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Comprehensive Primary Healthcare Collaboratory
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Primary Healthcare Reform: Towards a Better Future

ABSTRACT

Abstract Book

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Contents

Abstract No.: 200127

Advances in Drug Allergy & Penicillin Testing (ADAPT): A randomized crossover trial for the impact of a drug allergy education course for primary care physicians and non-specialists in Hong Kong

First Author: Hugo MAK
Co-Author(s): Sophia CHAN, Rishabh KULKARNI, Jasmine LEE, Philip LI, Michaela LUCAS

Purpose:

The consequences of drug allergy remain a global health concern. Drug allergy is often a neglected topic and many non-specialists lack sufficient knowledge or confidence in evaluating or managing this common condition. Evidence-basZed interventions to better equip non-specialists to tackle drug allergy are needed. The aim of the study is to evaluate the effectiveness of an intensive educational course on drug allergy knowledge and practice of non-specialists in Hong Kong.

Methods:

A randomized crossover trial (NCT06399601) was conducted among practicing physicians and nurses participating in an intensive drug allergy course—Advances in Drug Allergy & Penicillin Testing (ADAPT). Participants' baseline knowledge and self-reported practices were assessed with standardized questionnaires (scored from 0 to 100, with "satisfactory" defined as ≥60/100). Participants were randomized into two cohorts and attended ADAPT at different time points. Serial responses before and after the course were compared within and between cohorts.

Results:

Seventy participants (25 physicians, 45 nurses) randomized into two groups completed the course. Baseline drug allergy knowledge (58.0±19.9) and self-reported practice (36.9±24.3) were unsatisfactory among non-specialists, with significantly lower scores from nurses than physicians in both domains (knowledge: 49.0±17.4 vs. 74.0±12.7; practice: 32.1±21.3 vs. 53.3±23.1; all $p<0.001$).,,Following ADAPT's completion, participants demonstrated significant improvements in knowledge (58.0±19.9 vs. 77.7±15.9, $p<0.001$) and self-reported practice (36.9±24.3 vs. 71.0±20.2, $p<0.001$). Almost all participants agreed that the course improved their clinical knowledge and practice.

Conclusions:

ADAPT, an intensive drug allergy educational course was effective in improving drug allergy knowledge and practice for non-specialists. Further longitudinal studies are required to evaluate long-term impact.

Abstract No.: 200114

An ERP Study on Self-Identification in the context of culture and language

First Author: Yao WANG
Co-Author(s): Emma BUCHTEL, Tony CHUI, Sijie DING, Junling GAO, Siuman NG

Purpose:

Response to name can be largely influenced by factors like self-identification and cultural preference, particularly in multicultural societies like Hong Kong. This study investigates the self-referential effects of names in an intercultural educational context of Hong Kong people. This may help to understand individuals' identification with different linguistic and cultural backgrounds.

Methods:

The study employed a 2x2 factorial design with Chinese names (CH) and English names (EN), each including self-names (SN) and unfamiliar names (UN). Electroencephalogram (EEG) data were collected from 67 participants using a 128-channel EEG system in a quiet room. Each name type (CHUN, CHSN, ENUN, ENSN) was presented 60 times in random order.

Results:

Event-related potential (ERP) analyses revealed significant differences in mean amplitudes during the P300 (300-450 ms) component across conditions (CHUN=1.87±1.95 μV, CHSN=3.12±2.46 μV, ENUN=1.69±1.88 μV, ENSN=2.59±2.39 μV). ANOVA results ($F(1, 66) = 9.349$, $p = 0.003$, $\eta^2 = 0.124$) highlighted the influence of language on self-reference effects, indicating distinct cognitive responses to Chinese and English names. However, the self vs. other name factor showed even higher significance ($F(1, 66) = 70.664$, $p < 0.001$, $\eta^2 = 0.517$), suggesting that self-referential processing is a more dominant factor in cultural identification than language alone.

Conclusions:

These findings demonstrate the complex interplay between language and self-reference in shaping cultural identities within multicultural environments. By understanding the neural mechanisms underlying self-referential processing in different linguistic contexts, educators can develop culturally sensitive curricula that foster engagement, inclusivity, and psychological well-being among students from diverse backgrounds.

Abstract No.: 200138

Curricular Innovation: A Novel and Outcomes-Based District Health Centre Clinical Attachment for MBBS II Students

First Author: Linda CHAN
Co-Author(s): Emma BILNEY, Julie CHEN

Purpose:

The COVID-19 pandemic severely disrupted clinical education, particularly the preventive health service visits made by MBBS II students through the Professionalism in Practice (PIP) programme. When public preventive health facilities remained unavailable despite eased restrictions, students were required to reflect on consultation videos instead. Due to technical issues and a lack of authenticity, student feedback was suboptimal, with only 65-69% rating the experience as good or above. In response, a novel clinical attachment at District Health Centres (DHCs) was introduced.

Methods:

In collaboration with stakeholders, including the Primary Healthcare Commission and DHC representatives, a clinical attachment programme was developed for all MBBS II students across DHCs in Hong Kong. The curriculum, co-created with MBBS IV students and an intern doctor, had four intended learning outcomes (ILOs) and was designed using an outcome-based approach. Experiential learning activities and assessments were constructively aligned with these ILOs. Post-implementation evaluation was conducted using a Qualtrics survey, incorporating both quantitative and qualitative methods.

Results:

Over 92% of students found the DHC clinical attachment to be 'effective' or 'very effective' in meeting the ILOs. The clinical attachment provided a deeper understanding of DHC structures and services, hands-on experiences, and exposure to allied health services. However, limited patient interactions, occasional lengthy introductory presentations, and confusing DHC scheme arrangements were mentioned as some of the limitations.

Conclusions:

While the DHC clinical attachment was successful, areas for improvement were identified. Enhancing patient interaction and streamlining logistics will further strengthen this unique experiential learning opportunity for the next academic year.

Abstract No.: 200094

Empowering Pharmacists to Promote Oral Health in Primary Care

First Author: Donald CHONG

Purpose:

At the end of this session, participants will be able to:,1. Get an overview on the epidemiology, risk factors, and systemic implications of common oral health conditions,2. Demonstrate a comprehensive understanding of oral anatomy, pathology, and preventive VS restorative dentistry principles,3. Confidently counsel patients on the selection and proper use of common oral hygiene products,4. Understand pharmacists' potential role in oral health education and referrals,5. Develop and implement oral health promotion programs within their communities

Methods:

The session will cover the following key topics by means of a sharing in a class for community primary care,1. Epidemiology and Impact of Oral Health Conditions:,,2. Pharmacists' Role in Oral Healthcare:,,3. Management of Oral Health Conditions from Pharmacists' Perspective:,,4. Collaborative Primary Healthcare:

Results:

Pharmacists are highly accessible healthcare providers with a wealth of knowledge on medications and OTC products, in terms of their precautions, interactions and effects on human body. By equipping pharmacists with a deeper understanding of oral health, they can play a pivotal role in:,• Identifying and managing oral health concerns during routine patient interactions,• Promoting preventive oral care and healthy habits among their patient population,• Collaborating with dental professionals to ensure coordinated and holistic patient care

Conclusions:

Students will,Get an overview on the epidemiology, risk factors, and systemic implications of common oral health conditions,,Confidently counsel patients on the selection and proper use of common oral hygiene products,,Understand pharmacists' potential role in oral health education and referrals

Abstract No.: 200076

Enhancing health professionals' communication skills and cultural competence for the LGBTQIA+ community in primary healthcare settings

First Author: Sam Wing Sum LI
Co-Author(s): Winston GOH, Yiu Tung SUEN, Ling Yin TSANG, Gordon Chun Bun WONG

Purpose:

To develop an introductory booklet relevant to Hong Kong's primary healthcare settings to facilitate inclusive communication with the LGBTQIA+ community, an umbrella term for individuals with diverse sexual orientation, gender identity, gender expression and sexual characteristics (SOGIESC).

Methods:

A three-staged approach was adopted. Firstly, a scoping literature review and a focus group study with local health professionals and students who identified as LGBTQIA+ were conducted to harness overseas and local experience in promoting inclusive communication. Secondly, the booklet was developed from multidisciplinary working group meetings with expertise in family medicine, psychiatry, public health and social science. Thirdly, academic talks were held to improve the practicality of the booklet with feedbacks from local hospitals, clinics, and LGBTQIA+ non-governmental organisations.

Results:

Over 30 health professionals and students participated in the focus group. The booklet was then drafted by the working group in two parts: i) Introduction to LGBTQIA+ health and challenges; ii) Basic terminology and concepts on sex, gender and sexual orientation, as well as obsolete or inappropriate terms to be avoided. The booklet contents were tested in over 5 health talks and workshops attended by over 100 local health professionals and students. There were suggestions to further enrich the booklet with clinical scenarios which illustrate the importance of cultural competence and updated knowledge on LGBTQIA+ health.

Conclusions:

An open and participatory process can address the gaps in health professional training regarding primary healthcare excellence for the LGBTQIA+ community.

