

# Malaysian Family Physician

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and Family Medicine Specialist Association of Malaysia

## Research In The New Norm

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# About MFP

The *Malaysian Family Physician* (MFP) is the official journal of the Academy of Family Physicians of Malaysia (AFPM). It is jointly published by the Family Medicine Specialist Association (FMSA) of Malaysia. The MFP is published three times a year. It also started an Online First section in January 2021, where accepted articles are published online ahead of the issue.

**Goal:** The MFP is an international journal that disseminates quality knowledge and clinical evidence relevant to primary care. The journal acts as the voice of family physicians, researchers and other members of the primary care team on clinical practice issues.

**Scope:** The MFP publishes:

- i. Research – Original Articles and Reviews
- ii. Education – Case Reports/Clinical Practice Guidelines/Test Your Knowledge. We only encourage case reports that have the following features:
  1. Novel aspects
  2. Important learning points
  3. Relevant to family practice
- iii. Invited debate, commentary, discussion, letters, online, comment, and editorial on topics relevant to primary care.
- iv. A Moment in the Life of a Family Physician – We encourage submission of a short narrative to share perspectives, voice, views and opinions about a family physician's experience that has affected their practice or life.  
*Read our Information for Authors section to learn more about these article types.*

**Strength:** MFP is the only primary care research journal in Malaysia and one of very few in the region. It is open access and fully online. The journal is indexed in Scopus and has a strong editorial team and an established pool of readers with increasing recognition both locally and internationally.

**Circulation:** The journal is freely available online.

**Publisher:** Academy of Family Physicians of Malaysia

**All correspondence should be addressed to:**

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The Editor

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Articles are accepted for publication on condition that they are contributed solely to the Malaysian Family Physician. Neither the Editorial Board nor the Publisher accepts responsibility for the views and statements of authors expressed in their contributions. All papers will be subjected to peer review. The Editorial Board further reserves the right to edit and reject papers. Authors are advised to adhere closely to the instructions given below to avoid delays in publication.

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The original research (including clinical audit) should be conducted in the primary care setting on a topic of relevance to family practice. Both qualitative and quantitative studies are welcome. The length should **not exceed 3000 words with a maximum of 5 tables or figures and 30 references**. Please include the following sub-headings in the manuscript:

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All types of review articles, including narrative review, scoping reviews and systematic reviews are accepted for publication in MFP. A comprehensive review of the literature with a synthesis of practical information for practising doctors is expected. For a systematic review, the PRISMA checklist (<https://www.equator-network.org/reporting-guidelines/prisma/>) must be followed. For a scoping review, the PRISMA-ScR checklist (<https://www.equator-network.org/reporting-guidelines/prisma-scr/>) should be followed. The length should **not exceed 4000 words with a maximum of 5 tables or figures and 40 references**. Please include the following sub-headings in the manuscript:

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We encourage submission of a short narrative to share perspectives, voice, views and opinions about a family physician's experience that has affected their practice or life. It could be about being a doctor, educator, administrator/management, researcher, student or even patient. This type of article should be a **reflective piece of about 500 words in length**, and can be accompanied with photo(s). The journal also accepts articles which anchor on the photo(s) as the main content, this can be accompanied with captions (not more than 100 words) that describe the photo(s) with author's reflection on it.

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    2. Author, 2019
    3. Author, 2016
    4. Hashim S, Ayub ZN, Mohamed Z, et al. The prevalence and preventive measures of the respiratory illness among Malaysian pilgrims in 2013 Hajj season. J Travel Med. 2016;23(2):tav019. Published 2016 Feb 8. doi:10.1093/jtm/tav019
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## Oral Abstracts

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- 2 Factors Influencing Pap Smear Screening Uptake among Women Visiting Outpatient Clinics in Johor
- 3 Stunting And Its Association with Feeding Problem Among 6 To 59 Months Children in Kuantan District
- 4 Prevalence and factors associated with burnout among primary healthcare providers during the COVID-19 pandemic in Malaysia: A cross-sectional study
- 5 Levels of fear towards COVID-19 and its determinants among healthcare providers in Malaysia: a web-based cross-sectional study
- 6 Resilience and psychological distress as mediators between fear of COVID-10 and burnout among primary health care providers in Malaysia
- 7 A 3-Year Retrospective Study of Unintended Pregnancy in a Developed Multi-Ethnic Asian Community: A Call for Better Healthcare System for Family Planning
- 8 Comparison of the Efficacy of Indomethacin 1% cream versus Ketoprofen 2.5% gel in Adult Patients with Knee Osteoarthritis seen in the Family Medicine Out-Patient department in Tertiary Government Hospital: A Randomized Double-Blind Non-Inferiority Clinical Trial
- 9 Epidemiology and risk factors associated with gout control among adult Asians: a real-world retrospective cohort study
- 10 Health Outcomes of Telemonitoring of Patients with Type-2 Diabetes Mellitus in Primary Care: A Randomized Controlled Trial
- 11 A randomized controlled study of improving patient satisfaction with community health services through health promotion interventions in Xian, China
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- 14 Patients satisfaction towards healthcare services and its associated factors among patients attending the busiest government clinic in Pahang
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- 16 The 10-year cost of a team-based, multi-component hypertension management programme
- 17 Medication use among older adults: A qualitative study in primary healthcare in Penang
- 18 Healthy living with Online support & Education (HOPE) in the Primary Care Setting: A protocol
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- 3 Mental help seeking attitude and psychological wellbeing among foundation students in the midst of COVID-10 pandemic
- 4 Patient Preferences in Selecting a Primary Care Provider: A Qualitative Study in Singapore
- 5 Health Seeking Behaviour for Hearing Loss Among Elderly: A Qualitative Study in University Malaya Medical Centre (UMMC)
- 6 Knowledge, Attitude and Practices of Indigenous People Towards Non-Communicable Diseases In Bera, Malaysia: A Community-Based Study
- 7 The effect of an integrated multi-component telemonitoring system on the behaviour change of Asian adults with type-2 diabetes mellitus to attain their glycaemic control: A qualitative research study
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- 9 Diabetic Kidney Disease and Glycaemic Control in Type-2 Diabetes at Primary Care in Kuantan, Pahang
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- 13 Postpartum Depression (PPD) detection-family medicine postgraduate trainee knowledge, attitude and practice
- 14 Management of Co-occurring Coronary Heart Disease and Anxiety Disorder through Family Medicine Approach
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## ORAL ABSTRACTS

### Oral Abstract OP1

#### Effects of a serious game on knowledge, attitude and practice in vector control and Dengue prevention among adults in primary care: A randomized controlled trial

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**Introduction:** Dengue is endemic but vaccination against it is optional in tropical Singapore. Despite vector control measures to curb mosquito breeding, dengue infection continues to be prevalent. A serious game has been developed to raise the community awareness of dengue vector control programme among residents in Singapore.

**Objective:** The study aimed to evaluate the effectiveness of a serious game on the knowledge, attitude and practice (KAP) in dengue prevention among adults. It also determined their willingness to be vaccinated against dengue

**Methods:** A randomised controlled trial was conducted among volunteer adults who were visiting a regional primary care clinic in Sengkang, Singapore. 400 participants were randomly allocated to receive information regarding dengue prevention from either playing a serious game (intervention) or visiting a dengue prevention website (control). Before and after receiving information on dengue prevention, participants completed self-administered online questionnaires within a 2-week interval to assess KAP score and their interest in dengue vaccination. Participants, who played serious game, evaluated the game with System Usability Scale (SUS).

**Results:** 178 participants (89%) from intervention group and 196 participants (98%) from control group, completed both questionnaires. 157 (78.5%) participants in the intervention group completed playing serious game. Participants in both groups had increased KAP score from baseline, but mean difference in score (SD) was greater when assessing participants' daily practice towards dengue prevention in serious game group compared to control group (1.0 (2.8) vs 0.3 (1.9),  $p=0.009$ ). There was a positive correlation ( $\rho=0.275$ ) between mean change in KAP score and highest achievement attained within serious game ( $p=0.001$ ). Mean SUS (SD) was 61.8 (19.2) among participants who played serious game. 84.2% of study population was willing to undertake dengue vaccination at baseline. Participants in both groups had increased proportion of participants who showed interest in dengue vaccination from baseline but difference between serious game and control groups were not significant (5.6% vs 2.6%,  $p=0.131$ ).

**Conclusion:** Serious game is at least equally effective compared to conventional web-based learning in promoting dengue prevention measures and vaccination intention among adults, and may be considered as a feasible alternative to digitally engage local residents.

### Oral Abstract OP2

#### Factors Influencing Pap Smear Screening Uptake among Women Visiting Outpatient Clinics in Johor

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**Introduction:** Despite the benefits of cervical cancer screening, Pap smear uptake remains variable in Malaysia, with Johor previously reported as the state with the lowest uptake.

**Objective:** This study aims to fill the gap in epidemiological knowledge and assess factors affecting the uptake of Pap smear screening among women in Johor.

**Methods:** A cross-sectional study was conducted in several government and private clinics across Johor, including Pagoh, Muar, Batu Pahat, Kulai, and Johor Bahru districts. Data was collected from 452 women using self-administered questionnaires, and logistic regression was performed to determine factors associated with Pap smear uptake.

