among hard-to-reach and hesitant populations, including 'zero-dose' vulnerable communities in India. Notably, faith-based leaders played a prominent role in rural areas but not in urban areas as per the health workers. Additionally, health workers emphasized replicating the involvement of seniors and influential community members as seen during the COVID-19 vaccination campaign to motivate and mobilize resistant families for routine immunization.

**Keywords:** Translating learnings of COVID-19 vaccination, hard to reach population, person-centric solution, non-government organization, vaccine hesitancy

A2

[02]

**COVID-19 VACCINE HESITANCY IN INDONESIA***Fadila Z.*<sup>1</sup>, Semiarty R.<sup>1</sup>, Hamzah P.K.<sup>2</sup>, Wahyuni A.<sup>3</sup><sup>1</sup>Department of Public Health and Community Medicine, Faculty of Medicine, Universitas Andalas, Indonesia<sup>2</sup>Imam Bonjol State Islamic University Padang, Indonesia<sup>3</sup>Faculty of Medicine, Andalas University, Indonesia

**Abstract:** Covid-19 is a disease that once caused a pandemic. One strategy for controlling this disease is by administering vaccines. Misconceptions about the safety, efficacy, risks, and distrust of the COVID-19 vaccine among Indonesians were reported as contributing factors to vaccine hesitancy. This study aims to describe doubts about the Covid-19 vaccine in Indonesia using the Health Belief Model approach. This research is a cross-sectional study with a total sample of 1399 respondents from all provinces in Indonesia. The research was conducted in February August 2022, questionnaires using Google Forms, distributed through social media platforms, including; WhatsApp, Instagram, and Facebook. The questionnaire can only be accessed once by respondents from social media. Of the 1399 research respondents, most were female, with an average age of 18-44. About 56.6% of respondents felt doubtful about getting the vaccine. The hesitancy varied across respondents' place of residence, susceptibility, severity, benefits, barriers, and cues to action. Respondents' perceptions of susceptibility to infection with Covid-19 were shallow, around 39.59%. Respondents generally believed that the seriousness of contracting or the severity of Covid-19 was not a severe problem at 58.11%. As many as 37.95% of respondents perceive vaccines as useless for preventing Covid-19. About 54.61% of respondents feel there are no obstacles to getting the Covid-19 vaccine, and 29.66% have no cues to action to do the Covid-19 vaccine. Acceptance of the COVID-19 vaccine is still low among Indonesian people in 2022. Effective social strategies must be adopted to reduce hesitancy about the Covid-19.

**Keywords:** Health behavior theory, COVID-19 vaccination, vaccine acceptance

A3

[03]

### COVID-19 VACCINATION UPTAKE AMONG REMOTE COMMUNITIES IN MALAYSIA

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**Abstract:** The dreadful complication posed by different COVID 19 variants to the population led to the implementation of the National COVID-19 Immunisation Program (NIP) by the Malaysian government. This program stands as the largest immunization effort in Malaysia's history. However, little is known about its impact on remote communities. Therefore, this study aimed to assess the prevalence of willingness to receive a COVID-19 vaccine among these communities. A cross-sectional study was conducted among 1005 households in remote communities across Malaysia in two phases, September 2021 and April 2023. Face-to-face interviews were carried out using a validated questionnaire, and the data were analyzed using SPSS version 26. Out of the 1005 household HH involved, 99% (995/1005) confirmed their willingness to receive a COVID-19 vaccination. Logistic regression analysis revealed no significant association between willingness for COVID-19 immunization with state, age, race, education levels, jobs, monthly gross income, monthly gross expenditure, distance from nearest city, distance from nearest health institution, comorbidities, water source and disasters ( $p>0.05$ ). The findings indicate that no significant sociodemographic factors that attributed to the willingness of COVID-19 vaccination. Malaysia immunization program achieve 99% average compared to US 45.8%, 80.7% in Alaska. This success can be attributed to a highly committed, integrated approach involving the government, whole society, private sector and non-governmental organizations (NGOs). The willingness of vaccination may be due to the public awareness on the importance of vaccination, whereas the information given by the authorities were delivered comprehensively. Additionally, legal implications in the form of movement restrictions were enforced, compelling remote communities to receive vaccinations to access public and private offices, shopping malls, dine in services, religious assembly halls and other communal spaces.

**Keywords:** COVID-19, willingness, remote communities, vaccine, Malaysia

A4

[04]

## THE FIGHT FOR YOUNG MINDS: COVID-19 VACCINE ACCEPTANCE AND CONSPIRACY BELIEFS AMONG A CARIBBEAN UNIVERSITY STUDENT POPULATION

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**Abstract:** The spread of conspiracy beliefs regarding vaccine acceptance posed major problems in addressing public health initiatives aimed at promoting vaccine acceptance globally. Consequently, this study assessed conspiracy beliefs associated with vaccine acceptance and the influence demographic factors had on conspiracy beliefs and vaccine acceptance. A quantitative, cross-sectional study was conducted using a convenience sample to recruit n=307 university students. A self-administered questionnaire was distributed electronically via Google Forms to collect data regarding conspiracy beliefs and vaccine acceptance. A Vaccine Conspiracy Belief Scale was used to rate conspiracy beliefs. Data were analysed using independent t-test, chi-square and ANOVA. The results showed that the majority of participants were ages 17-29 (79.5%), females (86.3%) and undergraduates (95.4%). Vaccine acceptance was highest among males (38.1%), students 17-29 years (27%) and those without any religious affiliation (66.6%). Vaccine acceptance and conspiracy beliefs found statistically significant associations with Seventh Day Adventist Religion ( $p = 0.031$ ), those with no history of chronic disease ( $p = 0.046$ ) and females having the lowest acceptance and highest conspiracy beliefs when compared to males ( $p = 0.036$ ). Universities should include specific interventions aimed at improving vaccine literacy through campus-wide vaccination education campaigns. This approach can be used to debunk myths and conspiracy theories associated with vaccine acceptance. The focus should be on females, youths, older persons, year one students and those with no history of chronic disease. Addressing conspiracy beliefs will seek to mitigate future public health risks.

**Keywords:** Vaccine, conspiracy, beliefs, acceptance, university, students



A5

[05]

**COMMUNITY ENGAGEMENT STRATEGIES TO INCREASE VACCINATION RATES AMONG AFRICAN AMERICANS: A SYSTEMATIC REVIEW***Chung D.*

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**Abstract:** The growing concerns and hesitations over vaccinations have contributed to the rising health disparity among African Americans (Njoku et al., 2021). Vaccines are essential interventions used to prevent the spread of infectious diseases. With high levels of vaccine hesitancy, there has been a considerable decrease in vaccination rates, especially among African Americans. Different strategies are needed to address vaccine hesitancy at an individual and community level. Previous research has analyzed the effects of monetary incentives, mass media, and technology-based health literacy strategies on vaccination uptake. Despite these strategies, the health disparity among African Americans still persists (Njoku et al., 2021; Majee et al., 2023). Therefore, this systematic review will analyze community engagement strategies and their impact on increasing vaccination uptake among African Americans. The findings from five reviewed studies indicated that the leading cause of vaccine hesitancy within African American communities was medical mistrust and lack of accessibility. The key themes were community forums, community-academic partnerships, faith-based or highly-respected leaders within the community, and vaccine access points. Additional research is needed for further investigation on the impacts of the different community engagement strategies on vaccinations.

**Keywords:** Vaccine hesitancy, vaccination, community engagement, vaccination uptake

**PAPER SESSION (B)**  
**CLINICAL RESEARCH & GENERAL PUBLIC**  
**HEALTH**

B1

[06]

**ENHANCING QUALITY AND CLINICAL AUDITING THROUGH DIGITIZATION***Udayai K., Kumar P.*

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**Abstract:** The process of digitizing quality and clinical audits involves the transformation of traditional paper-based systems into digital formats within healthcare settings, aiming to enhance and streamline the auditing process. These audits are pivotal in assessing and enhancing the care quality offered to patients. The transition to digital platforms enables healthcare organizations to harness technological tools for automated and optimized auditing procedures. This study's objective was to leverage technology and digital platforms to augment the efficiency, effectiveness, and outcomes of the audit process. The specific goals encompassed: enhancing audit accuracy and reliability within hospitals, detecting patterns and anomalies in audit data, generating monthly audit reports to identify non-compliances, documenting audited areas and auditor names for record-keeping, and evaluating the prompt completion of assigned audits, including Medical Record Department, Drug Chart, and Hand Hygiene Audits. The methodology employed an experimental observational approach and included four units from a tertiary hospital during the pilot phase. Key stakeholders involved were doctors, nurses, quality teams, and managers, along with those performing Drug Chart, and Medical Record audits. Data collection encompassed documentation review, on-site observations, audit report and compliance analysis, coupled with discussions with relevant stakeholders. Data collection tools involved Excel formats before and after digital platform implementation, including Desktop Dashboards and Excel Formats. The digital platform's introduction facilitated identification of areas for improvement, thereby contributing to enhanced quality outcomes. The platform also aided in analyzing compliance patterns and trends, presenting data graphically on a dashboard and highlighting anomalies. The compliance rate witnessed a significant boost post-platform integration, with auditors displaying heightened seriousness due to data availability on the dashboard, leading to increased audit frequency, effectively monitored by management. Furthermore, hand hygiene compliance improved, attributed to regular staff training. The centralized dashboard increased the feasibility of implementing more effective strategic plans across units. In conclusion, the study underscores the manifold benefits of digitizing audits, leading to notable enhancements in healthcare auditing processes. The digital platform substantially elevated hospital compliance rates identified areas for improvement and contributed to patient safety enhancements. Efficiency within the audit process improved, hand hygiene compliance increased, and the number of audits conducted exhibited a substantial rise. In essence, digitizing quality and clinical audits streamlines the auditing process, fostering organizational quality standards.

**Keywords:** Digitalization, audit, clinical, digital platform, tertiary care hospital

B2

[07]

**IMPACT OF MODERN LIVING CONDITIONS ON HUMAN MICROBIOME***Zhang G.<sup>1,2</sup>, Le Souëf P.<sup>3</sup>*<sup>1</sup>School of Population Health, Curtin University, Australia<sup>2</sup>School of Biomedical Sciences, The University of Western Australia, Australia<sup>3</sup>School of Medicine, The University of Western Australia, Australia

**Abstract:** Humans were not necessarily designed to thrive in affluent or western societies. The intricate exposure to diverse microorganisms, to which our ancestors adapted over the past 60 million years since mammals emerged, has significantly diminished in the past couple of centuries. In the absence of the rich, complex, and regularly challenging microbial load it was developed for, misinterprets harmless substances (allergens), prompting a range of self-destructive diseases like asthma. This phenomenon is considered a major contributing factor to the high prevalence of asthma and allergies in these regions. Chinese immigrants living in Australia experience increased allergic conditions: asthma, eczema, hay fever and wheeze. Recently we reported diminished innate cytokine responses in long-term immigrants, potentially increasing their pathogenic viral load and microbial carriage. In this study we assessed microbiomes in children and adults of Chinese immigrants and compared with their peers in China.

We found:

1. The profiles of the oropharyngeal and gut microbiome are different between newly-arrived and long-term Chinese immigrants in Australia.
2. Specific microbial taxa are significantly associated with immunological parameters but with different association patterns between newly-arrived and long-term Chinese immigrants.
3. Nasal *S. pneumoniae* may play a role in the development of allergic conditions in Chinese immigrants in a Western environment.

**Conclusions:** In highly resourced/developed countries, like Australia, human microbiome profiles have been altered by sanitising our exposure to the environmental microbiome resulting in a substantial increase in asthma and allergy.

**Keywords:** Microbiome, immigrants, asthma, allergies

B3

[08]

**A COHORT STUDY OF THE IMPACT OF COVID-19 PANDEMIC ON THE DIAGNOSIS, TREATMENT AND OUTCOMES OF COLORECTAL CANCER**

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**Abstract:** During the COVID-19 pandemic, many countries implemented lockdowns and social distancing measures, which may delay early diagnosis of colorectal cancer (CRC). This study aims to review the impact of the pandemic on the diagnosis and treatment outcomes of CRC. Patients who underwent colonoscopy or surgery for CRC at our Department of Colorectal Surgery from 1 Jan 2019 to 31 Dec 2021 were included in this retrospective cohort study. Outcomes measured were the time interval from clinic consult to colonoscopy as well as oncologic and perioperative outcomes for CRC patients that require surgery. 6057 (33%), 5161 (28%) and 7144 (39%) colonoscopies were performed in 2019, 2020 and 2021 respectively. There was no difference in the median waiting time from specialist consult to colonoscopy. 436 (30%), 486 (33%), 540 (37%) surgeries were performed in 2019, 2020 and 2021 respectively. There were higher proportion of ASA 4 patients (4.3% vs 1.4%,  $p < 0.001$ ), emergency surgeries (22% vs 14%,  $p = 0.002$ ), diverting stoma (13.6% vs 9.2%,  $p = 0.005$ ) and Hartmann's procedure (4.46% vs 0.46%,  $p < 0.001$ ) performed in 2021 compared to 2019. There were higher proportion of TNM stage 4 patients in 2021 (22.2%) compared to 2019 (16.7%) ( $p < 0.001$ ). There was no difference in post-operative complications, 30-day mortality and length of hospitalization across all years. The pandemic was associated with higher proportion of stage 4 CRC patients requiring surgery. Healthcare policies should continue to facilitate cancer screening, early diagnosis, and treatment to reduce cancer related morbidity for future pandemics.