Abstract No.: 200131

Exploring the Integration of Red Culture and Education 4.0 in Undergraduate Nursing Talent Cultivation

First Author: Da CHEN

Purpose:

To explore a novel talent cultivation model in undergraduate nursing education that integrates Red Culture with Education 4.0 principles, addressing the challenges and demands of modern nursing education while enhancing students' innovative thinking and practical skills.

Methods:

The School of Nursing at Zunyi Medical University developed a talent cultivation model by incorporating Red Culture into the educational framework and integrating it with Education 4.0 concepts. This approach included the establishment of national-level experimental platforms, such as virtual simulation courses and nursing maker education, to foster innovation and practical abilities among students.

Results:

The integration of Red Culture with innovative educational concepts led to the creation of a distinctive nursing talent cultivation model that not only preserves cultural heritage but also promotes innovation. This model successfully enhances students' competencies, aligning with the goals of contemporary nursing education and the "Healthy China 2030" initiative.

Conclusions:

The integration of Red Culture with Education 4.0 principles has enabled Zunyi Medical University's School of Nursing to develop a unique and effective undergraduate nursing talent cultivation model. This approach not only preserves and promotes Red Culture but also successfully incorporates modern educational technologies, enhancing students' innovative thinking and practical skills. The results indicate that this model significantly improves the overall quality of nursing graduates, aligning with the demands of the healthcare industry. This innovative model offers valuable insights for other institutions seeking to reform nursing education and contribute to the goals of the "Healthy China 2030" initiative.

Abstract No.: 200122

Graph Theory Analysis demonstrates Meditation Enhances Social Connectivity in secondary school

First Author: Junling GAO
Co-Author(s): Kin Cheung LEE, Hang Kin LEUNG, Chun-chi POON, Hin Hung SIK, Bonnie Wai Yan WU

Purpose:

Social connectedness plays an important role in Hong Kong society specially in time of social discordance. Previous studies have shown that cultivation of social connectedness can happen and enhanced by education in school setting. This study investigates the impact of mindfulness on social connectivity and well-being using hyperscanning electroencephalography (EEG) and graph theory analysis.

Methods:

Twenty-six participants from a class of middle school study underwent simultaneous single-channel EEG recording during meditation and resting state sessions. Interbrain connectivity was assessed using phase synchronization and spectral coherence metrics. Graph theory analysis quantified network properties, including average path length, clustering coefficient, and small-world index.

Results:

Graph theory analysis revealed higher interbrain connectivity values during meditation (0.43) compared to rest (0.30). Meditation displayed a higher small-world index (1.8355) than rest (1.6101), indicating enhanced network efficiency and integration. The clustering coefficient suggested greater local connectivity during meditation. Alpha power (mean ± SD) was higher during meditation (9.18 ± 13.23 dB) compared to rest (7.29 ± 8.21 dB), though not statistically significant ($p = 0.124$). Alpha peak frequency (APF) showed a trend towards significance ($p = 0.057$) with slightly lower values during meditation (8.77 ± 0.42 Hz) compared to rest (8.85 ± 0.51 Hz).

Conclusions:

Meditation may foster social connectivity, as evidenced by increased interbrain synchronization and improved network properties. Frequency-based measures appear more sensitive in detecting meditation-induced changes than power-based measures. These findings highlight meditation's potential in promoting social well-being and elucidate the neural underpinnings of social interactions in classroom.

Abstract No.: 200092

Patient-educators: improving medical students' clinical skills in family medicine

First Author: Julie CHEN
Co-Author(s): Linda CHAN, Tse EMILY, Po Ling Pauline LUK, Amy NG, Esther YU

Purpose:

Communication and problem-solving skills are core competencies in a clinical consultation essential for effective and patient-centred care in family medicine. This study aimed to evaluate the effectiveness of using trained patient-educators to enhance these skills among 4th-year medical students.

Methods:

"Patient-educators' were lay people trained to role play their own clinical problem and to give feedback on communication and interpersonal skills. They were made available to students for voluntary extra consultations practice on top of the usual training. During the final assessment, students conducted a patient-centred interview with a surrogate patient (SP). Their problem-solving skill was teacher-assessed based on their written biopsychosocial problem list while clinical interpersonal skills (CIPS) were assessed by the SP using the adapted Consultation And Relational Empathy (CARE) Measure. The scores of students who had extra practice with patient-educators were compared with those who undertook the usual training using descriptive statistics and chi-square test or independent t-test, as appropriate.

Results:

224 students and 18 patient-educators participated. 108 (48%) students used the patient-educators. Overall, 42% of students improved in their CIPS, with 42.6% of users improving and 44.4% of non-users improving. However, the baseline CARE score of the user group was higher than the non-user group (27.4 vs 24.9, $p<0.001$) suggesting that users may already be proficient. A significant proportion of users improved in problem-solving for biopsychosocial diagnoses compared with non-users (43.5% vs 27.8%, $p=0.004$).

Conclusions:

Patient-educators enhanced biopsychosocial problem-solving and clinical interpersonal skills among medical students in their early clinical years of study and can be more widely utilized.

Abstract No.: 200090

Promoting Empathy and Understanding of Primary Care Needs Among Medical Students Through a Co-Developed Educational Board Game

First Author: Hei Yue NG
Co-Author(s): Kate A CHAN, Yik Hin Justin CHAN, Samiha B DUZA, Yurika KAWASAKI, Mei Li KHONG, Liane KWONG, Yat Chun Alan LIM, Po Ling Pauline LUK, Maryam Amreen MALIK, Hau Wai WONG

Purpose:

Healthcare inequality, globally perpetuated by practitioners' limited understanding of vulnerable populations' experiences, leads to poorer health outcomes. In Hong Kong, patients face unpleasant consultations due to practitioners' lack of awareness of their social realities. To bridge this gap, an interactive board game intervention was co-created with medical students to raise awareness and empathy. The project includes interviewing vulnerable populations to shape a Hong Kong-specific health determinants framework.

Methods:

The student game developers conducted research, which involved interviews with NGOs and vulnerable populations, to create a game prototype. The prototype was subsequently presented in workshops to medical students, with feedback utilized to refine it. Community members were invited to share their primary healthcare experiences to enhance the students' understanding.

Results:

Preliminary findings indicate that the board game intervention has the potential to cultivate awareness and empathy among healthcare students. Participants reported an enhanced understanding of the challenges faced by marginalized populations and a greater inclination to provide patient-centered care. The co-design approach bolstered engagement through ownership and investment.

Conclusions:

The game will be continuously refined to include a wider array of diverse vulnerable characters from Hong Kong. The long-term objective is to implement this intervention across various academic disciplines and student cohorts, fostering empathy and understanding of primary healthcare challenges among future practitioners. This project seeks to bridge the gap between healthcare providers and vulnerable populations, aiming to enhance healthcare delivery with more equity and compassion, while integrating Hong Kong-specific social determinants of health.

Abstract No.: 200039

RCT of the Advances in Drug Allergy & Penicillin Testing Course - ADAPTing Primary Healthcare Against the Drug Allergy Pandemic

First Author: Philip LI
Co-Author(s): Sophia CHAN, Michaela LUCAS

Purpose:

The consequences of drug allergy remain a global health concern. Drug allergy is often a neglected topic and many non-specialists lack sufficient knowledge or confidence in evaluating or managing this common condition. Evidence-based interventions to better equip non-specialists to tackle drug allergy are needed. To evaluate the effectiveness of an intensive educational program on drug allergy knowledge and practice of non-specialists.

Methods:

A randomized controlled trial (NCT06399601) was conducted among practising physicians and nurses participating in an intensive drug allergy course - Advances in Drug Allergy & Penicillin Testing (ADAPT). Participants' baseline knowledge and self-reported practices were assessed with standardized questionnaires (scored from 0-100, with "satisfactory" defined as ≥60/100). Participants were randomized into two cohorts and attended ADAPT at different time-points. Serial responses before and after the course were compared within and between cohorts.

Results:

Seventy participants (25 physicians, 45 nurses) randomized into two groups completed the course. Baseline drug allergy knowledge (58.0±19.9) and self-reported practice (36.9±24.3) were unsatisfactory among non-specialists, with nurses performing significantly inferior to physicians in both domains (knowledge: 49.0±17.4 vs. 74.0±12.7; practice: 32.1±21.3 vs. 53.3±23.1; all $p<0.001$).,Following completion of ADAPT, participants demonstrated significant improvements in knowledge (58.0±19.9 vs. 77.7±15.9, $p<0.001$) and self-reported practice (36.9±24.3 vs 71.0±20.2, $p<0.001$). All participants (100%) and 98.6% of participants agreed that the course improved their clinical knowledge and practice, respectively.

Conclusions:

ADAPT, an intensive drug allergy educational course was effective in improving drug allergy knowledge and practice for non-specialists. Similar specialist-led educational courses can empower and enhance multidisciplinary collaboration in primary health.

Abstract No.: 200046

The efficacy of train-the-trainer (TTT) workshops on learning physical fitness of teachers and reflecting differences in children's well-being at multiple levels in kindergartens

First Author: Hui Shine LIN

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Purpose:

This study examined the efficacy of TTT workshops that affected kindergarten teachers' understanding of physical fitness and reflected differences in children's well-being and school readiness at multiple levels.