**Results:** Findings showed that 48.5% of the women reported having undergone Pap smear screening in the previous 3 years, and 40.0% and 51.3% of respondents accurately answered questions on symptoms and risk factors of cervical cancer, respectively. Increasing age (adj OR 2.322, 95% CI 1.708–3.158), being married (adj OR 4.860, 95% CI 1.100–21.476), parity of  $\geq 5$  (adj OR 8.381, 95% CI 1.326–52.958), young age at first pregnancy (adj OR 0.932, 95% CI 0.877–0.991), knowledge of cervical cancer symptoms (adj OR 1.745, 95% CI 1.065–2.857), support from family (adj OR 3.620, 95% CI 2.081–6.298), and contraception use (adj OR 2.220, 95% CI 1.314–3.750) were significantly associated with increased Pap smear uptake among women visiting outpatient clinics in Johor.

**Conclusion:** Pap smear uptake remains suboptimal in Johor, and broad-based awareness campaigns tailored towards improving knowledge of cervical cancer with family involvement are crucial to improving uptake among women in Johor.

### Oral Abstract OP3

#### Stunting And Its Association with Feeding Problem Among 6 To 59 Months Children in Kuantan District

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**Introduction:** Stunting is the most prevalent form of malnutrition among the infant and young children population, both globally and locally. It refers to low height-for-age children and is primarily caused by chronic undernutrition.

**Objective:** This study aims to determine the association between stunting and feeding problems and to explore the risk factors for stunting among infants and young children attending health clinics in the Kuantan district.

**Methods:** A case-control study involving 160 respondents that attended seven health clinics in Kuantan from August to October 2021 with a ratio of 1 case:3 control. Data were collected using a questionnaire consisting of sociodemographic and feeding assessments implemented from validated IMCI (Integrated Management of Childhood Illness).

**Results:** Children with any feeding problem have more than four-time significantly higher risk of becoming stunted (OR: 4.2 [95% CI 1.4-12.8]) as compared to children with no feeding problem. Children with inadequacy in feeding components; frequency, variety and amount of meal each have significantly three-time higher risk (OR: 2.8 [95% CI 1.1-6.9]), four-time higher risk (OR: 4.2 [95% CI 1.4-12.3]) and six-time higher risk (OR: 6.2 [95% CI 2.7-14.5]) of becoming stunted as compared to children with adequate feeding. Additionally, with an increase of one week in delivery week, one kilogram in birth weight and one centimetre in maternal height, there is a respectively significant 40.0% (OR: 0.6 [95% CI 0.4-0.9]), 80.0% (OR: 0.2 [95% CI 0.1-0.7]) and 11.0% (OR: 0.89 [95% CI 0.82-0.98]) reduction in the risk of become stunted among participants.

**Conclusion:** Providing optimal nutritional in the first 1000 days of life of a child and identifying these risks and providing early intervention from the antenatal period is crucial to prevent childhood stunting.

#### Oral Abstract OP4

##### Prevalence and factors associated with burnout among primary healthcare providers during the COVID-19 pandemic in Malaysia: A cross-sectional study

**Ching SM<sup>1</sup>**, Cheong AT<sup>1</sup>, A.Yee<sup>2</sup>, T Ramayah<sup>3</sup>, Lim PY<sup>1</sup>, IZ Ismail<sup>1</sup>, Nor AM<sup>4</sup>, Nuraini D<sup>4</sup>, Sharifah NASG<sup>4</sup>, Roslina AJ<sup>4</sup>, Nor IHAS<sup>4</sup>, Lee KW<sup>5</sup>

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**Introduction:** Healthcare providers(HCPs) were at risk of burnout due to work overload during this COVID-19 pandemic.

**Objective:** This study aimed to determine the prevalence of burnout and its associated factors among HCPs in Malaysia during the pandemic.

**Methods:** This was a web-based cross-sectional study conducted among 1280 HCPs aged ≥18 years from 30 primary care clinics using Copenhagen Burnout Inventory.

**Results:** The median age of the respondents was 35 years old and median duration of working experience was 10 years. The majority of the respondents were female (82.4%) and Malays(82.3%).The study population consisted of nurses (47.4%), doctors(26%), medical assistants(11.9),healthcare assistant (7.1%), medical laboratory technicians (6.4%) and

drivers(1.3%).The prevalence of personal burnout was 41.7%, followed by work related burnout (32.2%) and client related burnout (14.5%). Predictors for personal burnout were doctor (AOR=2.176, p<0.001), 3.044), higher COVID-19 exposure risk (AOR=1.237, p=0.002), don't know where to seek help (AOR=1.711, p=0.017), total COVID-19 fear score (AOR=1.050, p<0.001), total stress score (AOR=1.053, p<0.001), age (AOR=0.955, p<0.001), ability to handle stress (AOR=0.745, p=0.002), sleep quality score (AOR=0.661, p<0.001), and total BRS score (AOR=0.905, p<0.001). Predictors for work-related burnout were doctor (AOR=3.360, p<0.001), years of working (AOR=1.089, p=0.013), COVID-19 exposure risk (AOR=1.278, p=0.001), don't know where to seek help (AOR=2.206, p<0.001), total stress score (AOR=1.060, p<0.001), age (AOR=0.923, p=0.010), altruistic score (AOR=0.836, p=0.026), sleep quality score (AOR=0.622, p<0.001), and total brief resilience score (BRS) score (AOR=0.885, p<0.001). Predictors for client-related burnout were doctor (AOR=1.539, p=0.027), single/divorced (AOR=2.376, p<0.001), ≥ one attachment site (AOR=1.747, p=0.003), total depression score (AOR=1.034, p=0.001), satisfaction toward the infection control (AOR=0.801, p=0.039), ability of handle stress (AOR=0.727, p=0.006), and total BRS score (AOR =0.938, p=0.017).

**Conclusion:** The prevalence of burnout was high among HCPs during COVID-19. Therefore, great effort is required to detect the presence of burnout for further intervention.

#### Oral Abstract OP5

##### Levels of fear towards COVID-19 and its determinants among healthcare providers in Malaysia: a web-based cross-sectional study

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**Introduction:** Malaysia is one of the hardest-hit countries in Asia during the COVID-19 pandemic. This rapidly rising number of cases in Malaysia had sparked fear among healthcare providers.

**Objective:** This study aimed to assess the determinants of fear among healthcare providers in the primary care setting.

**Methods:** This was a web-based cross-sectional study conducted among 1280 healthcare providers aged 18 years and older from 30 primary care clinics in the state of Selangor, Malaysia. In this study, the fear of COVID-19 scale was used to assess the respondents and the results were analysed using multiple linear regression.

**Results:** Median age of the respondents was 36 years old and median duration of working experience was 11 years. Majority of the respondents were female (82.4%) and Malays(82.3%). Factors that showed a significant correlation with higher levels of fear among healthcare providers were those with underlying

chronic disease ( $\beta=1.12$ ,  $p=0.002$ , 95% confidence interval [CI] 0.08,3.15), concern for mortality from COVID-19 ( $\beta=3.3$ ,  $p<0.001$ , 95% CI 0.19,7.22), higher level of exposure risk ( $\beta=0.8$ ,  $p<0.001$ , 95%CI 0.14,5.91), concern for self at work ( $\beta=2.8$ , 0.002, 95%CI 0.08,3.10), nurses ( $\beta=3.6$ ,  $p<0.001$ , 95%CI 0.30,7.52), medical laboratory workers ( $\beta=3.0$ ,  $p<0.001$ , 95%CI 0.12,4.27), healthcare assistants ( $\beta=3.9$ ,  $p<0.001$ , 95%CI 0.17,5.73) compared to medical assistants. The level of fear was inversely correlated with a higher work-related stress management score ( $\beta=-0.9$ ,  $p<0.001$ , 95%CI -0.14, -5.07) and a higher sleep quality score ( $\beta=-1.8$ ,  $p<0.001$ , 95%CI -0.28, -10.41).

**Conclusion:** Family medicine physicians should be vigilant and identify healthcare providers at risk of developing COVID-19 fear for early mental health intervention.

### Oral Abstract OP6

#### Resilience and psychological distress as mediators between fear of COVID-10 and burnout among primary health care providers in Malaysia

**Ching SM<sup>1</sup>**, Cheong AT<sup>1</sup>, T Ramayah<sup>2</sup>, A.Yee<sup>3</sup>, Lim PY<sup>1</sup>, IZ Ismail<sup>1</sup>, Ng JY<sup>4</sup>, Ooi PB<sup>5</sup>, Lee KW<sup>6</sup>, Rasina NJK<sup>4</sup>, Zamzurina A<sup>4</sup>, Rajini ASR<sup>4</sup>, Teoh SW<sup>4</sup>, Noor HH<sup>4</sup>

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**Introduction:** During the COVID-19 pandemic, healthcare providers were at risk of burnout due to work overload.

**Objective:** This study aimed to determine the mediating role of resilience, depression, anxiety and stress on the relationship between fear of COVID-19 and burnout in primary healthcare providers in Malaysia.

**Methods:** This was a cross-sectional study via online survey from Jan 28, 2022-Feb 28, 2022 involving 1280 healthcare providers from 30 government primary care clinics in Malaysia. Simple random sampling method with one-stage probability proportionality was used to select 30 out of 53 clinics in Selangor. The COVID-19 Fear Scale, the Short Brief Resilience Scale, the Copenhagen Burn Inventory Scale, and the DASS-21 Scale were used for data collection. Smart-PLS was used to perform mediation analysis.