**Keywords:** Colorectal cancer, diagnosis, healthcare policies

B4

[09]

**HIGH INJURY PREVALENCE IN ADOLESCENT FIELD HOCKEY PLAYERS:  
IMPLICATIONS FOR FUTURE PRACTICE***Pillay J.D., Ducray J.F., De Wit D.*

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**Abstract:** Field hockey is a popular sport, globally. Due to the nature of hockey, players repeatedly perform a combination of forward flexion and rotational movements of the spine to strike the ball, predisposing them to pain/injury. The aim of this study was to determine the prevalence and incidence of Low Back Pain (LBP) in male adolescent field hockey players, its characteristics and association with selected risk factors, and treatment approaches. A survey was conducted on 112 male adolescent field hockey players in the province of KwaZulu-Natal, South Africa. Sixty-eight questionnaires were completed (67% participation rate); period prevalence of LBP was 63.2% (35.0%: beginning of the season, 32.4%: mid-season, 22.1%: end-season); incidence was 38.2%. The most common location for LBP was the middle low back region (39.5%); the most common duration of pain was a few hours (32.6%). Most participants (79.1%) did not classify their pain as a disability; only 44.2% of participants received medical treatment. The results of this study, although limited to a select group of adolescents, showed a higher prevalence of LBP than previous studies. More importantly, even though most participants did not experience LBP classified as a disability, LBP still had a large impact on participants, as nearly half of participants consulted with a medical professional. A need for the application of further strategies in the prevention and management of LBP in field hockey such as adequate warm up and cool down, stretching exercises and rest between sessions are recommended as simple strategies to reduce LBP prevalence.

**Keywords:** Low back pain, prevalence, treatment approaches

B5

[10]

## IMPLICATIONS OF THE ECONOMICS CRISIS IN SRI LANKA ON THE MANAGEMENT OF PATIENTS WITH KIDNEY FAILURE UNDERGOING HAEMODIALYSIS

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**Abstract:** Chronic kidney disease affects >10% of the global population. Sri Lanka's ongoing economic crisis challenges managing kidney failure (KF) patients since kidney replacement therapy was already a burden. This study assesses the implications of the economic crisis on overall treatment compliance for KF. A descriptive cross-sectional study was conducted among KF patients undergoing hemodialysis at the National Institute for Nephrology, Dialysis, and Transplantation, Maligawatta. Ethical clearance was obtained from the Medical Faculty, Colombo. Patients were selected using a probability-based sampling method. Data was collected through an interviewer-administered questionnaire and analysed using Mann-Whitney u and Chi-square tests. Dialysis compliance was measured using the End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ). The study included 126 patients, median age of 42 years (18 to 80). Median distance to the dialysis centre was 25km. Majority is unemployed (60.30%). The cost of one dialysis session in the private sector (6500 to 8200) and monthly medications (1000 to 2500) increased. The economic crisis showed a significant association with missing dialysis ( $p=0.0006$ ), missing medicines ( $p=0.000042$ ), relying on the private sector for investigations ( $p<0.00001$ ), and affordability of supplements ( $p=0.000042$ ) and high protein/calorie milk ( $p=0.014028$ ). Increased private sector treatment costs and transportation expenses caused dialysis postponement. However, the overall compliance was not significantly affected according to ESRD-AQ. The study highlights the impact of the economic crisis on hemodialysis. Nevertheless, patients have adhered to the KF treatment regimen by temporary practices. Support systems must be developed to assist KF patients to overcome the economic challenges.

**Keywords:** Chronic kidney disease, economic crisis, ESRD-AQ, Hemodialysis, Sri Lanka

B6

[11]

**ENHANCING SURGICAL PATIENT SAFETY: A COMPREHENSIVE HOSPITAL COMPLIANCE INVESTIGATION TO ANTIBIOTIC PROPHYLAXIS***Srangenge Y.<sup>1</sup>, Ali S.<sup>2</sup>, Bidad N.<sup>3</sup>*<sup>1</sup>Faculty of Pharmacy, Universitas Andalas, West Sumatra, Indonesia<sup>2</sup>North Middlesex University Hospital, London, United Kingdom<sup>3</sup>School of Pharmacy, University College London, United Kingdom

**Abstract:** Surgical antimicrobial prophylaxis (SAP) is critical in preventing infections that may lead to sepsis, organ failure, and death during hospital stay. Despite huge advances in antiseptic measures, antibiotics, and perioperative precautions, surgical site infection (SSIs) still accounted or high morbidity and mortality (Reichman and Greenbreg, 2009). The hospital antimicrobial guidelines were developed to promote the rational use of antibiotics to prevent the emergence of drug resistant organism and conserve the antibiotic molecules (Niveditha, et al., 2013). This study aimed to evaluate and investigate hospital adherence to hospital surgical prophylactic antibiotic guidelines. A prospective audit was undertaken between 10 May 2017–13 June 2017 in the hospital. This study used non-random opportunity/ convenience sampling methods by including all adult patients who are subjected to clean and clean-contaminated surgery (focus on Gastrointestinal, Urology, and Orthopedic surgery). The prophylactic antibiotic selection and regimens are compared with hospital guidelines. A total of 146 patients, age of  $60.85 \pm 19.95$  years old were recruited for this study. About 43.3 % of procedures had full compliance with all guideline recommendations. The most frequently encountered noncompliance was subsequent dose of antibiotic prophylaxis (41.4%%). While route of administration was appropriate in all procedures. Appropriateness of antibiotic of choice, dose, and time of administration were 63.5%, 62.5%, and 98.1%. Considering the surgical specialty, full compliance was 6 (5.7%), 11(10.6%), and 28(26.9%), respectively, for urology, gastrointestinal, and orthopedic surgery. The standard protocol for perioperative antibiotic prophylaxis was not followed for all patients in the audit.

**Keywords:** Clinical pharmacy, rational drug use, antibiotic prophylaxis, hospital guideline compliance



B7

[12]

**A PRIMARY QUALITATIVE STUDY EXPLORING ADULT, TEESSIDE-BASED  
BAME INDIVIDUALS' EXPERIENCES REGARDING PHYSICAL ACTIVITY  
DURING THE COVID-19 PANDEMIC**

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**Abstract:** Research has found that people from Black, Asian and Minority Ethnic (BAME) communities face many health disparities and have worse health outcomes from current health interventions. The experiences of adult Teesside-based BAME individuals' regarding physical activity (PA) during the COVID-19 pandemic were mapped onto the capability, opportunity, and motivation model of behaviour (COM-B). Twelve adult BAME participants were interviewed via Microsoft Teams using semi-structured interviews, enabling the capture of participant perceptions of how their PA related to living a healthy PA lifestyle during the pandemic between April and August 2022. Using thematic analysis, seven themes were generated, with three key themes presented and others presented elsewhere. These were knowledge and awareness of the PA lifestyle, perceptions of the opportunities to improve the PA lifestyle choice, and the impacts of the COVID-19 lockdown on participants perceptions of PA. While literature has explored the application of the COM-B model generically, this has not been applied specifically to adult BAME individuals' lived PA experiences. The COVID-19 pandemic has presented an opportunity to understand the shift in adult BAME physical activity perceptions and experiences, necessitating a need to modify this model. Participants feared contracting the Corona virus while doing outside PA on the automated element of the COM-B model. In addition to the reflective element of the COM-B model, some BAME individuals were at a receptive stage and reflected on their PA lifestyle. This means that the COM-B model requires modification to ensure meaningful policies applicable to this population sector.

**Keywords:** BAME, physical activity, barriers, facilitators, experiences, COVID-19, lifestyle

B8

[13]

**ORAL HEALTH-RELATED QUALITY OF LIFE IN POST-COVID-19 PRIMARY CARE PATIENTS**

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<sup>2</sup>Tecnológico Estatal Fernando León De Vivero. Ica, Perú

**Abstract:** Post-COVID-19 patients continue to present residual symptoms that contribute to a poor quality of life, altering the quality of life related to oral health. To know the quality of life related to oral health in post-COVID-19 primary care patients. Descriptive, non-experimental, cross-sectional, observational, and prospective study. 361 patients were surveyed. female (52.9%); adult (55.4%); health personal occupation (16.6%); degree of higher education (76.5%); number of times diagnosed with COVID-19; mild COVID-19 severity (62.3%); was not hospitalized (93.9%); without previous comorbidity (63.4%); high perception of the risk of contracting COVID-19 (42.7%); fear of COVID-19 (62%); does not perceive post-COVID-19 sequelae (77.3%); and adult life stage (55.4%); The quality of life related to oral health in post-COVID-19 primary care patients is poorer; The perception of having teeth and mouth problems in a post-COVID-19 situation is associated with a greater impact of oral health on quality of life. There is a homogeneous distribution of the average and median values in the dimensions: functional limitation, physical pain, social disability, and handicap. Except for physical and psychological disability, the problems in the oral cavity with the greatest perception are, on a descending scale.

**Keywords:** Quality of life, oral health, covid-19, primary care

B9

[14]

**AI-BASED DIABETES DIAGNOSTIC INTERVENTION ADOPTION BY DOCTORS: MODELLING THE ENABLING FACTORS***Roy M.<sup>1</sup>, Vasudeva S.<sup>2</sup>, Jamwal M.<sup>3</sup>*

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**Abstract:** Compared with other industries, Artificial Intelligence (AI) adoption in healthcare is increasing, but at the same time, AI-based Diabetes diagnostic intervention among doctors is a matter of concern as India is steadily becoming the capital of Diabetes for the whole world. Therefore, research on the acceptance and adoption intention of AI-based Diabetes diagnostic interventions by doctors is imperative. This research proposes and tests an integration of the Technology Acceptance Model with Subjective Norms and Perceived Risk to explore the same. The study respondents are mainly doctors who use AI-based Diabetes diagnostic interventions in their day-to-day practice or at least know about the same. The dataset of the proposed research model is collected from 200 doctors through an online and offline survey in the states of Maharashtra and Karnataka, India. The empirical examination demonstrates the high predictive power of this proposed model in explaining AI-based Diabetes diagnostic intervention adoption among doctors. Finally, the theoretical and practical implications of this research are discussed. This study measures the adoption of AI-based Diabetes diagnostic interventions by doctors in India, using TAM as a foundation. The model incorporates factors like Subjective Norms (SN) and Perceived Risk (PR) and is not reported in previous literature. AI-based interventions can help identify diseases earlier and provide proper care and management. Further research can be conducted with case studies to longitudinally observe the Usefulness of the AI-based diabetes diagnosis adoption model framework in practice. This research is unique in the sense of incorporation of Subjective Norms (SN) and Perceived Risk (PR) Technology Acceptance Model (TAM) to understand the adoption of AI-based Diabetes Diagnostic Intervention amongst Doctors, which is not done till now.

**Keywords:** Artificial intelligence, adoption, technology acceptance model, subjective norms, user experience, diabetes diagnosis

B10

[15]

**KNOWLEDGE AND ATTITUDES ON SELF-CARE PRACTICES FOR  
ARTERIOVENOUS FISTULA CARE AMONG PEOPLE RECEIVING  
HEMODIALYSIS AT TEACHING HOSPITAL KARAPITIYA**

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**Abstract:** Hemodialysis (HD) is the major form of treatment when kidney failure has been reached, and arteriovenous fistula (AVF) care is one of the most important components of treatment regimens. To assess knowledge and attitudes on self-care practices for arteriovenous fistula care among people receiving hemodialysis at Teaching Hospital Karapitiya. A descriptive cross-sectional study was conducted in hemodialysis unit at Teaching Hospital Karapitiya involving 167 people on HD. Data, including socio-demographic data, clinical information, knowledge and attitudes on AVF care of the patients was obtained through an interviewer-administered questionnaire. Data was analyzed using SPSS 25 version, and significance was kept at  $p < 0.05$ . A majority of patients were in the age category (25.1%) of 50-59 years and were males. Most (71.9%) of the patients had adequate knowledge and 82.6% of the patients had good attitudes on self-care practices for AVF care. Knowledge on self-care practices significantly differed according to associated factors like socio-demographic (i.e., age, education qualification, family monthly income and use of cigarettes and alcohol) and clinical information (i.e., age at diagnosed of CKD, location of AV fistula and availability of information on AVF care). Attitudes on self-care practices significantly differed according to associated factors like socio-demographic (i.e., age, gender and use of cigarettes and alcohol) and clinical information (i.e., age at diagnosed of CKD, location of AV fistula and availability of information on AVF care) ( $p < 0.05$ ). The patients with renal failure undergoing HD having AVF should be encouraged to attend the teaching sessions/ teaching programs.