Methods:

This is part of an ongoing clustered randomized controlled trial. We provide once-a-month e-lectures to them, a total of 10 e-lectures, which educate teachers about physical fitness and incorporate behaviour-changing techniques that support children's natural motivation toward active, healthy lifestyles. Furthermore, we will utilize the Early Development Instrument (EDI) to evaluate the children's readiness for school based on five developmental dimensions.

Results:

The results from batch 1 (total of 4 batches), which include 207 children (INT: 116, CON: 91), were presented. After a school year, five intervention teachers showed every workshop level of usefulness (average score: 8.72). After a school year, significant group x time interaction was observed for the EDI (control -0.14%, intervention 4.32%; $p = 0.008$). The strongest associations were found for the two domains most consistently linked to physical health and well-being.

Conclusions:

This study supports the idea that workshops on learning physical fitness for teachers might be effectively useful in incorporating physical education and fitness for the children and improving children's general well-being, which can reduce the risks of future poor health disorders.

Abstract No.: 200053

The new Primary Health Care policy in Hong Kong and its implications for hospital clinical nursing leaders: A Quasi-experimental Study

First Author: Siu Long CHAU
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Purpose:

In line with the Government primary health care (PHC) reform, a specially designed PHC training was provided to clinical nurse leaders to build capacity. This study aims to assess the participants' baseline and changes in PHC knowledge and attitudes over time.

Methods:

We recruited 80 senior nurses (Nurse Consultant, Associate Nurse Consultant, Senior Nursing Officer, Department Operational Manager, and Advanced Practice Nurse) working in Hong Kong West Clusters hospitals to attend the one-day PHC training. The training covered the topics of the PHC new policy in Hong Kong and the roles of nurses in PHC. We administered the Primary Health Care Questionnaire (PHCQ)-Knowledge and Attitude survey to measure participants' changes in PHC knowledge and attitude immediately post-training, and at 3-month follow-up. We used a generalized estimating equation to account for the correlations across multiple timepoints.

Results:

At the 3-month follow-up, participants' knowledge (Crude b: 0.24, 95% CI 0.05 to 0.83; P=0.032) and attitudes (Crude b: 0.17, 95% CI 0.08 to 0.62; P=0.040) towards PHC was significantly increased compared with baseline. The effect of the one-day PHC training was significantly stronger in participants who were female (knowledge: P for interaction=0.044), at higher rank positions (knowledge: P for interaction=0.032; attitude: P for interaction=0.048), and those who had previous PHC training (knowledge: P for interaction=0.045; attitude: P for interaction=0.039).

Conclusions:

The specially designed PHC training significantly boosted clinical nursing leaders' PHC knowledge and attitudes and sustained at 3 months. A more robust study design is warranted to test the longer-term training effect.

Abstract No.: 200063

Advancing Gastric Cancer Prediction with Sequential Health Trajectories among Middle-Aged and Elderly Populations: A Graph Language Learning - Based Approach

First Author: Lin SHEN
Co-Author(s): Michael Ka Shing CHEUNG, Lei LU, Gary TSE, William WONG, Jiannan YANG, Yifan YANG, Jiandong ZHOU

Purpose:

This study aims to develop and evaluate a machine learning approach that utilizes sequential health trajectories to predict gastric cancer in middle-aged and elderly populations.

Methods:

We conducted a retrospective diagnosis trajectories analysis to predict gastric cancer among middle-aged and elderly patients (N=136,801, males: 45.6%, age: 65.8 [52.5-76.0] at initial admission from 2000/1/1 to 2003/12/31, and were followed up until 2023/12/31). Multiple machine learning models meticulously extracted co-occurrence/sequential diagnosis patterns by incorporating ICD codes embedding into graph convolutional networks (GCN)-based vector models. A hybrid model with Multi-Layer Perceptron (MLP) and Recurrent Neural Network (RNN) is developed to encode information at visiting and patient levels, respectively. Integrated Gradients provided interpretations for possible adoption in real clinical practice.

Results:

We found trajectories of previous anemias, gastric ulcer, and gastrointestinal hemorrhage are significantly predictive for future gastric cancer. The MLP+RNN model demonstrated superior performance with an AUC of 0.95 and AP of 0.96. Models incorporating ICD embedding and graph learning achieved the highest predictive accuracy. Including age and gender as inputs further enhanced prediction accuracy. The interpretability analysis highlighted disorders of the stomach, gastric ulcer, and digestive symptoms as key early indicators of gastric cancer. Gender-specific differences were also noted, with distinct predictors identified for male and female patients, underscoring the value of separate analyses.

Conclusions:

This study demonstrates the potential of machine learning models in advancing gastric cancer prediction through analysis of previous sequential disease trajectories and demographics. Subgroup analysis found gender-specific predictors for personalised and early gastric cancer prediction with primary care use purpose.

Abstract No.: 200146

Deep Learning Automated Diagnosis and Grading of Cataracts using Colour Fundus Images: The Fundus Cataract-AI Project

First Author: Kendrick SHIH

Purpose:

The Fundus Cataract-AI project aims to automate cataract diagnosis and grading using deep learning techniques applied to a single standard macula-centric fundus photo.

Methods:

A dataset was utilized, comprising 11544 fundus images from Chinese patients, aged 50 and above, from a cross-sectional random population-based study. 909 images of patients who underwent cataract surgery previously were removed from the dataset. Another 3674 images were excluded from the dataset due to poor image quality. The subjects underwent comprehensive eye assessment by an Ophthalmologist including presenting visual acuity (PVA), best-corrected visual acuity (BCVA), automatic and subjective refraction, IOP, slit-lamp examination of the anterior segment and funduscopic examination of the posterior segment. Fundus photography was performed using the Eidon Fundus Camera. The images were categorized into three classes: 'normal', 'early cataract', 'visually significant cataract' based on face-to-face assessment by the Ophthalmologist and BCVA. A ResNet152 convolutional neural network, pretrained and fine-tuned via transfer learning, was employed for classification. The dataset was split into training (60%), validation (20%) and testing (20%) sets. To address class imbalance, weighted sampling and transfer learning strategies were applied. Main outcome measure was area under the curve (AUC) with accuracy, sensitivity and specificity.

Results:

6961 images were used for the dataset in total. The the distribution of 'normal', 'early cataract' and 'visually significant cataract' was 31.7%, 45.9% and 13.0% respectively. The preliminary model demonstrated an overall performance accuracy of 75%.

Conclusions:

Machine learning may be able to accurately assist in the diagnosis and grading of cataracts using fundus photos alone.

Abstract No.: 200058

Effect of lactate, pH and microbiomes in regulating human endometrial receptivity and pregnancy outcome

First Author: Manish KUMAR

Purpose:

What is the role of Lactates and pH and Lactobacillus on human endometrial receptivity and pregnancy outcome?

Methods:

In this study, we used various methods to investigate the role of lactate (D- & L-form) and pH on embryo implantation using the spheroid-endometrial co-culture model and studied the invasion and cytokine production of the endometrial epithelial cells. Concurrently, we employed Next-Generation Sequencing (NGS) analysis to investigate the composition and characteristics of uterine fluid and vaginal fluid samples obtained from the patients.

Results:

High D- and L-lactate concentrations (>10 mM) inhibited the cell viability and proliferation of the human endometrial epithelial Ishikawa and trophoblastic BeWo cells. Culture media at pH 6.1 (acidic), 7.2 (neutral), and 8.1 (alkaline) did not affect the BeWo spheroid attachment on the treated Ishikawa cells. Moreover, high lactate concentrations (>10 mM) inhibited the invasion of trophoblastic BeWo by the treated Ishikawa cells, as well as tube formation (angiogenesis) in the treated human endothelial HUVEC cells. D- and L-lactate (≥10 mM) induce the production of cytokines in Ishikawa cells including TIMPs, MMPs, IL6, IL6R, and certain Th1/Th2 cytokines. Lastly, Lactobacillus and Bifidobacterium are the most abundant bacteria inside the uterine and vaginal fluid, but their abundance did not correlate pregnancy outcome in IVF patients.

Conclusions:

Our findings suggested lactate and pH levels did not affect spheroid attachment. The effect of lactate-derived cytokines on trophoblast development, and the whether Lactobacillus, and Bifidobacterium could be promising indicators for pregnancy outcomes prediction warrant further investigation.

Abstract No.: 200142

Evaluating the Diagnostic Performance of Large Language Models on Complex Multimodal Medical Cases

First Author: Wan Hang Keith CHIU
Co-Author(s): Wing Chi Lawrence CHAN, William Chi Shing CHO, Sin Yu Joanne HUI, Wei Sum Koel KO, Michael D KUO

Purpose:

Large language models (LLMs) have demonstrated a surprising performance in radiological examinations. However, their proficiency in real-world medical reasoning, especially when integrating multimodal data remains uncertain. This study evaluates the ability of 3 commonly used LLMs to generate differential diagnoses (ddx) from complex multimodality diagnostic cases.