**Results:** The mean age of the respondents was 36 years old and mean duration of working experience was 11 years. The majority of the respondents were female (82.4%) and Malays (82.3%). The study population consisted of nurses (47.4%), doctors (26%), medical assistants (11.9%), healthcare assistant (7.1%), medical laboratory technicians (6.4%) and drivers (1.3). The prevalence of personal burnout was 41.7%, followed by work related burnout (32.2%) and client related burnout (14.5%). The results show that fear of COVID-19 positively predicts personal burnout ( $\beta=0.119$ ,  $p<0.001$ ) and work related burnout ( $\beta=0.049$ ,  $p=0.037$ ). Resilience mediates the relationship between fear of COVID-19 and all the

three burnout domains, namely personal burnout ( $\beta=0.115$ ,  $p<0.001$ ), work-related burnout ( $\beta=0.115$ ,  $p<0.001$ ), and client-related burnout ( $\beta=0.125$ ,  $p<0.001$ ). Additionally, resilience reduces the impact of COVID-19 fear on the three domains of burnout. It was also concluded that psychological distress mediates the relationship between fear of COVID-19 and three burnout domains, namely personal burnout ( $\beta=0.127$ ,  $p<0.001$ ), work-related burnout ( $\beta=0.138$ ,  $p<0.001$ ) and client-related burnout ( $\beta=0.101$ ,  $p<0.001$ ).

**Conclusion:** This study has identified the potential areas of intervention for overcoming burnout by improving resilience and reducing psychological distress among healthcare providers.

### Oral Abstract OP7

#### A 3-Year Retrospective Study of Unintended Pregnancy in a Developed Multi-Ethnic Asian Community: A Call for Better Healthcare System for Family Planning

**Quak Xin En Stephanie (presenting author)<sup>1</sup>**, Sultana Rehana<sup>1</sup>, Aau Wai Keong<sup>2</sup>, Goh Chin Chin<sup>2</sup>, Tan Ngiap Chuan<sup>2,3</sup>

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**Introduction:** Women of child-bearing age may face unintended pregnancy (UP). They are usually referred by primary care professionals (PCP) to gynaecologists to manage their UP in countries where abortion is legalised.

**Objective:** The study aimed to determine the prevalence, demographic profiles, and associated factors of women in a developed community seeking referrals from PCPs for their UP.

**Methods:** The sociodemographic and clinical data were extracted from the electronic medical records of pregnant multi-ethnic Asian women at eight Singapore public primary care clinics from July 2017 to June 2020. Their demographic profiles were reviewed and compared among women of different age bands using appropriate statistical tests. Logistic regression was used to identify the factors associated with UP referrals.

**Results:** Among 9794 gravid women, 974 of them requested gynaecologist referrals to terminate UP over the 3-year period, constituting a prevalence of 9.94%. The mean age of women requesting such referrals was  $29.7\pm 7$  years. There were 10.7% with more than one prior unintended pregnancy and 15.7% were foreigners. The majority of these women were married, did not require social assistance nor had comorbidities. Only 2.9% of them were known to be prescribed contraceptives. Multivariable logistic regression analysis showed that women of Indian ethnicity, single, aged below 20 years and above 40 years, were more likely to request referrals for UP.

**Conclusion:** One in ten gravid women had sought referrals for UP, especially the adolescents and older women, and Indian ethnicity. An accessible, community-based healthcare service to educate and counsel women on family planning is urgently needed to reduce incidence of UP.



### Oral Abstract OP8

#### Comparison of the Efficacy of Indomethacin 1% cream versus Ketoprofen 2.5% gel in Adult Patients with Knee Osteoarthritis seen in the Family Medicine Out-Patient department in Tertiary Government Hospital: A Randomized Double-Blind Non-Inferiority Clinical Trial

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**Introduction:** Osteoarthritis (OA) is the leading cause of pain and disability worldwide, affecting 4.1 percent of an urban population in the Philippines. Oral non-steroidal anti-inflammatory drugs are often used in treating OA, often giving adverse systemic reactions; hence other treatment routes are considered, particularly topical.

**Objective:** To compare the efficacy of two topical non-steroidal anti-inflammatory drugs in adult patients with knee osteoarthritis seen in a Tertiary Government Hospital in the Family Medicine Out-Patient Department.

**Methods:** Patients with American College of Rheumatology-defined OA of the knee and mild to moderate pain were randomized to topical Indomethacin 1% cream and Ketoprofen 2.5% gel thrice daily for two weeks to compare the difference in the visual analogue scale (VAS), and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scores pre-and post-treatment. Successful treatments resulting in a change of 1 category down the VAS using said topical NSAIDs were compared.

**Results:** Patients (n = 90) were randomized and treated. Mean baseline total WOMAC scores were 47.22 (±15.03) for Indomethacin 1% cream and 45 (±15.41) for Ketoprofen 2.5% gel. The mean change in the total WOMAC scores from baseline to Week 2 was 53.6% for Indomethacin 1% (25.33 ±13.80, p<0.005) and 55.3% for Ketoprofen gel 2.5% gel (24.9 ±14.58p <0.005). Both groups reported a significant decrease in pain and improvement in function but not in stiffness. There was no significant decrease in pain using the VAS. The post-treatment outcomes showed a 13% (n=6) successful treatment with Indomethacin 1.0% cream and 24% (n=11) with Ketoprofen 2.5% gel. No use of rescue medications nor treatment-related adverse events (AE) were observed.

**Conclusion:** The efficacy of topical NSAIDs Indomethacin 1% cream and Ketoprofen 2.5% cream in knee OA is significant in improving pain and physical function domains in WOMAC post-treatment and 13% and 24% successful treatment using VAS, respectively.

### Oral Abstract OP9

#### Epidemiology and risk factors associated with gout control among adult Asians: a real-world retrospective cohort study

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**Introduction:** Suboptimal gout control is prevalent globally despite treatment availability. Identifying the risk factors associated with poor gout control among patients in primary care allows targeted interventions to improve their clinical management.

**Objective:** This study aimed to determine the prevalence of poor gout control and its associated demographic and clinical factors among urbanised community-dwelling Asian patients.

**Methods:** This retrospective study was based on data extracted from the electronic medical records of 8 public polyclinics in Singapore. Data of patients with a diagnostic code of gout, who had ≥2 polyclinic visits between 1st January 2018 and 31st December 2019 were extracted, including demographics, comorbidities, serum uric acid levels and allopurinol prescription. A patient is defined to have poor gout control if they suffer two or more acute gout attacks within a year. Chi-Squared test was used for categorical parameters. For continuous variables, univariate logistic regression analysis was first performed. Significant factors (p≤0.1) were then included in the logistics regression model to account for confounders.

**Results:** After analysing 7,970 patients and 24,624 visits, the prevalence of poorly controlled gout was 34.8% (n=2773/7970); only 52.0% of them (n=1,441/2,773) were prescribed allopurinol and 14.2% (n=396/2,773) were taking daily doses ≥300mg. Using logistic regression, factors associated with poor gout control were: males (adjusted OR [AOR] =2.02, p<0.001), Malay ethnicity (AOR=1.47, p=0.001), chronic kidney disease (AOR=1.22, p=0.003) and congestive heart failure (AOR=2.23, p=0.026).

**Conclusion:** One-third of patients had poor gout. Interventions should focus on males and Malay patients and those with chronic renal and cardiac diseases.

### Oral Abstract OP10

#### Health Outcomes of Telemonitoring of Patients with Type-2 Diabetes Mellitus in Primary Care: A Randomized Controlled Trial

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**Introduction:** Healthcare providers are increasingly leveraging on telemonitoring to supervise their patients with non-communicable diseases on their health status in between consultations.

**Objective:** This study aimed to determine the clinical outcomes of patients with type-2 diabetes mellitus (T2DM), using a novel multi-functional telemonitoring system (OPTIMUM) as compared to usual-care.

**Methods:** An open-labelled randomized controlled trial involving 330 Asian patients with T2DM, aged 26-65 years, with suboptimal glycemic control (HbA1c=7.5-10%) was conducted in a Singapore public primary care clinic. Patients were randomly assigned in a 1:1 ratio using block randomization. Those in the intervention arm received in-apps



educational videos, tele-monitoring of their blood pressure (BP), capillary glucose and weight via their bluetooth-enabled devices (digital sphygmomanometer, glucometer and weighing scale) and algorithm-based, protocolized tele-management by the OPTIMUM-care team. Those in the control arm received usual-care by the primary care physician per study protocol. Clinical assessments and laboratory tests were performed for both arms at baseline and 6 months. The glycemic index (HbA1c), BP and weight were compared between the two arms using appropriate statistical methods.

**Results:** Complete data of 159 (intervention) and 160 (control) subjects were analyzed: mean age=52.7years; 59.2% females; 58.3% Chinese; 37.9% had secondary education and 55.8% had medical subsidy. The intervention group showed significantly lower HbA1c by 0.34% (95%CI=-0.57—0.11; p=0.004); first systolic BP measurement decreased by 2.98mmHg (95%CI:-5.87--0.08; p=0.044) and diastolic BP by 4.24mmHg (95%CI=-6.01--2.47; p=0.000); decline in second diastolic BP measurement by 5.75mmHg (95%CI:-7.92--3.58; p=<0.001); total cholesterol by 0.18mmol/L (95%CI:-0.34--0.01; p=0.040) and fasting blood glucose by 0.31mmol/L (95%CI:-0.81-0.19; p=0.229) compared to the control group, after adjusting for baseline variables. No significant drop-out nor weight change was noted between groups.