**Keywords:** Arteriovenous fistula, attitudes, knowledge, people receiving Hemodialysis, self-care practices

B11

[16]

**PREFERENCES AND UTILIZATION OF INDOOR SPACES FOR QUARANTINE OF COVID-19 AMONG REMOTE COMMUNITIES IN BORNEO, MALAYSIA***Saupin S.*<sup>1</sup> and Mahjom M.<sup>2</sup><sup>1</sup>Universiti Malaysia Sabah, Malaysia<sup>2</sup>Ministry of Health, Malaysia

**Abstract:** Amidst the significant impact of the COVID-19 pandemic on even remote communities, this study explores indoor quarantine preferences and utilization in these regions. Employing a mixed-methods approach, combining quantitative and qualitative research, the investigation centers on remote communities in Sabah, Malaysia. A two-stage stratified sampling method was employed, incorporating questionnaires in four data collection phases. Analysis encompassed SPSS for quantitative data and ATLAS.ti 23 software for qualitative data, involving transcription, coding, theme development, and reporting. Findings indicate that 43.8% established home quarantine spaces, while 56.2% did not. The majority (73.8%) preferred self-quarantine at home, with fewer opting for hospitals (19.2%) or quarantine centers (7%). Similar trends were noted for family members. Reasons for choosing home quarantine included comfort, proximity to family, and perceived access to medical resources. The study explored perceived congestion within household areas, revealing that the living room (38.5%), dining room (32.7%), and bedroom (84.2%) were considered crowded. Spatial oversight played a role in home quarantine decisions, with heightened monitoring in the living room (60.8%) and bedroom (50.8%), compared to the kitchen (51.5%) and bathroom (49.6%). Cultural and personal factors emerged as pivotal in shaping quarantine preferences, underscoring the significance of familiar environments and feasible monitoring in disease management within unique remote contexts. This research enhances understanding of effective strategies for disease containment in such settings.

**Keywords:** COVID-19, remote communities, quarantine, pandemic containment strategies

B12

[17]

**ORAL HYGIENE PRACTICE AND PERIODONTITIS AMONG ELDERLY PATIENTS ATTENDING DENTAL OUTPATIENT DEPARTMENT***Kanta S.M.*<sup>1</sup> and Sharower M.G.<sup>2</sup><sup>1</sup>Department of Health Education, NIPSOM, Bangladesh<sup>2</sup>Department of Entomology, NIPSOM, Bangladesh

**Abstract:** Global population is ageing and Bangladesh has one of the fastest growing ageing populations in this region. Oral health is a significant factor affecting older peoples' quality of life, overall health and wellbeing. The aim of the study is to assess oral hygiene practice and periodontitis among elderly patients attending dental outpatient department. Descriptive cross-sectional study was conducted among elderly patients attending dental outpatient department of Shaheed Suhrawardy Medical College & Hospital, Dhaka Dental College Hospital and Probin Hospital, Agargaon from 1<sup>st</sup> January to 31<sup>st</sup> December, 2022. Two hundred and twenty-seven elderly patients were selected by convenience sampling method. Data were collected by face-to-face interview through a pretested, semi-structured questionnaire and oral examination was done using Oral Hygiene Index Simplified (OHI-S) and Community Periodontal Index of Treatment Needs (CPITN). Statistics were presented in frequency, mean, percentage, chi-square test, Fisher's exact and Pearson's correlation test. A value of  $p < 0.05$  was considered statistically significant. Among 227 elderly patients the mean (SD) age was 55.75 (8.20) years; 51% were female and 49% were male. Among respondents, 70.48% cleaned their teeth regularly, 61.23% cleaned their teeth once daily, 70.5% used tooth brush and toothpaste for cleaning tooth, only 2.2% used the interdental aids. About 97.8% visited to dentist only when they had problem. More than half of the respondents 54% had poor oral hygiene status and 55.5% were found to have periodontitis. Periodontitis was observed to be significantly associated with oral hygiene practices and status. Smoking tobacco, smokeless tobacco, constant tooth picking and diabetes were associated with periodontitis significantly. There was strong positive correlation of oral hygiene index and periodontal index. This study revealed that more than half of the elderly patients had poor oral hygiene status and periodontitis. Oral hygiene practices, status, smoking, diabetes was associated with periodontitis. Awareness should be created to maintain good oral hygiene and regular dental checkup among elderly people.

**Keywords:** Oral hygiene practice, periodontitis, elderly patients

B13

[18]

**BEYOND SWEETNESS: TERATOGENIC EFFECTS OF ETHYLENE GLYCOL ON FETAL MICE MORPHOLOGY AND SKELETAL DEVELOPMENT***Srangenge Y., Yalani F.F., Almahdy A.*

Faculty of Pharmacy, Universitas Andalas, Indonesia

**Abstract:** The potential misuse of Ethylene Glycol, a known global poison, in food additives is a cause for concern due to its resemblance to glycerol. We address this concern by investigating its teratogenic effects on female fetal mice (*Mus musculus* L.) during organogenesis. Twenty mice were distributed across control and three dose groups (2000, 4000, 8000 mg/kg). Laparotomy on the 18th gestational day allowed meticulous alizarin and bouin-based examinations of morphology, viscera, and skeletal attributes. While maternal and fetal weights displayed changes ( $p < 0.05$ ), fetal count remained unaffected ( $p > 0.05$ ). Noteworthy effects included alterations in maternal and fetal weights, indicating Ethylene Glycol's impact. Dose-dependent anomalies included bone and hemorrhage effects at 2000 mg/kg BW, metacarpal, metatarsal, caudal, and hemorrhagic anomalies at 4000 mg/kg BW, and complex skeletal variations at 8000 mg/kg BW. Cleft palate remained unaffected. The study's findings underscore its significance in informing policy formulation, regulatory guidelines, and comprehensive testing strategies for ethylene glycol-containing products. Particularly vital is the focus on safeguarding the health of pregnant women who might be exposed to such products.

**Keywords:** Teratogenic activity, ethylene glycol, teratogen, fetal abnormalities, toxic sweetener.

B14

[19]

**R/APEREFED MODEL, HEALTH EDUCATION IS A THERAPEUTIC TOOL***Amer S.A.*

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**Abstract:** Worldwide, lifestyle-related diseases (e.g., diabetes, hypertension, and obesity) and their related morbidity have increased mainly unhealthy behaviors at least one of the six lifestyle pillars. Therefore, health education (HE) is essential to promoting the voluntary adoption of healthy lifestyle choices and behaviors. The R/APEREFED model is a HE intervention combination of educational strategies that has progressed in four generations from knowledge-based to skill-based to theory-based to now multiple theory-based and precision interventions. Health education should play a central role in the management of chronic diseases, compliance with medical advice, and long-lasting adoption of a healthy lifestyle. Therefore, we constructed the R/APEREFED model. This abstract presents the R/APEREFED model, which is an acronym representing the components of the model (R, referral; A, assessment; P, preparation; E education; R reinforcement; E enabling; F follow-up; E evaluation; D documentation). It is an assistant model for health education specialists that supports the practice of patient education and health promotion. This model or process consists of nine fundamental stages that are used to understand various factors that contribute to both health and health behavior and to guide the identification, development, and implementation of proper, effective interventions.

**Keywords:** Health education, therapeutic tool, chronic disease, promotion



B15

[20]

**QUALITY OF LIFE AND ASSOCIATED FACTORS OF LEPROSY PATIENTS  
ATTENDING LEPROSY AND DERMATOLOGY CLINICS AT NATIONAL  
HOSPITAL OF SRI LANKA**

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**Abstract:** This study aims to evaluate the dermatology-related quality of life and its associated factors of leprosy patients undergoing treatment. A descriptive cross-sectional study was conducted among 109 leprosy patients attending the leprosy and dermatology clinics of NHSL through a consecutive sampling method. Data was collected via an interviewer-based questionnaire. The quality of life (QoL) was evaluated using the Dermatological Life Quality Index (DLQI) and then amalgamated into two categories. A DLQI score of 0-1 being 'QoL not affected' and a DLQI score of 2-30 being 'QoL affected'. Associations were determined using Chi-square tests and Mann-Whitney-U tests at 0.05 significance. The data were non-normally distributed with a right skew. The mean DLQI score was 1.14 (SD=2.63). The majority belonged to the 'QoL not affected' category (n=88; 80.7%). A significantly higher proportion of the population who were Sinhalese (n=75; 88.2%) and married (n=73; 84.9%) had no effect on their quality of life when compared to those who were of non-Sinhalese ethnicity and not married respectively (p<0.05). Similarly, a significantly larger proportion of participants who could independently perform their activities of daily living (n=87; 82.9%), had no disabilities (n=63; 87.5%), and had no Leprosy reactions (n=76; 88.4%) were found to have no effect on their quality of life when compared to their relevant counterparts. The quality of life of most leprosy patients undergoing treatment is unaffected. Prompt identification and treatment, along with prevention of disability and Leprosy reactions indicate a better quality of life.

**Keywords:** Leprosy, quality of life, dermatological life quality index, National Hospital of Sri Lanka

**PAPER SESSION (C)**  
**MATERNAL AND CHILD HEALTH CARE**

C1

[21]

**THE LEVEL OF KNOWLEDGE OF MOTHERS HAVING 2-5 YEARS CHILDREN REGARDING MILESTONES OF EARLY MOTOR DEVELOPMENT***Shazu S., Sultana H.*

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**Abstract:** Children's health is considered an investment and a source of societal benefit. Due to physical and psychological development benefits, interventions within the first five years are regarded as one of the most successful aspects of disease prevention and health promotion. All parents require information on healthy child development. Additionally, maternal knowledge plays a vital role in child-rearing. This cross-sectional study aims to assess the level of knowledge of mothers having 2-5 years of children regarding the milestone of motor development. The study was conducted from 1st January to 31st December 2022. Purposive sampling was used to choose 350 Mothers who visited the Dhaka Medical College and hospital and Institution of Child and Maternal Health in Dhaka. Mothers with children 2-5years old who visited the health center and who provided informed written consent were included in this study. Amon 350 mothers, 169 (48.3%) demonstrated average knowledge, 140 (40%) exhibited good, and 41 (11.7%) showed a poor level regarding milestones of gross motor development. There was an association between the mother's knowledge level and with father's age, the mother's highest education, the father's highest education, the mother's marital status, the mother's age during 1st pregnancy, family income, the child's sex, and children's vaccination status, which were statically significant ( $p < 0.05$ ). Mothers had an average level of knowledge on milestones of gross motor development and an average level of knowledge on milestones of fine motor development. Health education and health promotion programs on early childhood development that employ the most effective method and media to reach the mother, as well as parenting programs that encourage early detection and intervention to protect children and maintain the strength of society, can help close this knowledge gap.