Methods:

Consecutive case records of the Massachusetts General Hospital from July 2020 to June 2023 were selected. The cases were diagnostically challenging, but a final diagnosis was provided. Only the case presentation and a simple prompt asking for the top 5 ddx were used as input. Each case was run independently to prevent the model from being influenced by prior cases. To assess, all diagnoses were mapped to their corresponding International Classification of Diseases, Tenth Revision (ICD-10) codes, with higher-level codes used in case an exact code could not be assigned.

Results:

The diagnostic accuracy on 104 evaluated cases based on the first set of answers by the LLMs was 27.9% for Bard, 30.8% for Claude 2, and 31.7% for GPT-4. Accuracy significantly improved at the ICD-10 chapter (body site or system) level, reaching 65.4% for Bard, 66.3% for Claude 2, and 71.2% for GPT-4. The mean number of the same ddx generated in each case in the repeatability testing was 2.3 (SD 1.1) for Bard, 2.4 (SD 1.2) for Claude 2, and 2.4 (SD 1.2) for GPT-4.

Conclusions:

LLMs may have a role in enhancing physician diagnosis of complex, multimodal clinical cases when applied judiciously.

Abstract No.: 200065

Machine learning for high-risk multimorbid antipsychotic user identification and cardiovascular event prediction

First Author: Qi SUN
Co-Author(s): Rachel Yui Ki CHU, Yuqi HU, Francisco Tt LAI, Boyan LIU, Wenlong LIU, Cuiling WEI, Ian Chi Kei WONG, Lingyue ZHOU

Purpose:

Identify specific multimorbidity patterns and antipsychotics use associated with increased MACE risks and develop and validate a time-to-event prediction model.

Methods:

This retrospective cohort study utilized electronic health records from the Hong Kong CDARS database. Patients aged 18-65 years, with records of 2 or more chronic health conditions within three years before the initial date of antipsychotic intake, were enrolled. Baseline characteristics, including age, sex, chronic disease history, antipsychotic usage history, and previous one-year drug intake history, were collected. The dataset was randomly divided into training and validation subsets based on the initial year of antipsychotic prescription. A Conditional Inference Survival Tree (CISTree) was employed to classify MACE risk groups. Nine machine learning models were trained using 5-fold cross-validation for hyperparameter optimization and validated on the validation set.

Results:

27,466 patients were included. The CISTree model identified older patients (≥44 years) with chronic kidney disease (CKD), cancer, hypertension, and using antianginal and antiplatelet drugs but not taking antidepressants as having the highest MACE incidence rate (173.065 per 1,000 person-years; 95% CI: [125.023, 230.990]). The Random Survival Forest (RSF) model outperformed the other seven models, identifying age, antidepressant usage, and chronic kidney disease (CKD) as the top three significant predictors. Furthermore, factors associated with a lower risk of MACE included younger age (<44 years), the use of antianginal, antibacterial, or antidepressant drugs, no usage of antiplatelet drugs or haloperidol, and the absence of CKD.

Conclusions:

We identified highly specific high-risk groups in multimorbid antipsychotic users; prediction demonstrates excellent power in aiding clinical decisions.

Abstract No.: 200054

Making Sleep Your Superpower: The Hera Leto ZzzBuds

First Author: Haana RIZVI

Purpose:

The importance of sleep is emphasised, as research shows poor sleep can result in stroke, dementia and hypertension (Guo et al., 2024; Zimlich, 2022). Unfortunately, most sleep health devices give inactionable statistics. The Hera Leto ZzzBuds (HLZ) is revolutionary, connecting information and initiative to encourage health improvements via sleep changes.

Methods:

By providing actionable data like Positional Therapy (PT) recommendations, individuals with obstructive sleep apnea (OSA) are given a potentially life-changing alternative, as they can possibly avoid undergoing invasive surgery or using ventilators.

Results:

Evidence shows PT may be non-inferior to respiratory devices (Lee and Choi, 2023). With PT, one alters their sleep position for relief, thereby presenting a painless alternative.,,The HLZ's 'per-second' SpO2 detection breaks ground for OSA patients, as smart-rings only detect SpO2 every 15 minutes (Oura, n.d.).

Conclusions:

Ultimately, the HLZ is a trailblazing innovation, uniting actionable insights and interventive properties to form a comprehensive product which can enhance wellbeing.,,References,Guo, C., Harshfield, E. L., & Markus, H. S. (2024). Sleep characteristics and risk of stroke and dementia. Neurology, 102(5). https://doi.org/10.1212/wnl.0000000000209141,,Lee, K.-I., & Choi, J. H. (2023). Positional therapy for obstructive sleep apnea: Therapeutic modalities and clinical effects. Sleep Medicine Research, 14(3), 129–134. https://doi.org/10.17241/smr.2023.01837,,Oura. (n.d.). Blood oxygen sensing (Spo2). https://support.ouraring.com/hc/en-us/articles/7328398760851-Blood-Oxygen-Sensing-SpO2#:~:text=Suspected%20variations%20in%20your%20blood,sampling%20intervals%20of%2015%20minutes.&text=If%20your%20blood%20oxygen%20levels,display%20a%20Breathing%20Regularity%20timeline.,,Zimlich, R. (2022, October 26). What's the connection between sleep apnea and hypertension? Healthline. https://www.healthline.com/health/sleep-apnea/sleep-apnea-hypertension

Abstract No.: 200124

Multimodal EEG and ECG Analysis for Enhanced Prediction of Sleep and Wakeful States in Primary Care

First Author: Yong LIU
Co-Author(s): Sijie DING, Gan HUANG, Yu SONG, Jinfei TIAN

Purpose:

Accurate prediction of sleep and wakeful states is crucial for diagnosing and monitoring sleep disorders, a major problem in primary care settings. Based on information integration theory (IIT) on consciousness, this study explores the potential of integrating electroencephalogram (EEG) and electrocardiogram (ECG) data to improve the prediction of different states during sleep.

Methods:

In this preliminary study, EEG and ECG data were collected from one patient (52yr,M) during sleep and wakefulness. Integrated information, measured by Phi (Φ) values, was calculated using PyPhi for each condition. $\Phi(X) = I(X) - \sum_i I(M_i)$, where $I(X)$ is the information of the whole system and $I(M_i)$ is the information of its individual parts. Overall Phi values, minimum information partition (MIP), and cause-effect structures were analyzed.

Results:

The multimodal approach (EEG + ECG) yielded higher Phi values compared to EEG (2 channels) alone, with the highest values observed during wakefulness. Multimodal Phi values ranged from 0.0506 to 0.0807, while EEG-only values ranged from 0.0283 to 0.0605. MIP analysis revealed different partitioning between sleep and wake states. Cause-effect structures showed more complex interdependencies during wakefulness, with mechanism [n1] having a maximally irreducible cause (MIC) Φ of 0.2610 and a maximally irreducible effect (MIE) Φ of 0.2402 in the multimodal wake condition.

Conclusions:

Integrating ECG with EEG data provides a more sensitive measure of consciousness levels, enhancing the understanding of neural dynamics during sleep and wakefulness. This multimodal approach shows promise for improving sleep disorder diagnosis and monitoring in primary care.

Abstract No.: 200141

Cardiovascular Kidney Metabolic Syndrome Stages Among Asian Americans

First Author: Tsz Yeung YAN
Co-Author(s): Adrian BACONG, Purnima BHARATH, Ka Yee CHEN, Unjali GUJRAL, Robert HUANG, Armaan JAMAL, Shiori KAWAI, Gloria KIM, Suraj KULKARNI, Latha PALANIAPPAN, Nitya RAJESHUNI, Sukhmeet SACHAL, Malathi SRINIVASAN, Lester Andrew UY

Purpose:

Cardiovascular, Kidney, and Metabolic Syndrome (CKM) involves dysregulation in cardiovascular, renal, and metabolic systems. Despite prior data examining CKM across races, data on disaggregated Asian subgroups is limited. We examined CKM prevalence among Asian Americans compared to Non-Hispanic Whites (NHWs) in a nationally representative sample--National Health Interview Survey (NHIS). We aim to develop clinical guidelines helping CKM staging.

Methods:

Using NHIS data from 2015-2018, we estimated the prevalence of CKM Stages among Indian, Chinese, and Filipino subgroups. Stages were defined as: 0 (BMI <23), 1 (BMI ≥23 or prediabetes), 2/3 (BMI ≥23, prediabetes, hypertension, diabetes, or high cholesterol), or 4 (established cardiovascular disease). We explored the relationship between health behaviours, access to care, socioeconomic status, and stages using bivariate (ANOVA, Pearson's chi-squared) and regression modelling.

Results:

Final study population included 86,762 adults aged 20-80 (mean age of 45.77). Prevalence of stages varied by race with CKM being highest in Chinese (45.73%) for Stage 0, Indians (53.75%) for Stage 1, and Filipinos (29.64%) for Stage 2/3. In Stage 4, Chinese had the lowest prevalence (2.94%) while NHW had the highest (8.63%). Race had significant associations with stages, socioeconomic factors and lifestyle behaviours (alcohol, smoking, and physical activity).