**Conclusion:** Patients with suboptimal T2DM control benefited from short-term telemonitoring using the OPTIMUM system with improved health outcomes, including lower HbA1c, BP and total cholesterol.

#### Oral Abstract OP11

##### A randomized controlled study of improving patient satisfaction with community health services through health promotion interventions in Xian, China

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**Introduction:** Primary health care is a fundamental health service available to individuals and families in the community, which is essential to improve the physical, mental, and social well-being of community residents. It is the most inclusive and equitable approach to achieving this goal and is the cornerstone of every country's health system. Patient satisfaction is an important indicator of the quality of community health services and reflects the satisfaction of community residents with the medical and health services provided. Community health service satisfaction evaluation is a critical standard for assessing the acceptance and participation of people in community health services.

**Objective:** This study examines the effectiveness of health promotion in improving patient satisfaction with community health services.

**Methods:** We conducted a single-blind randomized controlled trial to the patients from the Community Health Service Center of Xi'an, China, from June to August 2022. The

participants were randomly assigned to either an intervention group or a control group. Both groups received 2-week WeChat education, with the intervention group receiving online intervention education including 9 items, online communication, and discussion, while the control group received related information about health care and health. Data were collected before and after the intervention, and the results were measured using a social demographic questionnaire and the Patient Satisfaction Questionnaire (PSQ-18), which were analyzed using SPSS 23.0 version.

**Results:** In the study, 312 patients were enrolled, with 156 assigned to the intervention group and 156 assigned to the control group. The Patient Satisfaction Questionnaire (PSQ-18) revealed that general satisfaction domain showed the most improvement, increasing from Mean (SD)=3.474 (0.060) to Mean (SD)=3.994 (0.045) before the intervention. Results from the two-way repeated measures ANOVA show that time has a significant effect on patient satisfaction particularly the general satisfaction, technical quality, communication, financial aspect, and time spent.

**Conclusion:** The intervention significantly improved patient satisfaction in the intervention group compared to the control group, particularly in the areas of general satisfaction, technical quality, communication, and time spent (test within subjects). Statistically significant differences were observed in mean values before and after the intervention.

#### Oral Abstract OP12

##### Raising the Minimum Legal Age (MLA) of Smoking to 21: Do the Youth Agree?

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**Introduction:** Tobacco smoking remains prevalent despite its injurious effects to health. Initiation of smoking from a very young age has prompted a growing global consensus to raise the Minimum Legal Age (MLA) of smoking. Singapore successfully raised the MLA from 18 to 21 years in 2021. However, the views of local youth on the implementation of MLA are yet to be studied.

**Objective:** This study primarily aimed to understand the views of local youth on the enactment and consequences of the MLA21 law. It also aimed to identify the factors influencing their acceptability of the law, assess their awareness on passive smoking and views on pre-existing smoking prevention measures.

**Methods:** A cross-sectional survey comprising of 23 items was circulated via a secure internet-based platform, FORMSG from September to November 2022. The questionnaire underwent User Acceptability Testing (UAT) before further circulation among local youth aged between 15 and 24 years of age via convenience sampling. Categorical parameters were compared for association with receptivity towards change in MLA using Chi-Squared test. Regression and other analyses

were performed using R v3.5.2, Rstudio and SPSS software with statistical significance set at  $p \leq 0.05$ .

**Results:** Majority (80.3%) of the 608 participants were supportive of the MLA 21 implementation. Age was a significant variable as those aged 15-17 years old (OR = 2.1, 95%CI = 1.01-4.32,  $p = 0.048$ ) were more likely to support the MLA21 implementation compared to those aged 21 and above. Most (89.8%) of the participants were also aware of the harmful effects of passive smoking. Family influence (64%) was chosen as the top measure to effectively discourage smoking among youth.

**Conclusion:** Local youth were largely supportive of raising the MLA of smoking, demonstrated awareness about the harms of passive smoking and identified family influence as a main measure to discourage youth from smoking.

### Oral Abstract OP13

#### The prevalence of high grit among type 2 diabetes mellitus patients and the associated factors

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**Introduction:** Diabetes mellitus is a chronic non-communicable disease with increasing prevalence globally. Grit helps in achieving a long-term goal through perseverance and passion. Literature has demonstrated that a high level of grit can improve treatment compliance.

**Objective:** This study wants to determine the prevalence of high grit among diabetes patients in adherence to pharmacological treatment. We also want to determine the relation of high grit with health profile and social demographic data of the patients.

**Methods:** This was an analytical cross-sectional study conducted in an urban district of Seremban from May 2022 until December 2022. Respondents were selected by using systematic random sampling. Statistical analysis was done using chi square test and simple linear regression. Informed consent was taken from respondent before sample enrolment. Ethical approval was obtained from ethics committee prior to study commencement.

**Results:** A total of 153 respondents took part in this study. The proportion of patients with high level of grit was 62.7% and high treatment adherence was 75.8%. A high level of grit was significantly associated with medication adherence ( $p < 0.001$ ), duration of diabetes ( $p = 0.035$ ), absent family history of diabetes ( $p = 0.047$ ), optimal HbA1c ( $p = 0.037$ ), optimal blood pressure control ( $p = 0.035$ ), and absence of albuminuria ( $p = 0.047$ ). There was a positive and moderate correlation between the level of grit and medication adherence ( $r = 0.565$ ). People who adhered to treatment have 22 times higher grit level as compared to poorer adherence groups.

**Conclusion:** High level of grit is important to promote medication adherence. Hence, continuous health promotional

and health educational activity should be done to improve perseverance and passion for medication compliances. Achieving optimal sugar control will inevitably reduce the risk of premature mortality.

### Oral Abstract OP14

#### Patients satisfaction towards healthcare services and its associated factors among patients attending the busiest government clinic in Pahang

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**Introduction:** Patient satisfaction is widely used to monitor the quality of health care services. A significant patient load may influence health care services and patient satisfaction.

**Objective:** Thus this study aimed to measure patients' satisfaction towards health care services at Kuantan's busiest primary care clinic

**Methods:** A cross-sectional study was conducted at Klinik Kesihatan Bandar Kuantan, Kuantan, Pahang. Patients were selected using simple random sampling, and 201 participants were selected. The selected participants were asked to fill up the validated questionnaires consisting of background characteristic and Patient Satisfaction Questionnaire 18 (PSQ-18). Data collection period was from March 2022 to August 2022.

**Results:** Most respondents were Malay (68.7%), having secondary education (54.2%) and predominantly from the B40 income class (88.1%). Overall mean patient satisfaction score was  $3.83 \pm 0.31$ . The mean aged was 47.1 (16.9). There were significant associations between overall satisfaction with patient education level ( $B = -0.144$ ; 95% CI-0.246, -0.042;  $p = 0.006$ ), waiting time ( $B = -0.371$ ; 95% CI-0.534, -0.209;  $p = 0.001$ ), and consultation time ( $B = -0.154$ ; 95% CI-0.253, -0.055;  $p = 0.0020$ ). It was found that patients with secondary education were less satisfied compared to patients with primary education level on health care services they received. Meanwhile, those who were not happy with the waiting time reported less satisfied with overall patient satisfaction score on health care services they received compared to those who were happy with the waiting time. Those who were not happy with consultation time showed less satisfaction with overall healthcare services given compared to those who were happy with consultation time

**Conclusion:** In conclusion, despite serving the most significant number of patients in the Pahang state, most of the patient were satisfied by the health care services at Klinik Kesihatan Bandar Kuantan (KKBK). However it is recommended to improve the waiting time and the consultation time in this clinic to enhance patient satisfaction level.

### Oral Abstract OP15

#### Acceptance of free opportunistic screening for Type 2 Diabetes Mellitus using point-of-care capillary haemoglobin-A1c testing in a public primary care clinic – A pilot study

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**Introduction:** In Hong Kong where screening of type-2 diabetes mellitus (T2DM) is only provided for selected patient groups in the public healthcare sector, 54.1% of individuals with T2DM were unaware of their diagnosis. Possible barriers to early detection include lack of awareness or motivation, cost and time for screening tests, or fear of venipuncture among at-risk individuals. Point-of-care (POC) haemoglobin-A1c assays using capillary blood (cHbA1c) has been proposed as a suitable screening test for T2DM.

**Objective:** To explore patients' acceptance of free opportunistic T2DM screening using POC-cHbA1c testing in a public primary care clinic.

**Methods:** A cross-sectional study was conducted at a public primary care clinic in Hong Kong between June to September 2022. Adult patients without known T2DM or T2DM screening in the past 12-months were consecutively approached by research nurses during their clinic attendance to explain the importance of early T2DM detection and screening for the presence of risk factor(s), including age $\geq$ 45-years, positive family history of T2DM, history of gestational diabetes mellitus, obesity, hypertension, dyslipidemia, impaired-fasting-glucose and impaired-glucose-tolerance. Patients with  $\geq$ 1 risk factor(s) but no contraindication for HbA1c/OGTT testing, such as active endocrine disorder, known anaemia requiring iron replacement, on systemic glucocorticoid therapy, pregnancy, breast-feeding, and history of transfusion or blood donation in the past 3-months, were invited to undergo a free POC-cHbA1c testing on-site. Primary outcome was the proportion of adult primary care patients at risk of T2DM who were willing to undergo free POC-cHbA1c testing at the healthcare provider's recommendation.