**Keywords:** Child development, maternal knowledge, health promotion

C2

[22]

## THE ASSOCIATION BETWEEN ANTENATAL CARE (ANC) OF MOTHERS AND LOW BIRTH WEIGHT (LBW) BABIES

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**Abstract:** Low Birth Weight (LBW) is a global health concern for childhood mortality and morbidity. Low birth weight one of the primary causes of child mortality and several diseases of future life in developing countries, especially in South Asia. Low birth weight (LBW) rates are increasing day by day in Bangladesh. Therefore, antenatal care is an important measure for enhancing mother and newborn health. The objectives of this study were to assess the association between antenatal Care (ANC) of mothers and low birth weight (LBW) babies. This cross-sectional study was conducted among 192 respondents in Neonatal intensive care unit (NICU) and inpatient department (IPD) of Obstetrics and Gynecology of four tertiary hospitals in Dhaka. Non probability sampling of purposive type was applied to select the samples. The study populations were the mothers giving alive low birth weight baby during the data collection period. Total study period was 12 months from January 2022 to December 2022. Birth weight of babies was recorded, mothers were interviewed and antenatal records were reviewed. Data analysis included frequency and percentage Chi-square test, Fisher exact test was used to determine the association between socio-demographic, maternal, obstetric, economic, facility factors and low birth weight baby. Majority mother was in 21-25 age group. The mean of age was  $25.2 \pm 5.5$  years and found the association with LBW ( $p < 0.05$ ). Majority 94% were Muslims and also significant association with LBW ( $p < 0.05$ ). About 38.5% mother completed up to primary education and monthly family income was 10,000 BDT. About 49.0% had received  $\leq 4$  ANC checkup, majority 65.1% had more than 2 babies and was found significant with LBW ( $p < 0.05$ ). Majority 58.9% were conceived once to twice and was found significant with LBW ( $p < 0.05$ ). Majority 51.5% delivered LBW baby in between 33-36 weeks of pregnancy and was found significant with LBW ( $p < 0.05$ ). Majority 76.6% mothers were anemic, 80.70% delivered baby by Caesarean section, 67.7% had pregnancy gap  $< 3.5$  years and also found significant with ( $p < 0.05$ ). This study revealed that a number of maternal factors affect the birth weight of newborn. The prevalence of LBW in Bangladesh might be significantly decreased by expanding antenatal service coverage and high-quality antenatal care.

**Keywords:** Low birth weight, antenatal care, neonatal health, maternal factors, child mortality

C3

[23]

### EXCLUSIVE BREASTFEEDING IN LESOTHO: INFLUENCES, BARRIERS, AND THE ROLE OF INFORMAL NETWORKS

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**Abstract:** Lesotho faces intricate malnutrition challenges intensified by the COVID-19 pandemic, deeply rooted in socio-economic and cultural dynamics. Exclusive breastfeeding during an infant's initial six months emerges as a critical countermeasure against these challenges. This practice is universally recognized and supported by global health organizations such as WHO and UNICEF. It stands as the primary nutritional benchmark for infants, supplying them with essential nutrients and antibodies vital for their optimal growth, development, and overall health. Breastfeeding not only offers a protective shield against common infections but also plays a significant role in fostering cognitive development in infants. Furthermore, it acts as a preventive measure against potential health risks such as obesity and certain non-communicable diseases in their later stages of life. However, several barriers, ranging from cultural prejudices and widespread misinformation to gaps in healthcare services, hinder its universal adoption. Our comprehensive study explored maternal care patterns in Lesotho, emphasizing the determinants that influence exclusive breastfeeding during an infant's formative year. Through detailed interactions with 97 mothers from diverse backgrounds, spread across seven distinct healthcare facilities in six different districts, data revealed insightful patterns. A significant 54.6% of mothers predominantly sought feeding advice from family members. Conversely, 9.3% consulted with non-family community peers, while a minor 1% leaned towards traditional health advisors. This heavy reliance on informal networks illuminates the paramount importance of immersing these influential sectors in evidence-backed educational initiatives. In conclusion, the data gathered underscores the pressing need for focused, evidence-based interventions that align seamlessly with established infant feeding guidelines.

**Keywords:** Exclusive breastfeeding, malnutrition challenges, informal networks, infant feeding advice, evidence-based health promotion

C4

[24]

**FACTORS ASSOCIATED WITH LATE ANTENATAL VISITS AMONG WOMEN IN MALAWI***Palamuleni M.E.*

North-West University, South Africa

**Abstract:** Early initiation of antenatal care (ANC) is critical in identifying and mitigating adverse pregnancy-related complications. Globally, a high percentage of women initiate ANC late. In view of this, the main objective of the study is to establish the prevalence and factors associated with late initiation of ANC among women in Malawi. The study is from the 2015-16 Malawi Demographic and Health Survey (MDHS). The study population consisted of 13251 women of reproductive age group who had given birth in the past five years preceding the survey. The data was analyzed using Chi-square test and multivariable logistic regression. The prevalence of late uptake of ANC initiation in Malawi was 75.6%. The logistic regression modelling revealed increased odds of late ANC attendance among women residing in Northern Region (AOR:1.172;95%CI:1.021-1.345) and Central Region (AOR:1.178; 95%CI:1.074-1.291), women residing in urban areas (AOR:1.273;95%CI:1.108-1.463), women with no education (AOR:1.814;95%CI:1.13–1.47), women with primary education (AOR:1.697;95%CI:1.13–1.47), women with less than 4 ANC visits (AOR:4.155; 95% CI:4.002-4.814), unmarried women (AOR:1.478; 95% CI:1.111-1.985) and women whose last birth was not by caesarean section (AOR:1.377; 95% CI:1.179-1.607). Reduced odds of initiating ANC late among women are observed among women in the age group 20-24 (AOR:0.634;95%CI:0.456-0.881), women in the age group 25-29 (AOR:0.645; 95%CI:0.476-0.874) and women in the age group 30-34 (AOR:0.634;95%CI:0.456-0.881). The study established that ANC initiation in Malawi is late. The late ANC association was associated with region, place of residence, marital status and age of respondents. To reduce late ANC initiation, the significant factors should be considered when designing new or reviewing ANC policies and strategies aimed at increasing ANC utilization.

**Keywords:** Antenatal care (ANC), timing of ANC, logistic regression, Malawi

**PAPER SESSION (D)**  
**SMOKING AND VAPING**

D1

[25]

**FROM BEANS TO BLOOD: THE EFFECTS OF DURATION AND AMOUNT OF COFFEE ON HEMOGLOBIN LEVELS IN TENGGER WOMEN**

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**Abstract:** Indonesian people have a tradition to drinking coffee almost every day which can cause decrease hemoglobin levels because it will inhibit iron absorption. The aim of this study was to analyzes the effect of duration and quantity of coffee on hemoglobin levels in women aged 17 – 40 years at Tengger, East Java, Indonesia. This cross-sectional study was conducted from July – August 2023. The examination of hemoglobin (Hb) levels is carried out by the hemoglobin POCT method. The data of questionnaire from 193 respondents were analyzed by SPSS. A total of 181 respondents (94%) has the habit of drinking coffee every day. A total of 145 respondents who drinking more than 5 cups coffee per day shows Hb levels lower ( $14.3345 \pm 1.42202$ ) than respondents who drinking coffee 1 – 4 cups per day ( $15.1298 \pm 0.32864$ ). Respondents who drinking coffee between 6 – 12 months has higher Hb ( $15.491 \pm 0.293$ ) than respondents who drinking coffee more than 12 months ( $14.381 \pm 0.286$ ). This research shows that respondents who drinking coffee without ingredients added has lower Hb ( $14.2151 \pm 1.36188$ ) than with ingredients added ( $14.7533 \pm 1.90532$ ). The study concluded that the habit of drinking coffee, duration and quantity of coffee, and also the ingredients added have an impact on hemoglobin levels. This study suggested to limit coffee consumption and avoid drinking coffee with meals to enhance the absorption of iron from the nutritional meal.

**Keywords:** Anemia, drinking coffee, types of coffee



D2

[26]

## ADOLESCENT CHILDHOOD EXPERIENCES DURING COVID-19 AND THE ASSOCIATIVE PATTERNS OF ELECTRONIC CIGARETTE USE IN THE UNITED STATES

*Fevrier B.*

Bowling Green State University, United States

**Abstract:** Substance use and mental health issues in adolescence is impacted by adverse childhood experiences (ACEs). Given the increase in ACE exposure and substance use during COVID-19, their impact on e-cigarettes (e-cigs) usage patterns among adolescence (current, frequent “on  $\geq 20$  days,” and daily use in the past 30 days) needed to be examined. Data was analyzed from Adolescent Behaviors and Experiences Survey, an online survey among high school students conducted by the CDC during the spring of 2021. The sample was limited to <18-year-olds (in accordance with ACEs definition), and a composite score (score range=0-7; categorized into 0 “reference,” 1-2, 3,  $\geq 4$ ) of seven ACEs (parental job loss, food insecurity, emotional abuse, physical abuse, electronic bullying, sexual violence, physical dating violence) during the pandemic was calculated. Among respondents of the survey, 12.5% (95% CI: 12.6-15.2), 6.5% (3.5-5.1), and 2.7% (2.6-4.0) reported current, frequent, and daily use of e-cigarettes, respectively. Multivariable regressions indicated that a dose-response relationship between the number of experienced ACEs during the pandemic and current, frequent, and daily use. All models were controlled for poor mental health, socio-demographics, and cigarette smoking. Exposure to ACEs during COVID-19 was independently associated with current, frequent, and daily use of electronic-cigarettes. Interventions aimed at reducing substance use during societal stressors among adolescence, and protecting against adverse experiences is warranted to reduce the use of electronic-cigarettes and possibly other substances.

**Keywords:** Covid-19, electronic-cigarette, substance use, depression, ACEs

D3

[27]

**PRESCRIBING NICOTINE-REPLACEMENT THERAPY IN ACUTE MEDICAL SETTINGS: ASSESSING LEVELS, BARRIERS, AND RELATED FACTORS***Reddy H.*

Mid Yorkshire Teaching NHS Trust, United Kingdom

**Abstract:** Nicotine-replacement therapy (NRT) can almost double a smoker's chances of quitting and staying off cigarettes, with combination NRT more effective than single-product use. Medical professionals are in a prime position to engage smokers, but in practice NRT is not prescribed to all smokers admitted. In this study, an initial survey assessed factors related to prescribing NRT on the acute medical admissions unit, including rates of and barriers to prescribing, awareness and use of combination NRT, and whether an electronic prescribing protocol would be useful. A second survey was then carried out four months after activation of the protocol, to reassess these factors and evaluate whether the protocol was being used. The initial survey demonstrated most respondents (72%) only occasionally prescribed NRT, with major barriers being not knowing what to prescribe (50%), just not considering it (44%), and not knowing how to dose (39%). Over half of respondents were unaware of common side effects, and most (78%) were unaware they could prescribe combination NRT. Almost all respondents (94%) stated a protocol would be useful. The second survey confirmed those who had used the protocol (41%) found it made prescribing NRT more accessible and easier to dose; however, almost half of respondents were unaware of the protocol (despite teaching/posters/email dissemination). Again, most respondents (77%) only occasionally prescribed NRT. Additionally, only a minority of respondents (18%) had prescribed multiple forms of NRT despite the protocol indicating this as an option, though more respondents (64%) were aware of combination NRT relative to the initial survey. Overall, this study demonstrates a lack of regular/consistent NRT prescribing in acute medical settings, including paucity of prescribing combination NRT. Barriers to effective prescribing relate to a lack of knowledge about how to prescribe NRT, a lack of awareness of the protocol, and a general neglect in considering NRT as a viable option for smokers wanting to quit. It is clear there is a need to educate medical professionals to support NRT prescribing and address these barriers, particularly advocating a patch plus a fast-acting form to ensure sufficient nicotine replacement. This will aid in reducing the yearly 8 million tobacco-related deaths worldwide.

**Keywords:** Nicotine-replacement therapy, smoker, prescribing, protocol

D4

[28]

**CURRENT HEALTH IMPLICATIONS OF E-CIGARETTE AND VAPING***Fevrier B.*

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**Abstract:** Electronic cigarettes (e-cigarettes) since its introduction to the US market in 2006, has been extremely popular among youth. It has been mass-marketed as a harmless smoking cessation aid although it has remained a significant public health concern. The current study examined and synthesized the available literature on youth electronic cigarette use and offer a useful resource for families, educators, and clinicians to address persistent questions about the product. A literature search was carried out through three databases (PsycINFO, PubMed and Scopus) and data extracted using key search terms "Electronic Nicotine Delivery Systems," "e-cigarettes," "electronic cigarettes," "vaping," "JUUL," and "e-cigs,". A total of 25 were included in this review. Electronic cigarette (Pod mod) devices such as JUUL have grown in popularity among youth as prevalence rates increase from 1.5% in 2011 to 21% in 2021. Several associated factors were identified including desirable flavors, their user-friendly design as well as its ability to be used in areas where smoking is prohibited. Long-term health effects of electronic cigarettes are not fully known, and youth users are often uninformed about its constituents. E-cigarette use among youth has led to numerous queries and anxieties from educators, public health professionals and clinicians. Increase in e-cigarette use may result in reduced prevalence and reduced disease burden, however apprehensions persist. Research is needed to determine the ultimate public health impact of e-cigarette use, especially among younger users.