Conclusions:

Our findings indicate differences in CKM prevalence by race and highlight the need for culturally-appropriate interventions to address racial disparities in CKM burden. Limitations from insufficient renal data and the self-reported and cross-sectional nature of NHIS suggest that further research is warranted on the impact of demographic, socioeconomic, and behavioural factors on CKM in Asian Americans.

Abstract No.: 200096

Detecting women at risk for psychosis from the community-based preventative women mental health programme

First Author: Yi Nam SUEN
Co-Author(s): Sherry Kit Wa CHAN, Eric Yu Hai CHEN, Christy Lai Ming HUI, Edwin Ho Ming LEE, Michael Tak Hing WONG

Purpose:

Mental health problems in women, if left untreated, can have devastating impact on families and especially on children. Despite modest improvements in mainstream mental health services over the past decade, engagement and outcomes are far from satisfactory. We present and evaluate a three-level screening system for the detection and management for women with at-risk mental state for psychosis (ARMS) in Hong Kong community.

Methods:

This study examined the experience of psychotic-like symptoms among Hong Kong women aged 18 - 64 as part of a community mental health programme for women. The three levels are: (1) a 21-item version of the prodromal questionnaire brief (PQ-B-21) self-reported screener to identify high-risk cases, (2) a phone screening to eliminate false-positive cases, and (3) a Comprehensive Assessment for At-Risk Mental State (CAARMS) supervised by psychiatrists to determine the ARMS condition.

Results:

A total of 22,018 women completed the PQ-B-21 screening tool (level 1) up to April 2024. Thirty-nine percent (n = 9,225, 42%) met the a priori cut-off criterion and qualified for telephone screening (level 2). We successfully contacted 3,701 women (17%) in which 748 were eligible for CAARMS assessment. Among the final sample of 621 women who completed CAARMS (level 3; response rate: 83%), there were 353 ARMS and 38 cases of probable first-episode psychosis.

Conclusions:

We found that a three-level screening approach may help identify ARMS/psychosis in a population-wide screening programme. Early detection of psychosis should be extensively used if psychiatrist supervision is available in the community.

Abstract No.: 200047

Early initiation of sodium-glucose cotransporter-2 inhibitors attenuates renal function decline in type 2 diabetes patients with and without cardiovascular-kidney diseases: A propensity-matched cohort study

First Author: Johnny CHEUNG

Purpose:

To investigate whether early initiation of sodium-glucose cotransporter-2 inhibitors (SGLT2i) confers greater renal protection.

Methods:

We analyzed a territory-wide cohort of patients with type 2 diabetes in Hong Kong during 2009-2019. Patients initiating SGLT2i within 2 years (early initiation) versus 2-5 years (late initiation) after diabetes diagnosis were matched using 1:1 propensity score. We compared annual estimated-glomerular filtration rate (eGFR) changes between the two groups using linear mixed-effect models. Binary logistic regression was conducted to explore the association of early SGLT2i initiation with rapid eGFR decline (annual decline >4%).

Results:

Among 702 patients, 64.4% were male with a mean age of 50.3±12.3 years and a median follow-up of 1.90 years. The early and late initiation groups had similar baseline eGFR (93.9±19.4 versus 93.1±21.5 mL/min/1.73m²) and HbA1c (8.2±1.7 versus 8.4±1.4%). Before SGLT2i initiation, the two groups had comparable annual eGFR decline (-2.8[-5.2 to 0.3] versus -3.4[-5.9 to 0.9] mL/min/1.73m², p=0.714). After SGLT2i initiation, the early initiation group had a slower annual eGFR decline than the late initiation group (-1.8[-2.2 to -1.3] versus -2.9[-3.3 to -2.5] mL/min/1.73m², p<0.001). Subgroup analyses showed that the renoprotective benefit of early SGLT2i initiation was more marked in patients with macro- or microalbuminuria. Early SGLT2i initiation was inversely associated with rapid eGFR decline (odds ratio 0.08, 95%CI 0.03-0.17), consistent across cardiovascular-kidney conditions.

Conclusions:

SGLT2i initiation within 2 years of diabetes diagnosis was associated with a slower eGFR decline among the patients with or without a background of cardiovascular-kidney conditions.

Abstract No.: 200099

Effect of opioid use, postoperative pain and side effects on postoperative psychological distress: A study of PAIN OUT registry in seven Asian regions

First Author: Yuchang BAO
Co-Author(s): Chi Wai CHEUNG, Hung Chak HO, Yulin HUANG, Stanley Sau-ching WONG

Purpose:

This study examined the effect of opioid use at different stages of the postoperative process on postoperative psychological stress in 6105 patients across seven Asian regions.

Methods:

Patients retrieved from Pain Out dataset. Opioid uses were converted to oral morphine equivalents (OMEs). Postoperative pain and psychological distress were assessed using the International Pain Outcomes Questionnaire. Multinomial logistic regression was employed to examine the effects of postoperative pain, side effects, and analgesics on postoperative anxiety and helplessness.

Results:

OMEs during surgery and in the ward were negatively associated with moderate postoperative anxiety (OR = 0.9968, 95%CI [0.9957, 0.9979]; OR = 0.9976, 95%CI [0.9963,0.9989]) and moderate helplessness (OR = 0.9982, 95%CI [0.9967, 0.9997]; OR = 0.997, 95%CI [0.9965, 0.9999]). Intraoperative OMEs was negatively associated with severe postoperative anxiety and helplessness (ORs = 0.9982, 95%CI [0.9967, 0.9996] & 0.997, 95%CI [0.995, 0.999]). However, OMEs in pre-operative process and recovery room did not have significant associations with postoperative anxiety and helplessness. Additionally, postoperative pain had mixed results with postoperative anxiety and helplessness. In contrast, side effects had significant positive associations with postoperative anxiety and helplessness.

Conclusions:

Our findings suggested a complex association between postoperative pain and anxiety/helplessness. OMEs during surgery and in the ward were negatively associated with postoperative psychological distress but not OMEs in pre-operative process and recovery room. This emphasizes the critical role of pain management in postoperative care and highlights the importance in addressing marginal risks to improve patient outcomes, particularly those with mild pain symptoms.

Abstract No.: 200097

Effectiveness of the Risk Assessment and Management Programme for patient with Hypertension (RAMP-HT) on Hypertension - related complications and all-cause mortality in primary care: A Population - Based Cohort Study

First Author: Zoey WONG
Co-Author(s): David CHAO, Julie CHEN, Weng Yee CHIN, Tse EMILY, Tony HA, Cindy Lo Kuen LAM, Ivy MAK, Wendy Wing Sze TSUI, Eric WAN, Esther Yee Tak YU

Purpose:

The multidisciplinary Risk Assessment and Management Programme for Hypertension (RAMP-HT) was implemented to supplement usual care for patients with hypertension in public primary care clinics. This study aimed to evaluate the effectiveness of RAMP-HT on reducing cardiovascular disease (CVD) and all-cause mortality over 10 years.

Methods:

A population-based prospective study was conducted using the Hong Kong Hospital Authority electronic health databases in Hong Kong. Adults with a diagnosis of hypertension between 1st October 2011 and 30th September 2014 were included. RAMP-HT participants were matched one-to-one to usual care only patients with propensity score matching. The risk of CVD and all-cause mortality between RAMP-HT and usual care only groups were compared with Cox proportional hazards regression.

Results:

112,535 RAMP-HT participants and 112,535 usual care only patients (225,070 in total) were identified from electronic health databases after matching. Over a median follow-up period of 8.6 years (1,794,066 person-years), as compared with usual care only patients, RAMP-HT participants had significantly lower risk of CVD (Absolute risk reduction (ARR): 7.2%; HR: 0.61 [95% CI: 0.60, 0.63]) and all-cause mortality (ARR: 12.9%; HR: 0.56 [95% CI: 0.55, 0.57]). The number-needed-to-treat to reduce one event of CVD and all-cause mortality was 10 and 9, respectively.

Conclusions:

RAMP-HT supplementing usual care was associated with CVD and all-cause mortality risk reduction in patients with hypertension by 39% and 44% respectively relative to usual care only. The findings support the integration of RAMP-HT with usual care in the management of patients with hypertension in primary care.

Abstract No.: 200139

Efficacy of internet-based strength-based intervention for people with mental illness: A randomized controlled trial

First Author: Ka Long CHAN
Co-Author(s): Ka Shing Kevin CHAN, Chun Bun Ian LAM, Lai Hong LAM, Fung Oi Scarlet POON

Purpose:

Mental health challenges represent a significant public health concern globally, with individuals grappling with various forms of mental illness requiring effective and accessible interventions. However, a pervasive barrier often faced by individuals with mental illness is the reluctance to seek professional help. In response to this critical challenge, this study aimed to evaluate the efficacy of an online self-help strength-based intervention in supporting the recovery journey of individuals with mental illness in Hong Kong.

Methods:

In this study, we conducted a two-arm parallel randomized controlled trial, with participants randomly assigned to either the six-week online self-help intervention group or the waitlist control group. Both groups completed research assessments at baseline (T0), immediately after intervention (T1).