**Results:** Among 114 patients approached, 18(15.8%) refused to participate. 88(91.7%) patients had  $\geq$ 1 risk factor(s) for T2DM, where 81(92.0%) were eligible for POC-cHbA1c testing. 4(4.9%) patients declined the spot test. 77(95.1%) patients underwent POC-cHbA1c testing, where 6(7.8%) had HbA1c $\geq$ 6.5%.

**Conclusion:** The majority of adult primary care patients were willing to learn about their diabetic risks and accept the POC-cHbA1c testing.

### Oral Abstract OP16

#### The 10-year cost of a team-based, multi-component hypertension management programme

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**Introduction:** The Risk Assessment and Management Programme for patients with Hypertension (RAMP-HT) – a team-based, multicomponent intervention implemented across public primary care clinics in Hong Kong – was associated with 48% lower risks of death and 38% lower risks of cardiovascular diseases compared to usual care after 5 years. Whether such complex intervention is cost-effective over time depends critically on its cost.

**Objective:** To estimate the 10-year programme cost of RAMP-HT from public health service provider's perspective.

**Methods:** Costing questionnaires were distributed to the RAMP-HT programme coordinators of Hospital Authority (HA) head office, all seven HA clusters, and two representative RAMP-HT clinics in each cluster in April 2017 and August 2021 to collect (1) set-up costs, (2) intervention costs and, (3) administrative costs incurred from RAMP-HT between October 2011 to March 2021. The total RAMP-HT programme cost per participant over the 10-year period was the sum of set-up costs, 10-year administrative costs, and annual service costs calculated by multiplying the average number of RAMP-HT intervention encounters per participant in that year by the respective intervention unit cost.

**Results:** The set-up cost of RAMP-HT over 10 years, including costs of clinic renovation, furniture, equipment and educational tools, averaged to USD4.6 per participant. Administrative costs incurred at HA Head Office, the 7 clusters and the RAMP-HT clinics, mainly for staff costs, were USD0.5, USD2.7 and USD3.2 per participant/year, respectively. The mean RAMP-HT intervention unit costs per attendance were USD23.5 for nurse assessment, USD23.0 for nurse intervention, and USD30.3 for specialist consultation. The average RAMP-HT service cost over 10 years was USD94.9 per participant, where the total 10-year RAMP-HT programme cost was USD162.9 for each participant.

**Conclusion:** The 10-year programme cost of RAMP-HT per participant was comparable to the cost of one specialist-outpatient-clinic visit. Our results demonstrated how team-based care might alleviate public healthcare burden.

**Oral Abstract OP17****Medication use among older adults: A qualitative study in primary healthcare in Penang**

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**Introduction:** The spike in the ageing population percentage is remarkable, and it has brought the limelight to the primary healthcare system, the first point of healthcare in Malaysia.

**Objective:** This study aims to understand the perspectives of older adults on the various challenges they encounter related to medication use at primary healthcare in the northern state of Malaysia, Penang.

**Methods:** A qualitative method was employed to explore views on accessibility to primary care, medication use problems, and opinions regarding healthcare and medicine use at the primary care level. Potential participants with many medications and having problems taking them were recruited, which the pharmacists and general practitioners pointed out. Transcription was conducted by one author and was checked for validity by another author, an academician with experience in qualitative data analysis. Subsequently, categories were developed based on the codings corresponding to the themes emerging from the data. Nvivo 12 was used to assist in the analysis.

**Results:** Six themes were derived from thematic analysis. (1) Accessible primary healthcare for older adults; (2) Barriers achieving optimal primary healthcare; (3) Belief and knowledge about medication; (4) Engaging communication with healthcare providers with family support; (5) Current satisfaction with primary healthcare medication use services and facilities; (6) Improving medication use among older adults to achieve the optimum need. The study's findings revealed that older adults experience medication use problems and identified potential recommendations for improving healthcare delivery in primary care based on their perspectives.

**Conclusion:** The present study provides a comprehensive exploration of the perspectives and challenges faced by older adults in primary healthcare settings. The findings suggest that there is a pressing need to prioritize the healthcare needs of older adults in Malaysia in order to enhance the quality of care provided to this population

**Oral Abstract OP18****Healthy living with Online support & Education (HOPE) in the Primary Care Setting: A protocol**

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**Introduction:** Cardiovascular disease (CVD) is the leading cause of death and a major global public health challenge. It is imperative to develop effective strategies to motivate individuals for lifestyle changes and medication adherence to reduce CVD risk factors, complications and mortality.

**Objective:** This study aims to compare the effectiveness of three motivational strategies in reducing CVD risk in the primary care setting. Perspectives of the impact, acceptability, feasibility and fidelity of the different strategies will also be explored.

**Methods:** A pragmatic cluster randomised controlled trial involving 100 primary care clinics and 1500 participants will be conducted using a mixed methods approach. Inclusion criteria include age 30-74 years old, presence of elevated blood pressure of 140/90 mmHg or low-density lipoprotein (LDL) cholesterol level (>2.6mmol with diabetes, >3.4mmol without diabetes). Participants with pre-existing cardiovascular disease will be excluded. Participants in the RCT will be randomised to one of four arms: "Usual Care", "HeartAge only" (estimated heart age based on cardiovascular risk), "HeartAge and HOPE app" (App providing a 24-week lifestyle guidance programme), and "HeartAge, HOPE App, and genetic risk scoring" with two follow-up visits in six months. Individual in-depth interviews (IDI) using the qualitative descriptive methodology will be conducted to explore up to 20 participants and 20 family doctors' perspectives of the motivational strategies used to reduce cardiovascular risk. All interviews will be transcribed verbatim and coded independently.

**Results:** The primary outcome of RCT is reduction in CVD risk score. Secondary outcomes include improvements in blood pressure, LDL-cholesterol, weight, smoking status, health-related quality of life and health-promoting behaviours of participants. Emergent themes for the motivational strategies to reduce CVD risk are identified from the qualitative study using an iterative process.

**Conclusion:** This study will provide evidence for the use of various motivational strategies in reducing cardiovascular risk. The protocol will be registered in ClinicalTrials.gov.



### Oral Abstract OP19

#### Towards Increasing Uptake of Breast and Cervical Cancer Screening: A Stakeholder-Driven Approach for the Development of MAwar App

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**Introduction:** Digital health interventions have potential to increase screening uptake by providing accessible information and reminders. Closing the gap between research production and research use is a key challenge for the health research. Stakeholder engagement is being increasingly promoted in health research, as an important pathway to achieving impact.

**Objective:** Therefore, we shared our experience in developing a stakeholder-driven MAwar web-based app to increase patients' intention to undergo breast and cervical cancer screening.

**Methods:** We developed an app for part for the Effectiveness of an Interactive Web Application to Motivate And Raise Awareness on Screening of Breast and Cervical Cancers study (MAwar study). Four main stakeholder groups comprising (four healthcare professionals (HCPs), three patients, one representatives of the public, and three technology experts) participated in the process of app development. Stakeholder engagement guided the development of an app to increase breast and cervical cancer screening uptake using the Quality Function Deployment (QFD) approach framework. The QFD analysis identified important features by collecting stakeholder needs and expectations and translating them into user interface requirements and product features. Stakeholders voted on the prioritized features.

**Results:** Based on the QFD analysis and stakeholder voting, the top three features for the proposed MAwar app were: (1) free to use without cost, (with a mean score of 4.64), (2) information about breast and cervical cancer, including statistics, causes, signs and symptoms, risk factors, and complications, with a (mean score of 4.55), and (3) information on the benefits of screening, including survival rates with and without screening (, with a mean score of 4.45). These features were considered the most important and had the highest priority to the stakeholders.

**Conclusion:** In conclusion, the stakeholder engagement identified key features that are critical for meeting the needs and expectations of the app users. However, the impact of the app on screening behavior, as well as its feasibility and scalability in real-world settings need to be evaluated.

### Oral Abstract OP20

#### Quality Improvement Programme: An experience on Workplace-based Assessment in Family Medicine Training in Malaysia

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**Introduction:** The Academy of Family Medicine of Malaysia (AFPM) conducts a distance-learning 4-year postgraduate programme. In the third and fourth year of training, trainees are each assigned a mentor. The Quality Improvement Programme (QIP) was introduced in 2021 to formatively assess trainees' actual clinical competency performance at their workplace.

**Objective:** The objectives of the QIP practice visits are to observe, precept and give constructive feedback to trainees on their consultation skills with actual patients at the workplace. This formative workplace-based assessment is supplemented with monitoring trainees' improvement during the monthly mentor-mentee meetings.

**Methods:** A guidebook on the standard operating procedures and conduct was produced by AFPM's QIP and Internet Technology team. The Practice visits are conducted once a year by trainees' mentors. The QIP includes real time observation of the trainee's consultation skills (precepting) and case-based discussion based on trainees' previous management. A half-day training is given to all mentors on the conduct of precepting and case-based discussion and how to give constructive feedback for remediation. Due to the pandemic constraints, the initial Practice Visits were conducted online. From 2023, with the easing of the pandemic, some face-face sessions have commenced.

**Results:** From the feedback from two intakes of 173 trainees who had undergone one individualised case-based discussion and precepting session, >85% agreed that these sessions were useful to improve their clinical competency. More than 50% agree that the QIP process was easy. The difficulty lies in scheduling the precepting sessions due to trainees' and mentors' work schedules.

**Conclusion:** In conclusion, QIP Practice Visits are useful to improve trainees' clinical competency skills, enable closer interaction between Mentor and Trainee and should be continued.