**Keywords:** JUUL, e-cigarette, electronic cigarette, vaping, electronic delivery systems

**PAPER SESSION (E)**  
**MENTAL HEALTH AND ADDICTIONS**

E1

[29]

**DEVELOPMENT AND VALIDATION OF PROTOTYPE MOBILE APPLICATION FOR MENTAL HEALTH SCREENING OF POPULATION OF PAKISTAN***Lua P.L.*<sup>1</sup>, Malik M.<sup>2</sup>, Rehman H.<sup>3</sup>, Hussain A.<sup>4</sup>, Hashmi A.<sup>5</sup>, Kazi A.F.<sup>6</sup>, Jamshed S.<sup>7</sup><sup>1</sup>Faculty of Pharmacy, Universiti Sultan Zainal Abidin (UniSZA), Malaysia<sup>2</sup>Hamdard Institute of Pharmaceutical Sciences, Hamdard University Islamabad, Pakistan & CEO, Contract Research Organization, Cyntax Health Projects (Pvt) Ltd<sup>3</sup>Hamdard Institute of Pharmaceutical Sciences, Hamdard University Islamabad, Pakistan,<sup>4</sup>Faculty of Pharmacy, Hamdard University Islamabad, Pakistan<sup>5</sup>Contract Research Organization, Cyntax Health Projects (Pvt) Ltd<sup>6</sup>Director R & D, Contract Research Organization, Cyntax Health Projects (Pvt) Ltd

**Abstract:** Mobile health apps have been identified as promising cost-effective, attractive and useful support tools for screening, diagnosing, treating and promoting awareness regarding anxiety, depression and other mental health issues. The objective of this study was to develop and validate a mental health screening app for the population of Pakistan. A randomized, controlled, double-blind pre-post intervention study design was used. A prototype app was designed to be representative of a generic self-monitoring tool in which respondents monitored their mood, stressors and coping strategies on a day-to-day basis. Anxiety, depression, coping skills, mental health problems and well-being / positivity were assessed through GAD-7, PHQ-9, CSES-26, SRQ-20 and WHO-5. Convenience sampling technique was used to select 200 respondents whereby simple random sampling was later used to assign respondents into Group A (control) and Group B (Intervention). One-hundred respondents were assigned to each group using WHO sample size criteria for intervention. Only respondents in group B were targeted for intervention and had access to the prototype app. The data collected was cleaned, coded and entered into SPSS version 22. Results: The results highlighted that lowest scores for mental health screening were observed in mental health problems (0.39,  $\pm 0.488$ ) followed by anxiety (1.61,  $\pm 1.160$ ) and depression (1.79,  $\pm 1.240$ ) whereas highest scores were detected for well-being and positivity (3.72,  $\pm 1.175$ ). Significant differences ( $p \leq 0.05$ ) were observed among mental health scores between control and intervention groups. Conclusion: Moderately high prevalence of anxiety, depressive symptoms and common mental health issues were found among respondents  $\geq 18$  years in community of Pakistan. However, positivity, well-being and coping skills were better among the community. The intervention applied using mental health screening app was deemed successful as levels of anxiety, depression and mental health problems decreased due to increased awareness and reduced social stigma associated with mental health issues while emotional well-being / positivity and coping skills improved among post intervention group. Usage of this mobile app was rated as acceptable in terms of ease of use, interface and user satisfaction.

**Keywords:** Anxiety, depression, coping skills, mental health, mobile app, well-being and positivity, Pakistan.

E2

[30]

**SMART DEVICE ADDICTION AND ADOLESCENT MENTAL HEALTH DURING COVID ERA: A LARGE-SCALE STUDY IN HANOI VIETNAM***Duy P.Q.<sup>1</sup>, Chi P.T.L<sup>2</sup>, Anh L.H<sup>1</sup>, Quyen B.T.<sup>3</sup>*<sup>1</sup>Hanoi Amsterdam Highschool for the Gifted, Vietnam<sup>2</sup>University of British Columbia, Canada<sup>3</sup>Faculty of Fundamental Science, Hanoi University of Public Health, Hanoi, Vietnam

**Abstract:** The COVID-19 pandemic along with the subsequent lockdown has caused a mass increase in the number of hours spent on smart devices among teenagers. This study examines the situation of smart device addiction and its impact on adolescent mental health in Vietnam during the Covid era. A sample of 5325 high school students aged 11-17 from rural/urban areas of Hanoi was collected using respondent-driven sampling and Google online survey. A short scale consisting of 5 items was used to measure smart device addition (SDA) and GAD-7 was used to measure adolescent stress level. The findings revealed that 22.8% and 7.32% of adolescents experienced moderate and severe anxiety respectively. More than half of the study samples reported to have spent at least 6 hours a day on smart devices. About 32.7% of the study participants exhibited at least three internet addiction indicators. The proportion of adolescents with GAD-7 score  $\geq 10$  (indicating moderate/high level of stress) was 30.1% among all samples. However, this figure was only 19.7% concerning participants with no indicator of SDA and increased to more than 40% when it comes to participants with multiple signs of SDA. Logistic regression model showed that both average daily online time and internet addiction demonstrated a significant dose-response relationship with higher levels of anxiety, controlling for other factors such as gender, family experiencing economic difficulties, or exposure to domestic violence. Excessive and uncontrolled use of smart devices showed an association with a higher risk of mental health issues. Families and schools need to take steps to encourage a balanced and healthy use of smart devices among adolescents. The provision of mental health support can be beneficial for adolescents who are struggling with device dependency and its impact on their mental well-being.

**Keywords:** Smart device addiction, Covid-19, adolescents, stress, GAD-7, Vietnam, internet addiction

E3

[31]

### SATISFACTION OF THE ADOLESCENTS REGARDING HEALTH SERVICES OF ADOLESCENT FRIENDLY HEALTH CORNERS

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**Abstract:** Adolescents are vulnerable group of people of population of a community. They have more curiosity but parents do not feel comfortable discussing Sexual and Reproductive Health (SRH) issues with their adolescent children. School also do not provide any information on Sexual and Reproductive Health (SRH). Adolescent have little or no access to Sexual and Reproductive Health (SRH) related services and often face difficulty in getting information and guidance regarding these issues. This study aimed to assess the level of satisfaction of adolescents regarding health services from Adolescent Friendly Health Corners. A descriptive cross-sectional study was conducted among 384 adolescents at adolescent friendly health corners in Maternal and Child Welfare Centre, Thakurgaon Sadar and Union Health and Family Welfare Centre (UHFWC) Ganginapara Union, Horipur Upazila, Thakurgaon, Bangladesh from 1<sup>st</sup> January 2022 to 1<sup>st</sup> December, 2022. Non-probability purposive sampling technique was used. Data was collected by face-to-face interview through a pretested, semi-structured questionnaire. Statistical analysis was performed by SPSS 25. Statistics were presented in frequency, mean, percentage, chi-square test. A value of  $p < 0.05$  was considered statistically significant. Among 384 adolescents 191 (49.7%) respondents were in age group between 12 to 15 years and 193 (50.3%) respondents were in age group between 16 to 19 years. Mean ( $\pm$ SD) age of the respondents was  $15.53 \pm 1.77$ . Majority of the respondents 344 (90%) were currently studying and 44 (10%) of the respondents were not studying. Majority of the respondents 235 (61.2%) told that they knew about Adolescent Friendly Health Corners and the rest of the respondents 149 (38.8%) told that they did not know about Adolescent Friendly Health Corners (AFHCs). On average overall 15.97% respondents were dissatisfied, 55.1% respondents were satisfied and remaining respondents (28.9%) either dissatisfied nor satisfied. Adolescents' period is hazardous for adolescent health due to lack of proper guidance & counselling. Family has a crucial role to avail SRH services from AFHCs. We have to ensure safe, securer & supportive environment for adolescents. Positive efforts required to make health services friendlier & to increase satisfaction level. Implementation of standard guidelines, proper training, regular assessment, awareness development & encouraging attitude developed among family, parents & health workers will translate into positive changes.

**Keywords:** Adolescents, satisfaction, AFHCs, health services, sexual and reproductive health service.

E4

[32]

**ROLE OF PHARMACIST IN DEVELOPMENT AND VALIDATION OF MOOD DISORDER SCREENING APP FOR POPULATION OF PAKISTAN***Lua P.L.*<sup>1</sup>, Malik M.<sup>2</sup>, Khadim S.<sup>3</sup>, Hussain A.<sup>4</sup>, Hashmi A.<sup>2</sup>, Jamshed S.<sup>1</sup><sup>1</sup>Faculty of Pharmacy, Universiti Sultan Zainal Abidin, Terengganu, Malaysia<sup>2</sup>Cyntax Health Projects, Contract Research Organization & Corporate Firm, Islamabad, Pakistan<sup>3</sup>Hamdard Institute of Pharmaceutical Sciences, Hamdard University Islamabad, Pakistan<sup>4</sup>Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology, Pakistan

**Abstract:** Mood disorders are often under-diagnosed. The objective of this study was to assess the role of pharmacist in utilizing a mood disorder screening app for population of Pakistan. A prototype app was developed for screening with different tools such as Mood Disorders Questionnaire, Hospital Anxiety and Depression Scale and mHealth App Usability Questionnaire embedded in it and various awareness videos on mood disorders. Convenience sampling was used to select 200 respondents to screen for mood disorders. Those with positive indicators of mood disorders were subjected to intervention (n=110), while those in whom mood disorders were absent were assigned to control (n=90). Both groups downloaded the app and used embedded tools for cognitive behavioral therapy (CBT). Respondents in intervention group were requested to view the embedded awareness videos along with special counselling provided by the pharmacists-cum-data collectors. Those in the control group were not given access to these features and did not receive any counselling. Results: The mean score of depression (9.04, ± 0.962), mood (19.86, ± 2.79) and resilience (32.49, ± 3.51) improved after CBT intervention in respondents using the full app. Significant differences were observed (p<0.05) in pre-post intervention, depression, and resilience scores. Depression and resilience among respondent's improved after CBT. Conclusion: The intervention applied using mood disorder screening app was found to be beneficial as the levels of anxiety, depression and mood-related problems were lowered due to increased awareness and reduced social stigma associated with mood disorder issues. Resilience also improved among post intervention group after CBT intervention.

**Keywords:** Mood disorders, mobile app, digital health, screening, Pakistan



E5

[33]

**THE POST-PANDEMIC MENTAL HEALTH WAVE***Grech P.*, Sammut A., Azzopardi A.

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**Abstract:** During the Covid-19 pandemic, mental health challenges constituted a parallel peak to physical health difficulties. In Malta, research undertaken during the acute stages of the pandemic identified changes in mental well-being that were of concern. Currently, the population is progressing to ‘a new normality’. Whilst the encouragement to adapt is commended, the mental health nuances experienced during the pandemic and in the face of a changed reality following the pandemic, need to be addressed. This paper will navigate around these needed changes in the local context but which are undoubtedly applicable globally, in view of the commonality in some of the challenges resulting from the pandemic across different countries. This paper shall localise four mental well-being areas which have been identified through a review of local research efforts over the past two years – these are areas which are of utmost priority in terms of their effect on the nation’s post-pandemic mental well-being. These areas, namely anger, loneliness, social media access and mental health at the workplace, shall be explored against a backdrop of international literature in order to shed further light on the depth and complexity of their effect on well-being. Following this analysis, recommendations outlining a call-to-action in this sector shall be postulated. In view of the four Mental Health-related priority areas that have been described in this paper, a number of recommendations are being postulated, highlighting the urgent need of a post-pandemic call-to-action in relation to mental well-being.

**Keywords:** COVID-19, mental health, mental well-being, mental health awareness, call-for-action

E6

[34]

**APPLICATION OF SOCIO-ECOLOGICAL MODEL IN ASSESSING RISK AND DEVELOPING PREVENTIVE STRATEGIES AGAINST SUICIDE AMONG YOUTH***Manaf R.A., Zulkipli S.H.*

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**Abstract:** Suicide is recognized as an important public health concern, as it is the second leading cause of death among young people. Understanding the risk factors for suicidal behaviours among young people is important to inform the development of preventive strategies. While various contextual models have been used to guide the intervention, the Socio-ecological model (SEM) is deemed the most suitable framework for explaining factors contributing to suicidal behaviour which is multifactorial and shaped by a combination of individual characteristics, social and physical environments, cultural factors, and policies interacting with one another. This paper aims to identify factors associated with suicidal ideation and suicidal attempt among young people, guided by the SEM model, and eventually develop its preventive strategies. This paper has two parts. The first part is a scoping review of the factors associated with suicidal ideation and attempt among young people. The search was conducted in Pubmed, Scopus, and PsycInfo. The second part is the development of preventive strategies according to the identified factors. Both parts will be guided by the SEM model. A total of ten studies with 45,278 participants that matched the criteria are included in this review. Results showed that the risk factors for suicidal ideation among young people are being female, having psychiatric illness, psychological problem, smoking, alcohol intake, victim of abuse, bullied, and food insecurity. The preventive strategies include policy, mental healthcare services, awareness programme, and teaching them on coping strategies. More epidemiological studies are needed to evaluate the risk factors of suicide that are unique to young people, such as help-seeking behaviour and available mental healthcare services. Suicide prevention requires concerted effort of policymakers, healthcare services, community and individual; thus, SEM framework is suitable as a guidance for suicide prevention.