Results:

Participant recruitment took place from March to October 2023, enrolling 250 eligible participants who completed baseline assessments. A multilevel model predicting the recovery stage showed that the main effects of group and time were non-significant, but the interactive effect between group and time was significant ($B = 1.03$, $p < 0.005$, 95% CI = [0.37, 1.70]). Between-group comparisons at T1 revealed a significant group difference, with the intervention group showing lower insomnia severity (Cohen's $d = 0.54$, $p < 0.05$).

Conclusions:

These results suggest that online self-help strength-based intervention is effective in facilitating the recovery journey for people with mental illness. Given its low cost, high accessibility, and minimal therapist involvement, it is recommended as a first-step intervention.

Abstract No.: 200145

Improving Type 2 Diabetes Mellitus Detection in Primary Care – Effectiveness of Active Opportunistic Screening Using Point-of-Care Capillary HbA1c

First Author: Linda CHAN

Co-Author(s): Xiao Rui Catherine CHEN, Paul Po Ling CHAN, David Vai Kiong CHAO, Wai Kit KO, Cindy Lo Kuen LAM, Eng Sing LEE, Wei Leik NG, Eric WAN, Samuel WONG, Esther Yee Tak YU

Purpose:

In Hong Kong (HK), undiagnosed Type 2 Diabetes Mellitus (T2DM) is an important public health issue, largely because early-stage T2DM is asymptomatic, leading individuals to underestimate their risk. Therefore, developing a more effective active screening strategy is essential. Point-of-care capillary HbA1c (POC-cHbA1c) has shown potential as a screening test, yet randomised trials evaluating its effectiveness for T2DM detection are limited, with none conducted in HK. Our study aimed to assess the effectiveness of two-step active opportunistic screening using POC-cHbA1c versus venous HbA1c (vHbA1c) to enhance T2DM detection among at-risk primary care patients.

Methods:

We conducted a cluster randomised controlled trial in eight HK General Out-Patient Clinics using a two-step active opportunistic screening approach involving: (1) risk factor count and (2) HbA1c testing. Subsequently, a confirmatory oral glucose tolerance test was offered to participants with high-risk HbA1c ≥5.6%. We used a mixed-effects logistic regression model to account for the clustering effect.

Results:

The uptake rate of POC-cHbA1c was significantly higher than vHbA1c (76.0% vs 37.5%; OR=7.06, 95% CI [2.47-20.18], p<0.001). POC-cHbA1c detected more T2DM (4.2% vs 1.4%) and pre-DM (11.8% vs 6.9%) cases. The odds of POC-cHbA1c detecting T2DM and pre-DM combined were higher (OR=1.99, 95% CI [1.01-3.95], p=0.048). The number-needed-to-screen was 61 for POC-cHbA1c to detect one additional T2DM patient versus vHbA1c.

Conclusions:

Active opportunistic screening using POC-cHbA1c resulted in higher uptake and enhanced detection rates of T2DM and pre-DM among at-risk primary care patients compared to vHbA1c. POC-cHbA1c testing shows promise as an effective T2DM screening strategy.

Abstract No.: 200095

Improving access to mental health services for young people in community: LevelMind@JC

First Author: Christy Lai Ming HUI
Co-Author(s): Sherry Kit Wa CHAN, Eric Yu Hai CHEN, Yi Nam SUEN, Paul Wai Ching WONG

Purpose:

Young people, in particular, show low rates of seeking help, necessitating the creation of youth-friendly platforms. In response, LevelMind@JC established eight community-based centres in 2019 that serve as hubs for engagement and screening, with plans to expand to 45 hubs by 2024. These centres offer low-intensity interventions co-developed with young people, providing flexible online, offline, and hybrid services supported by social workers, psychologists, and psychiatrists.

Methods:

The project aims to empower youths aged 12-24 from diverse backgrounds to manage their mental health, support their peers, and involve them in the ecosystem's development. It also seeks to equip youth workers with the necessary skills to effectively support young people. The project establishes data tracking and evaluation systems to continuously improve the model and ensure long-term sustainability.

Results:

These "hubs" served more than 20000 young people since 2019. For one-third of the youths experiencing increased distress, tailored care pathways offer therapeutic interventions and facilitate access to existing public and community resources. Capacity-building efforts focus on empowering youth workers with the knowledge and skills to address the wide-ranging mental health needs of young people. The evaluation component measures the efficacy and benefits of the service model for youths, stakeholders, and the broader healthcare system.

Conclusions:

The LevelMind@JC Phase II project builds on the positive results of Phase I, expanding the reach of its youth-focused mental health service hubs. The project seeks to produce evidence and insights that contribute to the standardisation and long-term viability of this pioneering, youth-focused mental health service model.

Abstract No.: 200103

Long-term effects of COVID-19 on diabetes complications and mortality in people with diabetes mellitus: Two cohorts in United Kingdom and Hong Kong

First Author: Ran ZHANG
Co-Author(s): Esther Wai Yin CHAN, Ching Lung CHEUNG, Celine CHUI, Francisco Tt LAI, Athene Hoi Ying LAM, Xue LI, Sukriti MATHUR, Kathryn Choon Beng TAN, Carlos WONG, Eric WAN, Ian Chi Kei WONG, Vincent Ka Chun YAN, Boyuan WANG

Purpose:

To evaluate the long-term associations between COVID-19 and diabetes complications and mortality, in patients with diabetes mellitus (DM).

Methods:

People with DM diagnosed with COVID-19 infection, between 16 March 2020 and 31 May 2021 from the UK Biobank (UKB cohort, n=2,456); and between 01 April 2020 and 31 May 2022 from the electronic health records in Hong Kong (HK cohort, n=80,546), were recruited. Each patient was randomly matched with participants with DM but without COVID-19, based on age and sex (UKB, n=41,801; HK, n=391,849). Characteristics between cohorts were further adjusted with Inverse Probability Treatment Weighting through stratification. Long-term association of COVID-19 with multi-organ disease complications and all-cause mortality after 21-days of diagnosis was evaluated by Cox regression.

Results:

Compared to uninfected participants, patients with COVID-19 infection with DM were consistently associated with higher risks of cardiovascular diseases [CHD: HR(UKB): 1.6 (95% CI: 1.0,2.4), HR(HK): 1.2 (95% CI: 1.0, 1.5); and stroke: HR(UKB): 2.0 (95% CI: 1.1,3.6), HR(HK): 1.5 (95% CI: 1.3, 1.8)], microvascular disease [end stage renal disease: HR(UKB): 2.1 (95% CI: 1.1,4.0), HR(HK): 1.2 (95%CI: 1.1,1.4)] and all-cause mortality [HR(UKB): 4.6 (95% CI: 3.8,5.5), HR(HK): 2.6 (95%CI: 2.5,2.8)], in both cohorts.

Conclusions:

COVID-19 infection is associated with long-term increased-risks of diabetes complications in people with DM. Monitoring for symptoms of developing these long-term complication post-COVID-19 infection in the infected patient population of people with DM may be beneficial in minimizing their morbidity and mortality.

Abstract No.: 200072

Prevalence of teleconsultation use and attitudes and perceived barriers towards teleconsultation among family doctors in Hong Kong – a Pilot Study

First Author: Amy NG
Co-Author(s): Fleur LEE, Ivy MAK, Min QIU, Samuel WONG, Esther Yee Tak YU

Purpose:

Teleconsultation has been increasingly used in recent years, especially during the COVID-19 pandemic. This study aimed to assess the prevalence of teleconsultation use and investigate the attitudes and barriers towards teleconsultation among family doctors in Hong Kong.

Methods:

A content-valid questionnaire was sent to members of the Hong Kong College of Family Physicians by email in December 2023 and January 2024 assessing teleconsultation practices, attitudes, and barriers to teleconsultations. Attitudes and barriers were rated on a 4-point Likert scale from strongly disagree to strongly agree and reverse coding were completed for negative attitudes. Descriptive statistics was used.

Results:

Of the 49 family physicians surveyed, 32 provided teleconsultation services, with 30.36% of total consultations conducted via teleconsultation during the COVID-19 pandemic, compared to 2.13% post-pandemic. The primary attitudes supporting teleconsultation use were that teleconsultation could help to reduce cross-infection (95.9% of participants), provide timely healthcare (83.7%), and reduce visits to healthcare facilities (83.7%). The primary barriers reported were the inability to physically examine patients (87.8% of participants), poor digital literacy of patients (85.7%), and limited access to technology (73.5%).

Conclusions:

The study showed that teleconsultation use declined post-pandemic as the primary attitude toward reducing cross-infection was less important, while significant barriers existed. Future studies should evaluate teleconsultation barriers and facilitators, and policymakers should improve education and guidance for doctors and the public.

Abstract No.: 200148

Prospective Comparative Study Investigating Agreement between Tele-Ophthalmology and Face-to-face Consultations in Patients Presenting with Chronic Visual Loss

First Author: Kendrick SHIH

Purpose:

This study aims to investigate the diagnostic accuracy of store-and-forward tele-ophthalmology consultations for non-diabetic patients, aged 40 and above, presenting with vision impairment of 3 months or more, in terms of cataracts, glaucoma, and age-related macular degeneration.