## POSTER ABSTRACTS

### Poster Abstract P1

#### Medication Adherence and its Associated Factors: Implication on Glycemic Control in Type 2 Diabetes Mellitus Patients in Suburban Primary Care

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**Introduction:** Medication adherence and metabolic control remain suboptimal amongst diabetics in Malaysia, despite clear benefits of lowered vascular complications and mortality risk.

**Objective:** This study aimed to examine factors associated with medication adherence and glycemic control in type 2 diabetes mellitus patients in primary care.

**Methods:** A cross-sectional study was conducted in a health clinic in the Pagoh suburb, Johor, where 386 subjects were recruited using systematic random sampling. Data was obtained using a validated 7-item structured questionnaire, glycated hemoglobin test (HbA1c) and review of patients' medical records. Logistic regression analysis was performed to determine factors associated with diabetes medication adherence and glycemic control.

**Results:** The mean patient age was 60.04 ± 10.75 years and HbA1c 8.3% ± 2.0 in this study. Approximately 60.3% of participants were adherent to their medication, and a younger age was significantly associated with medication adherence (adj OR 0.959; CI 0.934–0.985). Factors associated with glycemic control were medication adherence (adj OR 2.688, 95% CI 1.534–4.708), combined oral medications (adj OR 5.604; CI 3.078–10.203), combined oral medications with insulin (adj OR 23.466; CI 8.208–67.085), insulin only (adj OR 6.528; CI 1.876–22.717), age (adj OR 0.954; CI 0.923–0.986) and Malay ethnicity (adj OR 0.284; CI 0.101–0.794).

**Conclusion:** Poor medication adherence and glycemic control is a prevalent phenomenon at primary care level, especially among the elderly. Targeted counseling should be made to empower diabetics especially those predisposed to poor adherence and control to improve these parameters and reduce overall morbidity and mortality.

### Poster Abstract P2

#### Prevalence of burnout and its associated factors among healthcare providers in government health clinic in Kuantan, Pahang during Covid 19 pandemic.

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**Introduction:** Burnout is a psychological syndrome of emotional exhaustion, depersonalisation, and reduced personal

accomplishment that can occur among individuals who work with others in some capacity, especially in demanding jobs like healthcare professionals. A high level of burnout in healthcare providers has been associated with decreased work efficiency. The aim of this study was to identify the extent of burnout among them and to identify its associated factors.

**Objectives:** To determine the prevalence of burnout and its associated factors among healthcare providers in government health clinics in Kuantan during Covid 19 pandemic.

**Methods:** In this cross-sectional study, healthcare providers, consisting of doctors, nurses, medical assistants and pharmacists in a government health clinic in Kuantan, Pahang, were studied. Oldenburg Burnout Inventory was used for this study which consists of 16 questions. The mean score was used to categorise the level of burnout.

**Results:** A total of 332 respondents were included. The mean age was 37.25 years, and 85.5% were females. Among them, 56% were nurses, 22.6% were doctors, 12% were medical assistants, and 9.3% were pharmacists. This study revealed that 61.4% of the respondents have high burnout. There was significance association between high burnout with race (AOR=9.42, 95% CI= 1.75, 50.65, p=0.009), position as medical assistant (AOR=2.99, 95% CI=1.08, 8.31, p=0.035), being Covid positive patient (AOR=0.38, 95% CI=0.15, 0.96, p=0.040) and perception of underpaid (AOR=2.42, 95% CI=1.26, 4.68, p=0.008).

**Conclusion:** The prevalence of burnout among healthcare providers in this study was lower than in previous studies. However, it is not a negligible number for us. Ameliorating burnout among them should be a key priority for the sustainable care of the patients during the pandemic.

### Poster Abstract P3

#### Mental help seeking attitude and psychological wellbeing among foundation students in the midst of COVID-10 pandemic

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**Introduction:** The global covid-19 pandemic had affected adolescents from all over countries either mentally, physically even socially. It is known that adolescence is a fragile period and common mental disorders are known to manifest during this time. The covid pandemic has caused a significant increment in the prevalence of mental health illness among them, yet the help seeking is still low.

**Objectives:** Hence, we aim to determine the mental help seeking attitude among adolescents and factors associated as well as their psychological wellbeing during the Covid-19 pandemic.

**Methods:** A cross sectional study was conducted among the 345 foundation students, age 18 to 20 years old, from a

University in Klang Valley. Participants are required to complete an online questionnaire inclusive the sociodemographic details, Depression Anxiety Stress Scale 21 (DASS21), Mental Health Literacy Scale (MHLS), Self-Stigma of Seeking Help scale (SSOSH) and Mental Help Seeking Attitude Scale (MHSAS). Multiple linear regression analysis was performed to identify associated factors towards mental help seeking attitude.

**Results:** The mean of mental help seeking attitude is slightly higher, 50.98 ±10.39 compared to previous similar study done prior the pandemic. 20.9% of participants found to be psychologically distress due to the pandemic. The significant factors associated with mental help seeking attitude were psychological wellbeing ( $\beta=0.106$  (95% CI: 5.04, 0.35)  $P<0.25$ ), self-stigma of help seeking ( $\beta=-0.34$  (95% CI: -0.73, -0.38,  $p<0.01$ ), mental health literacy scale ( $\beta=0.25$  (95% CI: 0.13,0.31)  $p<0.01$ ) and availability of mental health service facility ( $\beta=0.09$  (95% CI: -0.09, 4.83)  $p<0.05$ ).

**Conclusion:** Availability of mental health service, low self-stigma and high mental health literacy associated with positive mental help seeking attitude among adolescents during the covid-19 pandemic. Therefore, continuous effort must be intensified in order to reduce self-stigma and increase awareness of mental health in this population.

#### Poster abstract P4

##### Patient Preferences in Selecting a Primary Care Provider: A Qualitative Study in Singapore

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**Introduction:** Continuity of care by a dedicated well-trained primary care physician (PCP) has been shown to improve the health outcomes of patients with non-communicable diseases (NCDs). In the Singapore fee-for-service primary care system, they can choose to consult any PCP in either a public (polyclinic) or private primary care (GP) clinic, resulting in potential fragmented care risk due to doctor-hopping. Decision by these patients in selecting their preferred PCP based on personal and other factors remains unclear.

**Objectives:** This study aims to explore the personal factors influencing the choice of PCP among patients with NCDs in primary care.

**Methods:** This qualitative research study conducted in a typical polyclinic involved in-depth interviews of patients with NCDs. Purposive sampling was implemented to enrol patients who had previously consulted both polyclinic and GP clinics. Interviews were audio-recorded and transcribed. Data was coded and analysed using thematic content analysis to identify emerging themes relating to physician factors.

**Results:** Twenty-one Asian patients aged 38 to 82 years were interviewed. They preferred PCPs who showed empathy and compassion, and had an approachable, pleasant, and genuine demeanour. They valued the PCPs' verbal, non-verbal and listening skills. In terms of professional qualities, patients wanted PCPs to demonstrate competency and a patient-centred approach to care. Some patients selected their PCP

based on compatible age and gender that they felt comfortable with. Establishing good rapport with their PCP and maintaining continuity of care were deemed as major factors in their PCP selection.

**Conclusion:** Patients tended to select their PCP based on their personal characteristics, interpersonal skills, professional attributes, demographics, and the physician-patient relationship. Understanding such factors can assist the PCPs to mould their behaviour and patient-centric care approach, sharpen their communication skills in order to establish a trusting relationship with their patients.

#### Poster Abstract P5

##### Health Seeking Behaviour for Hearing Loss Among Elderly: A Qualitative Study in University Malaya Medical Centre (UMMC)

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**Introduction:** Hearing loss impacts communication, functional ability, decreased quality of life, cognitive decline, and depression. However, it is under-recognised and undertreated. The reasons behind this have not been extensively explored.

**Objective:** The aim of this study is to explore the health seeking behaviour among the elderly who are experiencing hearing loss

**Methods:** This qualitative study was carried out in University Malaya Medical Centre, located in Kuala Lumpur, Malaysia, involving a total of 22 participants. In-depth interviews were carried out on the elderly with hearing impairment.

**Results:** The emerging themes which influenced health seeking behaviour for hearing loss were: the belief that hearing loss is a part of ageing, other personal beliefs and experiences, the severity of symptoms, various coping strategies in dealing with hearing loss, the roles of healthcare providers, variation in the sources of information, individual socioeconomic status, and cost of hearing aids. Hearing loss is commonly considered as a natural process of ageing, especially if it is stated as such by a healthcare provider. Hearing loss is also sometimes viewed as a negative experience, and religious practices are used as the main coping strategy to manage hearing loss. Only severe hearing loss seems to urge patients to seek treatment, whereas patients who perceive their hearing loss to be less severe tend to opt for self-management. The healthcare provider remains an important factor in health seeking behaviour. When seeking treatment, information technologies serve as the main information source for patients, other than from healthcare providers, family, and friends. The cost of hearing aids may deter treatment seeking.

**Conclusion:** In conclusion, there is still a need to improve health literacy among the elderly with hearing loss in Malaysia through the delivery of information using education programs in healthcare centres and by encouraging the usage of hearing aids.

**Poster Abstract P6****Knowledge, Attitude and Practices of Indigenous People Towards Non-Communicable Diseases In Bera, Malaysia: A Community-Based Study**

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**Introduction:** With the current trend of increasing non-communicable diseases (NCDs) such as hypertension, diabetes and dyslipidemia worldwide and in Malaysia, a comprehensive study is essential to elucidate the local population's knowledge, attitude and practice (KAP) toward NCDs.