**Keywords:** Suicidal attempt, suicidal ideation, suicide, young people, socio-ecological model

E7

[35]

**POTENTIAL IMPACT OF GREAT LOCKDOWN ON STUDENTS' KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS THE COVID-19 OUTBREAK***Berekaa M.*, Eltigani E., Almosalem M., Alsahli K., Aljassim M.

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**Abstract:** Despite variation in types of COVID-19 vaccines and genetic variation in the SARS-CoV-2 genome, using preventive measures remains first priority to reduce risks associated with COVID-19 infection. Current cross-sectional study highlights students' knowledge, attitudes, and practices toward SARS-CoV-2 infection during lockdown. The study was conducted at IAU University, Saudi Arabia. Data was collected from preparatory students via online questionnaire. Knowledge level was determined using mean scores, while chi-square and t-tests were performed to detect significant differences between groups. Males aged 17–20 years displayed better knowledge regarding COVID-19 ( $t = 2.03$ ,  $p = 0.049$ ). Most participants recognized the typical symptoms and transmission routes; 93% indicated they viewed social distancing as a crucial preventive measure. Following lockdown, a 1.7-fold increase in the number of participants who believed that mask-wearing was an effective preventive measure was observed; however, 37.2% did not trust this practice. There was a 2.2-fold increase in the number of participants who took part in awareness programs during lockdown. Students' knowledge increased from 73.2% to 81.5% following the lockdown. Specifically, mean knowledge regarding the role of contaminated tools in disease transmission increased from 33.7% to 75.5%. After lockdown, 58.1% of participants were anxious and afraid of having contact with their colleagues, while 39.5% missed their classes due to anxiety. Two sources of information impacted students' knowledge following the lockdown: university studies ( $t = 2.149$ ,  $p = 0.038$ ) and friends ( $t = 2.6$ ,  $p = 0.013$ ). The findings suggest that IAU preparatory-year students have acceptable knowledge, awareness, and attitudes towards COVID19 infection. The study reflects impact of media on improvement in preventive measure uptake. Knowledge of the pandemic may increase if health education programs are designed to target students.

**Keywords:** COVID-19 pandemic, preparatory-year students, perception, non-pharmaceutical intervention, knowledge, attitudes, behavior

E8

[36]

## UNLEASHING EMPOWERMENT: CRAFTING AN INTERNET ADDICTION AWARENESS TRAINING MODULE FOR SCHOOL COUNSELORS

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**Abstract:** Internet addiction among school students became more apparent nowadays upon total school reopening after the online learning experience during the COVID-19 pandemic. Problematic internet usage can lead to adverse personal health effects, such as eyesight impairment, anxiety and depression, and social hostility. School counsellors faced challenges in delivering effective education and advice to students, with limited time and resources and a lack of professional development opportunities. To address these issues, this action research study aims to create and test an Internet addiction awareness training program for school counsellors and assess its usefulness in improving their knowledge and skills in delivering the module to students. The study was conducted in three phases: (1) Development of the education module; (2) Implementation of 3 main modules on personal privacy, problematic internet usage, and cyber smart through physical training sessions for school counsellors; and (3) Evaluation of the effectiveness of the module using pre- and post-module surveys and qualitative feedback. Data was analyzed descriptively in mean score and analytically by paired t-test using SPSS version 29. A total of 26 school counsellors from 11 secondary schools attended the training session and showed significant improvement in knowledge [ $t(25) = 3.35, p = .003$ ] and skills [ $t(25) = 2.89, p = .008$ ]. The training module effectively increased school counsellors' practice of delivering it to 310 school students, enhancing their capacity to deal with Internet addiction issues in secondary schools. All participating counsellors were satisfied with the program, and 80.6% suggested implementing a similar one in other schools. These findings have significance for establishing evidence-based training programs and policy measures to combat the growing problem of Internet addiction among school kids.

**Keywords:** Digital addiction, youth, empowerment, awareness module

E9

[37]

**THE DEVELOPMENT OF THEORY-BASED HEPATITIS C HEALTH  
EDUCATION INTERVENTION MODULE FOR OPIOID REPLACEMENT  
THERAPY CLIENTS IN MALACCA**

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**Abstract:** Hepatitis C had been recognized by World Health Organization as major public health problem contributing to approximately 399000 deaths annually mainly from cirrhosis and hepatocellular carcinoma. In 2019, only 21% from estimated 58 million chronic hepatitis C patient was diagnosed and only 13% was treated. Thus, high-risk groups such as ex-drug user enrolling in opioids replacement therapy program should be targeted for the hepatitis C health intervention to increase their willingness for hepatitis C treatment. This paper aims to describe and discuss the development of theory-based hepatitis C health education intervention module to increase willingness for hepatitis C treatment among opioids replacement therapy clients. The development of intervention module in this study follows the Sidek's module development model which comprises of several important steps to ensure development of high-quality intervention module. Based on need analysis of module using Fuzzy Delphi method, experts agree that there is a lack of hepatitis C awareness and willingness for treatment among opioids replacement therapy clients. In addition, experts agree that there is a need for development of theory-based intervention module and factors based on construct of the theory of planned behavior and hepatitis C knowledge are important to be intervened to increase willingness for hepatitis C treatment. Thus, it is important to adopt a framework to guide module development to ensure a high-quality module aiming to achieve the desired study objective being produced.

**Keywords:** Hepatitis C, opioids replacement therapy, module development

**PAPER SESSION (F)  
HEALTH WORKERS**

F1

[38]

**COGNITIVE, AFFECTIVE AND PSYCHOSOCIAL BURNOUT AMONG SMALL HOSPITAL HEALTHCARE WORKERS DURING COVID-19 PANDEMIC**

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**Abstract:** This study examines the nature and extent of healthcare workers' burnout during the height of the COVID-19 pandemic in a small town north of Sarawak Borneo. Using a narrative inquiry methodology, six healthcare workers were interviewed to capture their lived experiences and challenges through online and physical meetings. A thematic analysis revealed several cognitive, affective, and psychosocial factors that caused the long-term stress exacerbated by the pandemic. Respondents suggested improvements for any future scenarios in which sensitivity toward the needs of healthcare workers could be elevated to ensure their health and safety, knowledge of diseases and access to relevant support are put at the forefront of decision-making by the hospital's human resource management. The study provides a crucial perspective on small hospitals' reliance on decisions and provisions by upper management in bigger cities to execute their daily tasks, in which delays and limited resources escalate the long-time stress leading to burnout.

**Keywords:** Healthcare workers, burn out, hospital management, support

F2

[39]

## CHOICE AND DECISION MAKING IN RESIDENTIAL AGED CARE: A PERSPECTIVE FROM RESIDENTS AND PERSONAL CARE ATTENDANTS

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**Abstract:** This study investigates how choice and decision-making affect the quality of life for residents in Australian aged care facilities. The ability to make choices and decisions is a concept we all take for granted. However, this may not be the reality for some people living in residential aged care in Australia (McCabe et al., 2021) despite the introduction of the new quality and safety standards post 1 July 2019, of which choice is the foundation standard (Aged Care Quality and Safety Commission, 2021). 13 in-depth qualitative interviews were conducted with people who have capacity and live in residential aged care in Australia. Staff focus groups and observations were conducted on-site. Interviews were recorded, transcribed, and thematically analyzed (Walker & Paliadelis, 2016). The analysis identifies three emergent themes that play a crucial role in residents' experiences of choice and decision-making in residential aged care. These themes are staff attitude, individual health issues, and a sense of powerlessness for residents and staff. This study acknowledges diverse resident perspectives on powerlessness and uncovers that powerlessness often starts with professionals and families deciding to move to care, not residents. The terms "independence" and "freedom" were frequently used to represent choice and decision-making, rather than more familiar terms like "respect" and "dignity," and staff attitude, rather than staff availability, emerged as the most significant barrier to choose and decision-making from the residents' perspective. The results reveal shared themes of choice and decision-making between residents and careers, albeit with different viewpoints. Residents identified staff attitude as the main obstacle, not the time spent with staff. In contrast, staff cited limited resources as the primary barrier to facilitating resident choice and decision-making. Recommendations are; improving staff training and fostering a culture of respect for resident autonomy is crucial for enhancing the quality of care in aged care settings, adequate resource allocation, including staff and time, is essential to effectively support and fulfill residents' individual choices and preferences, empowering residents, involving them in decision-making, and implementing regular feedback mechanisms are fundamental for promoting resident autonomy and well-being in residential aged care. Relevance to clinical practice: The results have implications for improving the provision of aged care services, guiding education and training for staff, informing policymaking, and enhancing governance in the field of aged care.

**Keywords:** Activities of daily living, aged, caregivers, choice behaviour, decision making, personal autonomy, quality of life



F3

[40]

**PROTECTING OUR FRONTLINE HEROES: STRATEGIES FOR SAFEGUARDING HEALTH WORKERS DURING COVID-19 PANDEMIC***Chong D.W.Q.<sup>1,2</sup>, Ng C.W.<sup>2</sup>, Rampal S.<sup>2</sup>*<sup>1</sup>Centre for Health Services Research, Institute for Health Systems Research, National Institutes of Health, Ministry of Health Malaysia<sup>2</sup>Centre for Epidemiology and Evidence-based Practice, Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, Malaysia

**Abstract:** Given that hospitals are dependent on the actions of health workers under duress, healthcare managers and decision-makers need to identify strategies to support and sustain health workers in responding to large-scale health events, such as the COVID-19 pandemic. Using a qualitative case study approach, this study explored how a public tertiary teaching hospital in Malaysia protected its health workforce during the COVID-19 pandemic (January 2020 to April 2021). Purposive sampling was applied, and in-depth interviews were conducted with six hospital managers and 11 healthcare professionals using a semi-structured interview guide. They were chosen based on their roles and involvement in the hospital's COVID-19 response. Document reviews were also conducted. Thematic analysis was performed based on two thematic axes: strategies to protect health workers and resilient stages (anticipation, coping and adaptation). During the pandemic, UMMC implemented three workforce strategies: strengthening infection prevention and control measures, communicating and supporting health workers' information needs, and safeguarding health workers through public health measures. These strategies were implemented based on the hospital's capacities to anticipate, cope and adapt to challenges in protecting the health workforce. This study highlights the crucial role of healthcare managers and decision-makers in identifying and implementing effective strategies to protect and sustain health workers during the COVID-19 pandemic. The lessons learned from this study offer valuable insights that can inform future pandemic response efforts and enhance the safety and support of health workers.

**Keywords:** COVID-19, resilience, hospital strategies, health workforce, healthcare systems, Malaysia

## **ABSTRACTS OF POSTER PRESENTATIONS**

P1

[41]

## RISK FACTORS ASSOCIATED WITH NON-COMMUNICABLE DISEASES AMONG TEA GARDEN WORKERS

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**Abstract:** Common risk factors such as modifiable and non-modifiable risk factors are long associated with the development of non-communicable diseases. NCDs account for 61% of the total disease burden. A national NCD risk factor survey was done in 2010 that showed 99% of the survey population had at least one NCD factor. A third of the population in Bangladesh (218 million) would be over 60 years by 2050 which guarantees a high dependency ratio and high NCD burden in the future too. More than 160 million people in Bangladesh are living with non-communicable diseases (NCDs). NCDs contribute to 67% (NCD Country Profile, 2018) of the total deaths in Bangladesh (1st National NCDs Conference in Bangladesh, 2022). The aim of this study was to determine risk factors associated with non-communicable diseases among Tea Garden Workers. To determine the Risk factors associated with NCDs Among Tea Garden Workers. This descriptive cross-sectional study was done among tea garden workers. Sample size was 390. Data was collected by face-to-face interview through a pretested, semi-structured questionnaire. Total respondents of our study were 206. Among them 74.76% were female and mean age was 39.41±11.45. About 63.1% had no formal education. Approximately 55.9% was normotensive, 33.5% was pre-hypertensive, 9.2% was hypertensive stage 1, 3% was hypertensive stage 2. In this study, it was found that 53.4% having normal weight, 23.2% underweight, 3.4% overweight. Determination about risk factors of NCDs to tea garden workers lead to reduce the burden of NCDs globally and help to prevent development of non-communicable diseases from early age of life.