Methods:

This is a prospective comparative study. Enrolled subjects were independently assessed by both tele-ophthalmology and face-to-face assessment. Agreement level between the two modalities for diagnosis and severity were compared using kappa statistic. Diagnostic accuracy of tele-ophthalmology was determined using the face-to-face consultation serving as the gold standard. Costs were compared by calculating the downstream costs generated by each modality in terms of investigations and treatment.

Results:

A total of 860 eyes of 430 patients were assessed during the study period. Tele-ophthalmology consultations had significantly high agreement with face-to-face consultations in the diagnosis and grading of all three ocular conditions; cataracts, glaucoma, and AMD. Diagnosis and grading of cataracts and AMD reached [Formula: see text] values of > 0.8, while diagnosis and grading of glaucoma reached [Formula: see text] values between 0.61 and 0.8. In terms of diagnostic accuracy, tele-ophthalmology consultations were highly sensitive and specific for AMD with greater than 99% sensitivity and specificity achieved by tele-ophthalmology. There was high specificity when diagnosing cataracts, but lower sensitivity at 87.8%. Conversely, there was high sensitivity for diagnosing glaucoma, but lower specificity at 76.5%. Downstream costs were similar between groups.

Conclusions:

Store-and-forward tele-ophthalmology consultations are accurate and comparable to face-to-face consultations for diagnosis and grading of cataracts, glaucoma, and AMD

Abstract No.: 200041

Risk of mortality and complications in people with severe mental illness and co-occurring diabetes mellitus: a systematic review and meta-analysis

First Author: Matthew Tsz Ho HO

Purpose:

People with severe mental illness (SMI) have increased premature mortality and prevalence of diabetes compared with general population. Although earlier studies have examined the influence of SMI on diabetes-related outcomes, findings were inconsistent and not systematically evaluated. We quantitatively synthesised the literature to investigate whether SMI increased the mortality and complication risks in people with diabetes.

Methods:

We screened 18,468 studies from Embase, MEDLINE, PsycInfo, and Web-of-Science from inception to March 31, 2024 for studies that examined mortality or complication outcomes in people with SMI and co-occurring diabetes (SMI-diabetes group) relative to people with diabetes only (diabetes-only group). 21 studies were identified from ten geographic regions, and results were synthesised by random-effects meta-analyses, with stratified analyses by study-level characteristics.

Results:

SMI-diabetes group exhibited increased all-cause mortality (relative-risk 1.77 [95% CI: 1.46-2.14]) and CVD-specific mortality risk (1.88[1.73–2.04]) relative to diabetes-only group, and the risk has persisted in recent decade and was demonstrated in distinct geographic regions. SMI-diabetes group showed increased risk of complications(1.23[1.06-1.43]) relative to the comparison, particularly in incident-diabetes sample signifying advanced disease stage upon presentation, and such risk has persisted in recent decade with apparent geographic variations. Stratified analyses revealed higher risk of metabolic complications(1.84 [1.58- 2.15]), and lower likelihood of peripheral-vascular complications(0.91[0.84-0.99]), neuropathy(0.85[0.78-0.93]), and retinopathy(0.70[0.60-0.82]), albeit comparable cardiovascular complications(1.04[0.89-1.22]), cerebrovascular complications(1.07[0.86- 1.33]), and nephropathy(0.92[0.72-1.17]) rates.

Conclusions:

People with SMI and co-occuring diabetes are at increased risk of excess mortality and complications than non-SMI counterparts. Future research is warranted to improve diabetes-related outcomes and reduce the mortality gap in this vulnerable population.

Abstract No.: 200040

Training and empowering pharmacists to delabel low risk penicillin allergy in primary care: A head-to-head comparing pharmacist vs. allergist pilot in Hong Kong

First Author: Philip LI
Co-Author(s): Timo CHAN, James HOOI, Andrew LI, Raymond MAK, Vincent WONG

Purpose:

Mislabelled penicillin allergies are associated with a myriad of adverse outcomes and development of anti-microbial resistance. With the overwhelming need for specialist allergy services, pharmacist initiatives such as the Hong Kong Penicillin Allergy Pharmacist Initiative (HK-PAPI) have been advocated. However, evidence of their effectiveness, safety and impact on health-related quality-of-life (HR-QoL) are lacking. This study assessed and compared the effectiveness, safety and improvements on HR-QoL ofpharmacists vs. allergists in a pilot low-risk penicillin allergy delabelling initiative.

Methods:

All adult patients referred for low-risk penicillin allergy were randomized and evaluated by either pharmacists or allergists in a 1:3 ratio. Outcomes and changes in Drug Hypersensitivity Quality of Life Questionnaire (DrHy-Q) scores were compared

Results:

Of 323 patients referred, 96.3% (311/323) completed penicillin allergy evaluation (pharmacists: 83 [24.3%] vs. allergists: 228 [66.7%]). Overall, 93.6% (291/311) were delabelled with no difference between evaluations by pharmacists and allergists (92.8% vs 93.9%, p=0.729). There were no severe or systemic reactions in either cohort. Patients evaluated by either pharmacists (43.4 [SD:29.1] to 10.5 [SD:5.93], p<0.001) or allergists (37.2 [SD:22.2] to 29.1 [SD:22.4], p<0.001) reported improved HR-QoL as reflected by DrHy-Q scores. However, absolute changes in DrHy-Q scores were significantly greater among patients evaluated by pharmacists compared to those by allergists (-24.6 [SD:25.1] vs -9.19 [SD:13.7], p<0.001).

Conclusions:

Evaluations and delabelling by pharmacists (vs. allergists) were comparably effective and safe among patients with low-risk penicillin allergy. Moreover, patients evaluated by pharmacists even reported significantly greater improvements in HR-QoL, highlighting the potential of multidisciplinary druallergy initiatives in community and primary care.

Abstract No.: 200069

Understanding Acute Viral Conjunctivitis in Hong Kong – A Collaborative Study between Ophthalmology and Primary Healthcare

First Author: Allie LEE

Co-Author(s): Alex KAN, Wai Kit KO, Khant NYAR AUNG, Siddharth SRIDHAR, Jenny WANG, Brian WONG, Hunter YUEN

Purpose:

Acute viral conjunctivitis, often caused by adenovirus, is a condition commonly presenting to both ophthalmology clinics and primary healthcare settings. However, local data on the epidemiology of acute viral conjunctivitis is scarce. This study aims to fill this knowledge gap by investigating the prevalence of adenoviral conjunctivitis in presumed viral conjunctivitis and the presenting clinical features.

Methods:

Patients with a clinical diagnosis of "presumed viral conjunctivitis" with symptom onset within one week were recruited from three eye centres and two general out-patient clinics from 1st January 2022 to 31st July 2024. All diagnoses were made by an ophthalmologist. A conjunctival swab was taken and polymerase chain reaction was used to detect adenovirus and the viral load. Patient demographic, laterality, severity of redness and discharge were recorded.

Results:

A total of 108 patients of "presumed viral conjunctivitis" were included in the study. Female to male ratio was 1.35:1. Average age was 50.4 years. Bilateral involvement at presentation was found in 47 patients (43.5%). Over 40% presented with moderate to severe red eyes and only 7.4% had purulent discharge. The average duration from symptom onset to medical attention was 4.3 days. Of all patients, 22 (20.4%) were tested positive for adenovirus. Among adeno-positive patients, only 8 (38.1%) had a measurable positive viral load. The adeno-positive patients had a significantly lower mean age (p=0.02)

Conclusions:

In our study, adenovirus was detected in only 20% of presumed viral conjunctivitis. Use of rapid viral diagnostic may be considered to improve diagnostic accuracy.

Abstract No.: 200061

Using Cardiovascular Risk Algorithm to Optimize Physician Encounter Frequency for Type 2 Diabetes Patients in Primary Care: A Target Trial Emulation Study

First Author: Wanchun XU
Co-Author(s): Cindy Lo Kuen LAM, Peter TANUSEPUTRO, Eric WAN, Yuan WANG

Purpose:

To investigate whether physician encounter interval for patients with Type 2 diabetes mellitus (T2DM) can be optimized from 2-3 months to 4-6 months in patients with non-high cardiovascular risk.

Methods:

Using territory-wide public electronic medical records in Hong Kong, we emulated a target trial to compare effectiveness of the encounter intervals of 4-6 months versus 2-3 months for T2DM patients without prior CVDs and with predicted risk for CVDs < 20%. A 10-year CVD risk prediction model derived from the T2DM population in Hong Kong was used for risk stratification. The marginal structural model was applied to estimate the hazard ratio (HR) for CVD incidence and all-cause mortality, the incidence rate ratio of secondary and tertiary care utilization, as well as the between-group differences in haemoglobin A1c, blood pressure and cholesterol levels.