**Objective:** The study investigated the KAP status towards NCDs and the association with sociodemographic background among Orang Asli adults of the Semelai subgroup in Central Pahang, Malaysia.

**Methods:** A cross-sectional study was conducted among 251 Semelai adults in the Bera district, Pahang. Socio-demographic and KAP data were collected through face-to-face interviews and analysed using SPSS version 22.0. Continuous data were expressed descriptively as mean, median, and standard deviation. Bivariate analysis was performed to test the association between respondents' socio-demographic factors and the KAP score.

**Results:** Most of the respondents were females (57.4%), married (82.5%), completed primary school (75.3%), animism believers (83.3%), self-employed (75.3%) and earning less than RM1000 (87.6%). The age of the respondents ranged from 18 to 77 years old, with a mean (standard deviation) age of 41.1 (13.9). The prevalence of known type-2 diabetes mellitus (T2DM), hypertension and dyslipidemia were 9.6%, 20.7% and 8.8%, respectively. About 23.1% of respondents have a family history of chronic disease. Regarding KAP, only 12.7% demonstrated good knowledge while 35.5% depicted good practice in prevention and treatment. Nevertheless, more than half (59.8%) have a positive attitude towards chronic diseases. Higher household income and education levels were positively associated with higher KAP scores ( $p < 0.001$ ).

**Conclusion:** Low-to-moderate percentage of Orang Asli in this study have good knowledge, attitudes, and practices towards NCD. Low levels of KAP are significantly associated with poverty and poor education. Improving Orang Asli's education and eradicating poverty may assist to improve their KAP towards healthiness, thereby enhancing their well-being and disease intervention.

**Poster Abstract P7****The effect of an integrated multi-component telemonitoring system on the behaviour change of Asian adults with type-2 diabetes mellitus to attain their glycaemic control: A qualitative research study**

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**Introduction:** Telemonitoring (TM) is useful to remotely monitor a patient's health status by gathering the data such as blood pressure or capillary glucose and been shown to improved outcomes such as all-cause mortality and reduction of HbA1c in patients with type-2 diabetes mellitus (T2DM). However, it is unclear on the mechanism of how TM has led to modification of health behaviour.

**Objective:** This study aims to explore and understand the effect of an integrated multi-component TM system on the behaviour change of Asian adults with T2DM towards self-efficacy in achieving better glycaemic control.

**Methods:** A qualitative study was conducted using individual semi-structured interview of the participants with suboptimal HbA1c who underwent 6-months TM and intervention by the tele-health nurse. Data was transcribed, familiarised, coded, and analysed using thematic analysis. The Health Belief Model (HBM) and Theory of Planned Behaviour (TPB) were adopted as the underpinning theoretical frameworks to explain the behavioural change.

**Results:** Six themes emerged to explain the effects of multi-component TM system on participants' health-seeking behaviour. It was achieved through modification of perceived susceptibility and severity by prompting self-reflection of health status and disease control, strengthening perceived benefits by allowing recognition of the association between food consumption and their glycaemic control, overcoming perceived barriers via the multi-component TM system to enhance health-literacy, supporting cues for action through automated reminder system in promoting treatment adherence, and raising self-efficacy by improving self-care behaviour.

**Conclusion:** The study demonstrated that multi-component TM system could modify health-seeking behaviour by applying the behavioural change theories. Modification of health belief such as perceived susceptibility, accentuate perceived benefit, and overcoming the perceived barriers may lead to motivation for change, while cues for action may nudge patient to take action. Concurrently, TM allows the patients to take control of their behaviour by changing their attitude and empower them to individualised the change.



### Poster Abstract P8

#### Healthcare System and Policy Related Factors Influencing the selection of primary care provider in Singapore: A Qualitative Research Study

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**Introduction:** Singapore has a dual fee-for-service primary care system. Patients can opt to consult in either public polyclinics or private general practitioner (GP) clinics. Its new national Healthier SG program recommends patients to enroll with a single primary care provider (PCP) for care continuity. Patients' decision-making in selecting their preferred PCP remains unclear.

**Objective:** The study aimed to explore the factors relating to the healthcare system and policy which influence their choice of PCP.

**Methods:** A qualitative research study was conducted at a polyclinic, utilizing purposive sampling to recruit adult participants who had sought care at both polyclinics and GP clinics. They underwent in-depth interviews that were audio-recorded and transcribed. The qualitative data was coded and analysed using thematic analysis to identify the factors influencing their PCP selection.

**Results:** 21 patients aged 38 to 82 years of age were recruited. They expressed a preference for easy accessibility, including clinics located near their homes with convenient appointment system and extended hours of operation. They sought to minimize time spent in clinics, preferring those with shorter wait time for consultation, medication collection and lesser crowd. A one-stop clinic, with multiple services including laboratory, radiology, and physiotherapy services in one location, was a major factor. The availability of medication delivery service appealed to them. Many patients find telehealth service convenient but some still prefer face-to-face consultation. Patients sought affordable out-of-pocket consultation fee at the clinic, which offered government subsidies or company insurance coverage.

**Conclusion:** Patients' selection of PCP is influenced by clinic accessibility, wait time, duration of visit, comprehensive services, and affordability. Understanding patients' preferences potentially allows PCPs to tailor their clinic set-up to better meet patients' preferences and to provide continuity of care especially for those with chronic diseases.

### Poster Abstract P9

#### Diabetic Kidney Disease and Glycaemic Control in Type-2 Diabetes at Primary Care in Kuantan, Pahang

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**Introduction:** Diabetic kidney disease (DKD) is the primary cause of end-stage kidney disease, leading to renal and cardiovascular complications. Treatments achieving blood sugar levels under control can delay the progression of the disease.

**Objective:** This study aims to determine the prevalence of DKD in selected primary care clinics in Kuantan, Pahang and its association with glycaemic control among T2DM patients.

**Methods:** A retrospective study of 304 T2DM patients' records, aged  $\geq 18$  years, was selected by systematic random sampling in four government health clinics in Kuantan. Statistical analysis was done in the SPSS version 26.0, using Pearson's chi-square test and binomial logistic regression analysis.

**Results:** Among the respondents, 50.3%, 69.1%, and 57.6% were aged  $\geq 60$  years (mean age of 59.1 years), Malay and female, respectively. 82.6% had diabetes  $\geq 5$  years (mean duration of 10.1 years). Most of them had at least two comorbidities (90.5%), including hypertension or dyslipidaemia, on oral glucose-lowering drugs only (56.9%) and were overweight (76.4%). The prevalence of diabetic kidney disease in T2D was 55.3% (95% CI = 54.8-55.9%). Multiple logistic regression showed that DKD was associated with age group  $\geq 60$  years old (AOR= 1.610 [1.19; 2.17];  $p=0.02$ ), uncontrolled blood pressure (AOR= 1.658 [1.27; 2.16];  $p<0.001$ ), and poor glycaemic control (AOR= 6.213 [3.30; 11.73];  $p<0.001$ ).

**Conclusion:** More than half of T2DM patients suffer from DKD. Those with poor glycaemic control have a six times higher risk of having DKD than those with good glycaemic control. A targeted educational program, early screening and monitoring, and aggressive treatment in T2D are vital to achieving an HbA1c target of less than 7% to curb the progression of DKD.

### Poster Abstract P10

#### Facilitators of domiciliary care services at hospital Seberang Jaya: A qualitative study on the views of the healthcare professionals

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**Introduction:** The domiciliary service comprises of medical and rehabilitation services done at the home of patients to ensure uninterrupted care upon early discharge from hospital, render support to the family members in training the caregiver and to reduce readmission by providing quality medical care at home and in the community. However, the successful implementation of the programme varied in different healthcare facilities (141 Health districts) involved.

**Objective:** To explore the facilitators of domiciliary services at Hospital Seberang Jaya (HSJ), Penang.

**Methods:** A total of 53 respondents (34 trained nurses, 8 sisters, 5 matrons, 4 occupational therapists and 2 physiotherapists) involved in domiciliary care from the medical, surgical, orthopedic and paediatric wards, of HSJ were

interviewed. A semi-structured questionnaire was used to guide the interview. The interviews were done in homogenous focus groups or as individual interviews, which were, audio recorded, transcribed and thematically analysed.

**Results:** The factors that facilitated domiciliary care were health system factors (ongoing measures to update domiciliary knowledge and the monitoring of it, having domiciliary file in ward as reference, ongoing standardised approach, cluster hospital concept that helped decant patients to avoid prolong hospitalisation, a dedicated person in charge), health professional factors (teamwork, convincing and synchronised explanation from doctors and all nursing teams, having pre planned discharge), patient and caregiver factors (single identified appropriate caregiver, locale convenience of Health facility near home) and finally the proactiveness, motivating and supportive factors that encompasses all 3.

**Conclusion:** To facilitate a successful domiciliary care, health system factor health professional factors, patient and caregiver factors need to be addressed. Implementation of domiciliary care will involve all the stakeholders to work for a common goal.

#### Poster Abstract P11

### A Qualitative Research Study Exploring the Attitude of Mothers Towards A Smartphone Application for Neonatal Jaundice Monitoring

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**Introduction:** Neonatal jaundice (NNJ) is common. Non-invasive NNJ monitoring uses Transcutaneous Bilirubinometer, a specialised equipment only available in healthcare facilities. This method of NNJ monitoring necessitates inconvenient in-person visits for new-borns and exposure to healthcare facilities. Using mobile health (mHealth) application (app) is a novel system that allows mothers to monitor their new-borns' NNJ remotely. However, end-users' views on this mHealth app are unknown.