**Keywords:** Non-Communicable Diseases (NCDs), risk factors, tea garden workers, Bangladesh

P2

[42]

## EFFECT OF COFFEE DRINKING HABIT TO THE BLOOD PRESSURE AND HEMOGLOBIN LEVELS – A PRELIMINARY STUDY ON WOMEN OF CHILDBEARING AGE IN THE NGADIPURO HAMLET

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**Abstract:** The Tengger people, especially women, have a habit of drinking coffee and it has become a daily habit. Coffee is often associated with risk factors for diseases in the community such as anemia and hypertension. The purpose of this study was to determine the effect of coffee drinking quantity (1-2 cups, 3-4 cups, and  $\geq 5$  cups of coffee per day) on hemoglobin levels and blood pressure. This study is a quantitative study with a cross-sectional study design. The population of this study was women of childbearing age (15-49 years) in Ngadipuro Hamlet, Tengger, East Java, Indonesia. The number of samples in this study was 193 respondents with the sampling technique, namely random sampling technique. Analysis of the quantity of coffee drinking on hemoglobin levels using the annova test while on blood pressure using the kruskal wallis test through SPSS software. The results showed that the quantity of coffee per day on hemoglobin levels had a significance value of 0.000 ( $<0.05$ ). While the quantity of coffee per day on blood pressure has a significance value of 0.361 ( $>0.05$ ). So, it can be concluded that drinking 1-2 cups of coffee, 3-4 cups, and  $\geq 5$  cups of coffee per day simultaneously affects hemoglobin levels. In this case, the more quantity of coffee per day, the lower the hemoglobin level. However, the quantity of coffee had no significant effect on blood pressure.

**Keywords:** Blood pressure, coffee, hemoglobin level

P3

[43]

### CHARACTERISTICS, BEHAVIOR AND HABITS TOWARDS PREVENTION ANEMIA IN NONGKOJAJAR'S COMMUNITY

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**Abstract:** One of the global health problems experienced by developing and developed countries is anemia. Anemia in pregnant women is at risk of having stunted children. The purpose of the study was to identify factors that influence anemia in productive-age women in Nongkojajar Hamlet. This type of research is quantitative analytic with cross-sectional design. The population of this study were women of productive age in Nongkojajar Hamlet. The sampling technique amounted to 160 respondents using a random sampling technique. The data obtained were analyzed using SmartPLS software (v3.2.9). The results of this study are the characteristics variable on anemia has a t-statistic value of 4.247. The habit variable on anemia has a t-statistic value of 2.233. While the behavior variable on anemia has a t-statistic value of 1.021. This study concludes that characteristics and habits have an effect on anemia, while behavior has no effect on anemia.

**Keywords:** Anemia, behavior, characteristics, habit

P4

[44]

## EFFECT OF COVID-19 OUTBREAK ON THE CARDIO-CEREBROVASCULAR RISK IN KOREAN MALE SHIPYARD WORKERS

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**Abstract:** Cardio-cerebrovascular disease is a global public health issue. Various countries conducted quarantine measure against COVID-19. Many reported the increase of cardio-cerebrovascular disease risk in their population due to such regulations. Korean population also experienced the huge changes in their lifestyle from the preventive measures. We compared the regular medical check-up results of consecutive male shipyard workers in 2019 and 2021 to determine whether the risk of developing cardio-cerebrovascular disease increased after the COVID-19 pandemic in Korea. Compared to 2019, the ratio of the workers who received medication for hypertension, diabetes, dyslipidemia and heart disease increased significantly in 2021. Furthermore, their BMI, waist circumference, systolic blood pressure, diastolic blood pressure, fasting blood sugar, total cholesterol, and low-density cholesterol showed tendency to increase, which was statistically significant. This clearly shows that cardio-cerebrovascular risk increased in the male shipyard workers. We state that Korean government should consider the increase of cardio-cerebrovascular risk due to the preventative measures of COVID-19 when establishing public health policies. Moreover, the future quarantine guidelines must be revised to lower the global prevalence of cardio-cerebrovascular disease.

**Keywords:** COVID-19, quarantine, cardiovascular disease, cerebrovascular disease

P5

[45]

**OVERVIEW OF THE PHYSICAL COMPONENTS OF HOUSES,  
ENVIRONMENTAL SANITATION FACILITIES, AND PRO-ENVIRONMENTAL  
BEHAVIOR IN FISHERMEN'S FAMILIES IN MUARA SIBERUT, MENTAWAI  
ISLANDS, INDONESIA**

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**Abstract:** This study aims to determine the physical components of houses, environmental sanitation facilities, and pro-environmental behavior in fisherman families in Muara Siberut Village, Mentawai Islands Regency. Ninety-eight fishermen's families were used as respondents, who were selected systematically and randomly. The physical components of the house that are assessed are floors, walls, living room windows, bedroom windows, ventilation, ceilings, and kitchen smoke holes. Environmental sanitation facilities include clean water sources, latrines, wastewater disposal facilities, and garbage disposal sites. Pro-environmental behavior includes waste disposal methods, disease vector control, the habit of wearing footwear, the habit of opening windows, and cleaning the yard. The results showed that 44.9% of the physical components of fishermen's family houses in Muara Siberut were not good (the score obtained is less than the average score), 39.8% of families had poor environmental sanitation facilities (the score obtained is less than the average score), and 38.8% of fishermen's families had poor pro-environmental behavior (the score obtained is less than the average score). Nearly half of the environmental health of fishing families in Muara Siberut, Mentawai Islands Regency, is in the unfavorable category (score is less than the average score). It is recommended that the regional government provide environmental health education related to housing environmental health and pro-environmental behavior and provide a stimulus for environmental sanitation facilities that meet health requirements for fishermen families in Muara Siberut.

**Keywords:** House, sanitation, pro-environmental, behavior, fisherman family

P6

[46]

**ASSOCIATION BETWEEN DAILY MINIMUM TEMPERATURE AND INCIDENCE OF ACCIDENTAL HYPOTHERMIA AND COLD-RELATED MORBIDITY: FROM THE NATIONAL EMERGENCY DEPARTMENT-BASED COLD-WAVE SURVEILLANCE**

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Republic of Korea

**Abstract:** Cold weather is associated with higher the incidence of accidental hypothermia and cold-related morbidities such as frostbite. We analyzed the association between daily minimum temperature and incidence of cold-wave related morbidities and mortalities from data collected from the national ED based cold-related illness surveillance system. A retrospective analysis using a National Emergency Department-based Cold-wave Surveillance System database in Korea was designed. All patients with accidental hypothermia and cold-related local injury from December 2013 to February 2021 were included. The main exposure was daily average minimum temperature which was obtained from Korean Meteorological Administration. The main outcomes were incidence of accidental hypothermia and localized cold-related injury. The piecewise Poisson regression analysis was used to estimate the incidence rate ratio (IRR) for accidental hypothermia and cold-related local injury according to daily minimum average temperature. A total incidence of 2,744 accidental hypothermia and 721 local cold-related injuries were reported to the surveillance system during study period. Effect of average daily minimum temperature on incidence of accidental hypothermia was relatively consistent throughout the temperature (IRR: 1.10 (95% CI: 1.09 – 1.11) per 1°C decrease in daily minimum temperature). However, for localized cold-related injury, the incidence risk ratio spike below average daily minimum temperature of -11 °C (IRR (95% CI) for average daily minimum temperature above -11 °C: 1.26 (1.23-1.29) per 1°C decrease and for average daily minimum temperature below -11 °C: 1.53 (1.44 – 1.64). A significant association was shown between average daily minimum temperature and incidence of accidental hypothermia and local cold-related injuries.

**Keywords:** Cold-wave, health surveillance, Hypothermia, temperature



P7

[47]

## EMPATHY LEVEL AMONG THE HEALTHCARE PROFESSIONALS IN SINGAPORE

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**Abstract:** The aim of the study was to measure the empathy level of healthcare professionals in Singapore. An anonymous online survey questionnaire was conducted using Jefferson scale of empathy from July 2019 to January 2020. The total score and the different components of Jefferson scale of empathy including Perspective Taking, Compassionate Care and Walking in Patient's Shoes were calculated and compared among the different clinical groups. The survey was completed by 4,188 healthcare professionals from clinical groups (medical (n=569), nursing (n=3032), allied health (n=587)) out of 9348 of target survey population, with a response rate of 44.8%. The study revealed a mean empathy score (SD) of 103.6 (15.59) for the whole cohort. The mean empathy score (SD) was 112.3 (14.67), 101.3 (15.18) and 107.0 (14.99) respectively for the medical, nursing, and allied health group; these were statistically significantly different among the groups ( $p < 0.0001$ ). When the different components of Jefferson scale of empathy were analyzed, nursing group had the lowest scores in all components. Singapore healthcare professionals appear to have lower empathy compared to those from the western countries. Among the different groups of healthcare professionals in Singapore, nurses have lower empathy compared to doctors and allied health professionals. Further research on the underlying causes should be undertaken and measures to improve the empathy level among Singapore healthcare professionals in particular nursing staff should be explored.

**Keywords:** Empathy, healthcare professionals, medical, nursing, allied health

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**CHILD-FRIENDLY SPACE (QUALITY IMPROVEMENT PILOT PROJECT)***Ali M.*

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**Abstract:** The Child-Friendly Space (CFS) project in Medani emerged as a response to the Sudanese war's impact on families and children. This initiative aims to create protected environments where children can regain their laughter and playfulness amidst adversity. The project recognizes the importance of routine and stability for children's recovery. Its objectives include developing age-appropriate activities, empowering children, ensuring their safety, and promoting their well-being. The project's methodology involves collaboration between the British Sudanese Doctors of Paediatric and Child Health and the Sudanese psychological organization, Al-Jazeera Project. Interventions include financial support, collaboration with non-profit organizations, expanding the network, and providing virtual resources to establish Child-Friendly Spaces. In conclusion, the Child-Friendly Space in Medani is a groundbreaking quality improvement project committed to aiding children in healing from the scars of war. Although significant progress has been achieved, ongoing efforts are necessary to secure a safe haven for these children.

**Keywords:** Child-friendly space, Sudanese war, children's well-being, collaborative methodology, healing and recovery

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## ADOLESCENTS AND HAPPINESS DURING A PERIOD OF ECONOMIC CRISIS IN SRI LANKA

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**Abstract:** Happiness has recently been discovered to be an important aspect of economics, public policy, psychology, and health. Being happy as adolescents leads to better health outcomes in adulthood. Economic downturns, which adversely affect the happiness of adolescents thus threaten their long-term physical and mental well-being, presenting a potential public health challenge in future. Despite being through a severe socioeconomic crisis, local studies focusing on the above subject are still minimal. To assess happiness among a group of school-going adolescents and describe its association with selected contributory factors and ongoing financial crisis in the country. A cross-sectional study was conducted among 324 systematically recruited schoolchildren aged 13-15 years, studying in national schools of a selected education zone. A pre-tested self-administered questionnaire was utilized to assess the sociodemographic factors, happiness, and economic hardships experienced by adolescents during the peak of the economic crisis. Happiness was assessed by the culturally validated Subjective Happiness Scale, a seven-point Likert scale. Most participants were females (58.64%, n=190). Males and females were equally happy, with a mean happiness score of 5.43 (SD=1.055). Adolescents whose parents were better educated and had higher, stable incomes were lesser affected by the financial crisis than those whose parents were less educated and lacked financial security ( $p<0.05$ ). A significant negative correlation was observed between the extent of economic hardships experienced by adolescents and their happiness ( $\beta=-0.293$ ,  $R^2=0.086$ ,  $p<0.001$ ). The sample of adolescents was generally happy. However, effects of the economic crisis were negatively associated with subjective happiness among adolescents.

**Keywords:** Happiness, adolescent happiness, economic crisis, Sri Lankan economic crisis

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**FRUIT AND SUGAR-SWEETENED BEVERAGES CONSUMPTION AND RELATED FACTOR OF ANXIETY OF ADOLESCENTS IN PANDEMIC COVID-19: AN ONLINE SURVEY IN INDONESIA**

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**Abstract:** The COVID-19 pandemic influences Adolescent's mental health and will change food habits and eating behavior. However, the association between anxiety, stress, depression, and food habits during the COVID-19 pandemic among adolescents was well less documented. This study aimed to determine the association between fruit, vegetable, and sugar-sweetened beverages (SSB) consumption and adolescent anxiety levels. Adolescents aged 15-18 (n=430) completed an online survey including socio-demography, eating habits, and snacking patterns. Dietary intakes were assessed using a validated food frequency questionnaire. The mental health problems were self-reported on DASS-21. Multinomial logistic regression analysis examined the association between food and sugar-sweetened beverages consumption and anxiety. The results showed that overall, 42.8% responded to having anxiety from mild to severe, 24.4% had experienced stress symptoms, and 35.4% had depression in the past weeks. Fruit and vegetable consumption was less than five servings per day, and no significant difference in anxiety and stress levels. The frequency of consumption of soda, coffee, tea, isotonic, milk, and fruit juice was higher and associated with anxiety levels among adolescents. Female adolescents were more likely to consume sugar-sweetened beverages than males. The study found that adolescents need more fruit and vegetables, less SSB, and access to nutrition and health promotion programs emphasizing stress management and healthy eating behaviors.

**Keywords:** Anxiety, adolescent, fruit, sugar-sweetened beverage, Covid-19

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**EFFECT OF FEAR ON ANXIETY SYMPTOMS IN HOSPITAL EMPLOYEES  
DURING THE COVID-19 PANDEMIC: INTERPERSONAL SENSITIVITY AS THE  
MODERATOR**

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**Abstract:** Fear of becoming infected was frequently cited as an occupational risk among hospital staff during the COVID-19 pandemic (Belen, 2022; Koh, 2020). Researchers in the United Kingdom have found that fear of COVID-19 can influence people's anxiety (Waite et al., 2022). Due to the heavy workload of preventive measures and emergency work, hospital staff had to face the fear firsthand and suffered from stress. Due to the prolonged lockdown, interpersonal sensitivity could be crucial for Chinese people as it may contribute to their anxiety (Ou et al., 2021; Xu et al., 2022). To enrich the study between fear, interpersonal sensitivity, and anxiety, we hypothesized that fear would be positively associated with anxiety, and interpersonal sensitivity would moderate this association. Participants were 421 employees of a hospital in Guangzhou, China (June 2019 - July 2023), using the Symptom Checklist-90-Revised. On average, participants were 25.33 years old (SD = 5.00; range: 18-57). A hierarchical multiple regression analysis was performed using SPSS 28. Results showed a significant positive interaction between anxiety and interpersonal sensitivity ( $\beta = 0.30, p < 0.01$ ) and a main effect for fear on anxiety ( $\beta = -0.29, p < 0.05$ ). Regardless of the moderation, fear was positively associated with anxiety ( $\beta = 0.72, p < 0.01$ ). Further studies, including hospitals in different regions, are needed for more generalizable results. Overall, this study highlights the need for hospitals to pay attention to the work-life balance and mental/physical well-being of their employees to ensure job performance and mental health.

**Keywords:** Interpersonal sensitivity, anxiety, fear, COVID-19, hospital employees, Chinese hospital

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## A SURVEY OF MEDICAL STUDENT ATTITUDES ON THE COVID-19 VACCINE AND VACCINE EDUCATION

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**Abstract:** Physician advocacy is an important factor in population vaccination rates. This study sought to understand COVID-19 vaccine hesitancy within a medical student population. An anonymous 28 question web-based survey was created, validated, and distributed to one medical school in 2022. Sections included demographics and a likert scale on opinions towards the vaccine. A Pearson's chi-square test was conducted. In 244 of 640 responses collected, 97.9% received at least one COVID-19 vaccine. 93% believed that at least one of the vaccines was effective in preventing serious diseases. Approximately 33.3% expressed concerns over side effects and were more likely to be unvaccinated ( $p=0.0014$ ). Unvaccinated students were more inclined to believe that acquiring natural immunity was preferable to vaccination ( $p<0.0001$ ). About 25.1% reported not receiving sufficient education about vaccines, and only 12.4% listed medical school curricula as their most trusted source of vaccine information. 16.9% did not believe that being vaccinated protects others from getting sick, and 66.7% supported vaccine personal choice, with males believing this more than females ( $p=0.0046$ ). 8.6% would not encourage patients to receive the COVID-19 vaccine, and 8.2% were not comfortable discussing patients' concerns. Unvaccinated students were more likely not to encourage patients to receive the vaccine ( $p<0.0001$ ). 99.2% perceived it to be their responsibility to learn about vaccine safety and question COVID-19 vaccine safety and efficacy (91%). Despite high compliance, there were statistically significant rates of vaccine hesitancy among medical students. Expanded medical education through a robust and reliable curriculum is recommended.

**Keywords:** Vaccine, COVID-19, hesitancy, medical students, education, medical education

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**ADVANCING ACCESS TO SEXUAL AND REPRODUCTIVE HEALTH: THE PATH TO OVER-THE-COUNTER ORAL CONTRACEPTIVE PILLS IN THE US***Nguyen B.*, Jiang M.

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**Abstract:** Sexual and reproductive health has become contentious, especially following the 2022 US Supreme Court's overturning of *Roe v. Wade*. Numerous states have imposed abortion restrictions, raising concerns about birth control access. However, a significant milestone was achieved on July 13, 2023, with the FDA's approval of the US's first over-the-counter (OTC) oral contraceptive pill (OCP). The norgestrel-based Opill by HRA Pharma will be available in physical and online stores starting 2024.<sup>1</sup> To assess the interest and effectiveness, we analyzed PubMed and Google Scholar articles, focusing on progestin-only pills (POPs). Despite considerable interest, accessing OCPs remains challenging, with one study indicating 45% of respondents encountered obstacles, while 67% expressed interest in using OTC OCPs.<sup>2</sup> A 2015 national survey revealed 39% of adults and 29% of teens were interested in OTC POPs.<sup>3</sup> Recent clinical studies suggest POPs may be a more effective first-line treatment for endometriosis than traditional combination OCPs.<sup>4,5</sup> In a 2021 trial, 77% of participants preferred OTC POPs over their previous contraceptive methods.<sup>6</sup> Although Opill may cause side effects like irregular vaginal bleeding and nausea, 80% of trial participants found the menstrual bleeding acceptable.<sup>1,5</sup> The FDA's approval of nonprescription OCPs marks a significant step forward in empowering Americans to take control of their sexual and reproductive health. With confirmed safety and efficacy, OTC OCPs eliminate the need for prescriptions and healthcare provider supervision. Future studies can explore the real-world availability and broader applications of norgestrel OCPs, promoting self-care and informed decision-making.

**Keywords:** Over-the-counter oral contraceptive pill, progesterone-only-pills

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**A CROSS SECTIONAL STUDY ON ESTIMATING THE PREVALENCE OF POTENTIALLY INAPPROPRIATE MEDICATIONS AMONG ELDERLY PATIENT ADMITTED TO KING ABDUL-AZIZ MEDICAL CITY EMERGENCY CARE CENTER**

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**Abstract:** Medication management in elderly patients is truly a challenge for all health care professionals. Age-related changes, poly-pharmacy and co-morbidities are factors for Potentially Inappropriate Medications (PIMs) prescribing that will increase the risk of adverse drug events (ADEs). STOPP (Screening Tool of Older Persons' Prescriptions) criteria is the most updated screening tool for detecting PIMs in elderly patients. The objective is to estimate the proportion of potentially inappropriate medications among the elderly visiting Emergency Care Center (ECC) an KAMC-CR. Prospective cross-sectional study has been approved by Institutional Review Board. It was conducted over two months from October-November 2014 at an ECC at KAMC-CR. The study includes 300 patients. The inclusion criteria; elderly patient more than 60 years old, patients from both gender who are stable and have poly pharmacy (more than 4 medications) prescription. Exclusion criteria; patients who are non-eligible to be treated in KAMC-CR, and who don't have medications history in KAMC-CR pharmacy computer system. The data were collected from the hospital electronic system and patients' chart. The statistical analysis was completed using the SPSS 19.0 software. The descriptive data will be presented as mean, standard deviations, and frequencies. Chi square test / fisher exact test will be used to determine relationships of independent variables with the study outcomes. Results will be reported in terms of frequency, percent, and p-value. The number of patients that took part in this study was 300 (average age was (65 – 79) years. Most prescribed medications were PPI, Antihyperlipidemia and antiplatelet. We found that, STOPP criteria identified most potential inappropriate prescribing was of cardiovascular medications, followed by drugs whose primary effect is on the musculoskeletal system central nervous system and gastrointestinal system. No PIPs were identified under the respiratory system criteria. The most common examples of PIP identified were long-term opiates in those with recurrent falls and duplicate drug class prescriptions (12%) and vasodilator drugs with postural hypotension (11.4%). Neuroleptic drugs with who are prone to falls Regular and opiates for more than 2 weeks in those with chronic constipation without concurrent use of laxatives (9%) Poly-pharmacy was independently associated with PIP especially in patients aged over 65. Application of such screening tools to prescribing decisions may allow clinicians and other health professionals to focus on avoiding inappropriate drug use, reduce unnecessary medication, drug interactions and related adverse events. This finding has significant implications for hospital geriatric, that will help in improve our clinical practice and better patient care.

**Keywords:** Medication management, potentially inappropriate medications (PIMs), STOPP criteria, elderly patients, polypharmacy, geriatric care



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**THE EFFECTIVENESS OF PARENT'S HEALTH EDUCATION INTERVENTION  
TO IMPROVE MMR VACCINATION CONFIDENCE AMONG MALAYSIAN  
PARENTS: A STUDY PROTOCOL**

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**Abstract:** Despite the progress made in Malaysia's vaccination programs, measles continues to persist. Parental confidence in measles vaccines plays a pivotal role in ensuring successful immunization. However, there is currently limited research on effective interventions to measure outcomes related to parental trust in MMR vaccination campaigns. Hence, this study aims to determine the effectiveness of Parent's Health Education as an intervention to improve MMR vaccination confidence among parents in Kuala Lumpur, Malaysia. The research is conducted in three phases based on the Logical Framework Approach. The phases include systematically developing a Parental Health Education consisting of MMR brochures and framing messages. The Heuristics Framework's guiding principles were used to develop Parental Health Education. The Vaccination Confidence Index and MMR attitude measurement instruments were adapted, translated, and validated to suit the Malaysian populace. In the final phase, the effectiveness of Parent Health Education Intervention will be delivered and assessed in a Quasi-Experimental study design with a control group in Kepong, Kuala Lumpur. Pre and post-intervention questionnaires will be administered to determine parental MMR vaccination confidence. Ultimately, the uptake of the MMR vaccine in children will be evaluated at 9 and 12 months of age. The research will determine if the Parent's Health Education Intervention impacts MMR vaccination confidence among parents more than standard care services received without additional intervention. This protocol is expected to aid in developing research strategies that promote measles vaccine confidence and acceptability, increase immunization rates, address vaccine hesitancy, and eliminate measles cases in Malaysia.

**Keywords:** Measles, MMR vaccination, vaccination confidence, parental health education, quasi-experimental study

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**DEMOGRAPHIC INFLUENCE ON MEDICAL STUDENT ATTITUDES OF THE COVID-19 VACCINE***Vangsness K.L.*, Moore S., Eklof L.A., Coffey T., Evans J., Sloan R.D.O.

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**Abstract:** Physician recommendations play a significant role in vaccination efforts. This study aimed to examine demographic influences on COVID-19 vaccine hesitancy among medical students. In April 2022, an anonymous web-based survey was created, validated, and distributed to 640 students at one medical school. Analysis included Pearson's chi-square test. In 244 responses collected, 68.3% supported mandatory vaccinations. Approximately 55% of "very" conservative, 75% of "slightly" conservative, 71.4% of independent students believed COVID-19 vaccinations are essential due to its severity, as opposed to 97.8% "very" liberal and 100% "slightly" liberal students ( $p < 0.0001$ ). One-fifth of conservative and independents ( $p = 0.0031$ ), 69.8% of Latter-day Saints, and 75% of Christians regarded at least one of the vaccines to be effective at averting death or severe disease, compared to majority of Muslims, Roman Catholic, Protestant, or Other (100%, 91.7%, 80%, 84.6%) ( $p \leq 0.05$ ). 100% of "very" conservative, 97.8% of "slightly" conservative students, and association with any religion displayed statistical significance in endorsing vaccine personal choice ( $p < 0.0001$ ), particularly among Christians ( $p < 0.0001$ ), whereas only 28% "very" liberal and 48.3% "slightly" liberal agreed ( $p < 0.0001$ ). The majority of liberal students believed that vaccines prevent disease spread, while only 75% of conservative, independent, and neutral students agreed ( $p < 0.001$ ). Medical students with conservative political associations and certain religious groups showed the least support for COVID-19 vaccination. Discerning factors that perpetuate erroneous beliefs are critical in improving patient care.

**Keywords:** Vaccine, COVID-19, hesitancy, medical students, education, medical education