**Objective:** The study aimed to assess the attitude of Singapore mothers towards using a mHealth app for NNJ monitoring.

**Methods:** Mothers attending video consults for early postpartum care in two primary care clinics were invited to watch an instructional video on monitoring NNJ using a mHealth app. An independent researcher conducted in-depth interviews with twenty-five mothers assessing their views on using a mHealth app for NNJ monitoring based on the video viewed. All interviews were audio-recorded, transcribed verbatim, checked, and managed using Nvivo qualitative data management software. Data analysis was done by thematic analysis. The themes identified were grouped under perceived usefulness and ease of use.

**Results:** Mothers valued the perceived convenience and objectivity offered by the mHealth app to monitor NNJ remotely. However, they felt that its perceived applicability is limited in severe jaundice. Mothers raised concerns about the

accuracy of the app and expressed their lack of confidence in using it. Nevertheless, they alluded to improving intent to use by receiving adequate guidance from healthcare providers and validating the accuracy of the application. Mothers proposed pairing teleconsultation with the mHealth app to enhance its adoption.

**Conclusion:** Mothers had positive attitude towards using mHealth app for NNJ monitoring. The needs of end-users should be reflected in the development and implementation of the mHealth application to increase successful adoption. Combining the mHealth app and teleconsultation to monitor NNJ remotely represents an accessible and acceptable care delivery model.

#### Poster Abstract P12

### Depression, anxiety and stress levels during COVID-19 pandemic among frontliners of IIUM hospital and Kuantan campus and its associated Factors

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**Introduction:** The COVID-19 pandemic has instigated a substantial physical and psychological burden on the frontliners globally, leading to physical and psychiatric illnesses, reduction in productivity and burnout. Assessing their mental health status is essential in providing effective and efficient mental health care.

**Objective:** To investigate depression, anxiety, and stress levels, and associated factors among the frontliners of International Islamic University Malaysia (IIUM) Hospital and Kuantan Campus during the COVID-19 pandemic.

**Methods:** A cross-sectional study was conducted among 261 frontliners working in IIUM hospital and 125 from the Kuantan campus from March 2021 to March 2023 using a self-administered validated DASS-21 questionnaire for depression, anxiety and stress. The data were analyzed using descriptive statistics, Chi-Square and Fisher's Exact tests.

**Results:** Among the 386 respondents, 82.1% were categorized as clinical frontliners, 65.8% were female, and 65.8% married. The overall prevalence of depression was 15.8%, anxiety was 29.5%, and stress was 9.3% among the frontliners. They were not different statistically between the clinical and non-clinical frontliners; or between the IIUM Hospital and on-campus frontliners. The frontliners with post-traumatic event had a significant association with depression and anxiety ( $p < 0.001$  and  $0.001$ , respectively), and those with chronic disease(s) were significantly associated with anxiety ( $p=0.034$ ).

**Conclusion:** More than one-fourth of frontliners suffered



from anxiety during the COVID-19 pandemic, and 9-15% experienced depression and stress. Those with post-traumatic events (such as a terminal disease, disaster, divorce, and death) or with chronic disease(s) require(s) additional support in coping with their mental health burden. There was no significant difference in anxiety, depression and stress levels between the clinical and non-clinical or between hospital-based and on-campus frontliners, which mandate comprehensive mental health promotion and timely intervention to all frontliners regardless of their post or area of services.

Healthcare provider should pay special attention towards the carers' wellbeing and their unmet needs as they are the integral part of the post stroke care in the community.

### Poster Abstract P13

#### Postpartum Depression (PPD) detection-family medicine postgraduate trainee knowledge, attitude and practice

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**Introduction:** Postpartum depression can compromise maternal and child health. However, the detection rate for PPD detection is still low.

**Objective:** This study aims to determine the knowledge, attitude, and practice among Primary care physicians.

**Methods:** This cross-sectional study was conducted amongst postgraduate family medicine trainees of the Academy of Family Physicians of Malaysia. The researchers used a validated four section questionnaire developed from previous studies with addition of 3 video vignettes. It consists of 24 items, 12 items and 6 items for knowledge, attitude, and practice respectively. The video vignettes have 2 questions each to assess competency in practice (depicting normal postpartum period, postpartum blue and postpartum depression). Standard setting was conducted by three family medicine specialists and three psychiatrists, providing pass mark of knowledge items as 54.2%. The pass mark was standard set by three family medicine specialists and three psychiatrists. The videos were validated by a community psychiatrist and respondents were deemed competent in practice if they correctly diagnosed all video vignettes.

**Results:** A total of 85 respondents took part in this study giving a response rate of 69.7%. The knowledge component was passed by 97.6% (n=83) of the respondents, with a mean score of 70.3%. 61.2% (n=52) of the respondents were competent in PPD detection. Overall, there was no significant association between respondents' gender, years of service, family history, experience, and passed knowledge with competent practice. Only a minority (12.9%) often screen for PPD, even though the majority (64.7%) were aware of its existence. Most

respondents (88%) believed that PPD screening is required, and 92.1% were familiar with PPD screening techniques.

**Conclusion:** Family medicine postgraduate trainee has good knowledge and a positive attitude toward PPD. However, they have average competency to recognize PPD. Having adequate knowledge does not ensure competency in PPD management.

### Poster Abstract P14

#### Management of Co-occurring Coronary Heart Disease and Anxiety Disorder through Family Medicine Approach

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**Introduction:** "Coronary artery disease or CAD is the leading cause of death in the world and in Indonesia. The physiological prognosis of CAD is influenced by psychosocial factors including anxiety. The process of treatment in the continuum of care has an impact on the dynamics of the patient, the family, and the community. Here we report the case of an adult man who presented with CAD, and underlying metabolic syndrome, and was later found to have an anxiety disorder that complicates both. The family medicine approach to comprehensively manage both CAD and Anxiety Disorder has helped not only the patient but also improved overall family & community health."

### Poster Abstract P15

#### Association of coping mechanisms with medication adherence among young people living with HIV (PLHIV)

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**Introduction:** As young PLHIV will need to take HAART for life, there is a need to understand their coping mechanisms in living with the disease. Patients with good coping mechanisms result in adherence to their medications and hospital follow up, thus leading to good disease outcomes and improved life expectancy. The pattern of coping strategies were assessed using the 28-item Brief COPE questionnaire in English and Malay language which was validated and found to have good internal consistency.

**Objective:** The aims of this study were to determine the pattern of coping mechanisms in young PLHIV and its association with medication adherence.

**Methods:** This was a cross sectional study amongst young PLHIV patients (aged 18-40 years old) attending two HIV clinics in Klang Valley. Data was collected between February to August 2022. Statistical analysis included descriptive statistics, single and multiple logistic regression.

**Results:** A total of 395 respondents were recruited into

the study. The mean scores for each coping mechanism are: 1) problem-focused 2.98 (SD 0.62), 2) emotion-focused 2.40 (SD 0.48), 3) dysfunctional 1.84 (SD 0.44), 4) religion/spirituality 3.07 (SD 0.97). Majority of the respondents (66.8%) were adherent to their HAART. Respondents who had longer duration of medication [OR:1.014 (95% CI: 1.002,1.026 )] and those who adopted less religion/spirituality coping mechanisms [OR: 0.495 (95% CI:0.246, 0.997)] were found to be significantly associated with medication adherence.

**Conclusion:** This study found that religious or spirituality coping was negatively associated with medication adherence amongst young PLHIV. Future research should explore the reasons behind this as there are stakeholders who recommend that religion/spirituality approaches be offered as part of a patient's holistic management.

### Poster Abstract P16

#### Feasibility of the MAwar Web App to Increase Intentions for Breast and Cervical Cancer Screening

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**Introduction:** Early detection through breast and cervical cancer screenings is crucial for improving outcomes. However, uptake of screening is often low, particularly in developing

countries. Digital health interventions such as web app has the potential to increase screening uptake by providing accessible information and reminders.

**Objective:** This study aimed to evaluate the feasibility of a web-based MAwar app to increase intentions of women to undergo breast and cervical cancer screenings.

**Methods:** This was a mixed method study, part of a larger study (Effectiveness of an Interactive Web Application to Motivate And Raise Awareness on Screening of Breast and Cervical Cancers - MAwar study). We developed the app together with the stakeholders (healthcare professionals, patients, public representatives, and technical experts) using the Quality Function Deployment Framework. We recruited 30 women aged 20 years who attended a public primary care clinic in Klang, Malaysia. We collected participants' socio-demography data and they were asked to use the MAwar app, which incorporated breast and cervical cancer risk calculator and information on screening. After using the app, participants answered a validated 10-questions System Usability Scale (SUS) with a 5-point scale. Overall score of 68 indicates high usability. Six focus group interviews with 5 participants each explored view on app content/layout and facilitators/barriers to using the app for cancer screening. The SUS data was analyzed descriptively and focus group interviews were analyzed thematically.

**Results:** Participants rated the usability of the MAwar app highly with an overall SUS score of 84/100. The app was found to be user-friendly and informative. Facilitators to use included the risk calculator, "one-stop-centre" information and clear instructions. Barriers to use included a lack of narration and language options.

**Conclusion:** In conclusion, the MAwar app is feasible to use with some areas that require improvement before implementing it on a larger scale.