Results:

There was no significantly increased risk of CVD in patients with encounter intervals of 4-6 months compared to those with intervals of 2-3 months (HR[95%CI]: 1.01[0.90,1.14]; standardized 10-year risk difference[95%CI]: -0.1%[-0.7%, 0.6%]), so as the all-cause mortality (HR: 1.00[0.84,1.20]; standardized 10-year risk difference: -0.1%[-0.5%, 0.3%]). Additionally, there is no observable difference in the utilization of secondary and tertiary care or key clinical parameters between these two follow-up frequencies.

Conclusions:

For T2DM patients with a calculated 10-year CVD risk < 20%, the interval of regular physician encounters can be optimized from 2-3 months to 4-6 months while not compromising patients' long-term outcomes, which could help to free up the service capacity of the primary care systems.

Abstract No.: 200118

Associations between Primary Healthcare Resources Utilization and Health Behaviors among Older Adults in Hong Kong: Perspectives from District Health Centres.

First Author: Tsz Yin Billy WONG
Co-Author(s): Sophia CHAN, Ka Po Amy CHEUNG, Tzu Tsun LUK, Tin Shun Titan MAK, Kelvin WANG, Yiran WANG, Derek YEE TAK CHEUNG, Runqi YUAN, Yi Chun ZHU

Purpose:

The Government's District Health Centre (DHC) were established to promote primary healthcare in 2019. Current study investigated the associations of DHC engagement and health behaviors among the older adults population joining the community-based project.

Methods:

A cross-sectional study was performed on 3226 older adults (>=65-years, mean age=77.7 years, 73.9% female) across 18 Hong Kong districts from Jan to Dec 2023. Participants completed a questionnaire assessing DHC membership and service use, socio-demographic factors, scores on the electronic health literacy scale (eHEALS), smoking and exercise habits. Ordinal logistic regression was used to explore potential predictors of engagement levels with DHC services (non-members, non-services users, services users).

Results:

Nearly one-third (N=1035, 32.1%) participants hold DHC membership. Among these, 787 (76.0%) used at least one of the services provided at DHC, whereas 249 (24.0%) joined but used none. Participants who were older (age in years, p-for-trend, Adjusted Odds Ratio (AOR)=0.93, 95%CI=0.92–0.94) and were active smokers (AOR=0.23, 95%CI=0.10–0.48, vs never-smokers) were less likely to join DHC. Conversely, those who had higher eHEALS scores (p-for-trend, AOR=1.02, 95%CI=1.01–1.03) and exercised >300-minute/week (AOR=1.64, 95%CI=1.26–2.16, vs <150-min/week) were more likely to join DHC.

Conclusions:

We found that smoking and exercise habits, the two modifiable risk factors for non-communicable diseases, were associated with older adults' utilization of DHC service, in addition to younger age and higher electronic health literacy. More targeted promotion is needed to improve the penetration rate of DHC enrolment. Improving access to these primary healthcare services help promote healthy aging.

Abstract No.: 200125

Banning E cigarettes and Alternative Tobacco Products (ASPs) in Hong Kong: What's next?

First Author: Sophia CHAN
Co-Author(s): Ka Po Amy CHEUNG, Tzu Tsun LUK, Vienna Wai Yin LAI, Henry Sau Chai TONG, Kelvin WANG, Derek YEE TAK CHEUNG

Purpose:

N/A,Background:,The global rise in e-cigarette and ASPs use poses significant health risks to the population, especially youth.

Methods:

N/A,Policy objectives:,To prevent youth smoking, Hong Kong has implemented a comprehensive ban on importation, manufacture, sale, distribution, and advertising of e-cigarettes and ASPs since April 2022. This paper highlights challenges and future policy steps.

Results:

N/A,Challenges and next steps:,Hong Kong Government may face challenges in enforcing this regulation, including illegal trade, online sales, enforcement capacity, public compliance. According to 2023 Tobacco Control Policy-related Survey with 5600 respondents, rate of e-cigarette use was low at 0.8% but only 22.2% intended to quit using. Despite 21.1% current smokers had attempted to quit, only 22.7% had used cessation services. Additionally, the telephone survey of the Government's public consultation in 2023 showed that 84.0% of 1040 respondents agreed with stopping the circulation and use of ASPs, 56.8% supported the ban of possession of ASPs for any purpose.,,The next steps to be considered include: 1. Strengthen enforcement; 2. Implement complete ban on e-cigarette and ASPs possession; 3. Expand access to smoking cessation services in Government's District Health Centres; 4. Establish surveillance systems to track smoking prevalence and youth tobacco use ; 5. Conduct regular evaluations to assess policy's impacts; 6. Implement complementary policies like increasing tobacco taxes regularly.

Conclusions:

Implementing a comprehensive ban on e-cigarettes and ASPs is essential to protect Hong Kong's population, especially youth. Overcoming challenges requires a multi-pronged approach, sustained political will, phased implementation, robust evaluation to ensure long-term effectiveness.

Abstract No.: 200151

Family Objections to the Retrieval of Posthumous Organs for Transplantation

First Author: Tsz Yin Billy WONG

Co-Author(s): Sophia CHAN, Ka Po Amy CHEUNG, Tzu Tsun LUK, Tin Shun Titan MAK, Kelvin WANG, Yiran WANG, Derek YEE TAK CHEUNG, Runqi YUAN, Yi Chun ZHU

Purpose:

Two prevalent types of consent legislation exist in posthumous organ donation. Opt-in legislation requires individuals to explicitly express their desire to be a deceased donor, deeming posthumous retrieval without the donor's consent unacceptable. Opt-in legislation does not allow families to override the known wishes of deceased individuals. Challenges arise when families are unaware of their loved one's preferences unless there is a specific directive. Even when donor wishes remain unknown, families may be required to provide consent. Conversely, opt-out consent legislation assumes every individual to be a willing donor by default unless they explicitly opt out. Even if a person did not object during their lifetime, clinicians consult the families of the deceased for the final decision. This study draws insights from health laws and ethical dialogues to assess the involvement of families in posthumous organ retrieval, provides cultural insights into the challenges posed by family objections, and offers normative solutions to mitigate these objections.

Methods:

This study has reviewed law and ethics literature to gain a broad perspective in posthumous retrieval.

Results:

Cultural factors include beliefs about the sanctity of the dead body, religious views on the declaration of death, and concerns about the afterlife. Refusals can be mitigated through open discussions between donors and family members.

Conclusions:

This study concludes how addressing family objections can enhance community trust and participation in organ donation, significantly increasing the supply of organs for transplantation and ultimately advancing primary healthcare outcomes in the community.

Abstract No.: 200116

Strengthening Primary Health Care in Hong Kong: The Establishment of the HKU Primary Health Care Academy

First Author: Sophia CHAN
Co-Author(s): Siu Long CHAU, Hoi Yan CHEUNG, Kelvin WANG

Purpose:

Hong Kong's Primary Health Care (PHC) system is transforming to address the needs of an aging population. A PHC system that provides holistic community-based preventive care is urgently needed. We outlined the role of the HKU Primary Health Care Academy (PHCA) in supporting PHC reform in Hong Kong.

Methods:

The HKU PHCA is a platform designed to: 1. Enhance health care professionals' knowledge in PHC; 2. Promote research and test evidence-based models for PHC; 3. Strengthen health care professionals' capacity to provide PHC services through effective training models, and 4. Policy advocacy. The HKU PHCA focuses on four strategic pillars: 1. Developing research to inform policy-making; 2. Building health care professionals' capacity through knowledge exchange; 3. Delivering evidence-based interventions for policy advocacy; and 4. Convening global experts for PHC discussion.

Results:

In the past year, the HKU PHCA has initiated three research studies with publications, obtained over 200 million in funding for a nursing leadership development fellowship project, and established innovative district-based PHC models and multiple knowledge dissemination press and media conferences on public health policy advocacy (N=44), organized academic seminars (N=8), with 1887 participants attending, and 166 healthcare professionals and faculty received PHC and related training (N=4).

Conclusions:

The HKU PHCA is a strategic investment in Hong Kong's PHC reform. It focuses on research, education, policy advocacy, and international collaboration to address evolving healthcare needs and shape the future of PHC in Hong Kong.

Abstract No.: 200120

Strengthening Public Health: The Case for Regular Tobacco Tax Increase In Hong Kong

First Author: Ka Po Amy CHEUNG
Co-Author(s): Sophia CHAN, Tzu Tsun LUK, Vienna Wai Yin LAI, Henry Sau Chai TONG, Kelvin WANG, Derek YEE TAK CHEUNG

Purpose:

Increasing tobacco tax reduces the affordability of tobacco products is the most effective strategy to reduce smoking. This policy brief identifies potential models of tobacco tax increase applicable to Hong Kong context and outlines the critical needs for the Government to raise tobacco tax on a regular basis.

Methods:

We analyzed data from the Tobacco Control Policy Survey (TCPS) 2023 conducted from February to June 2023, and from the telephone survey of the Government's public consultation conducted in August to September 2023.

Results:

We found that 64.6% of 5600 respondents from TCPS supported annual tobacco tax increase, with 78.2% of them believing that the increment should match or exceed the inflation rate. Additionally, 87.0% of 1040 respondents from the Government survey supported increasing tobacco taxes to 75% of the retail price, and 87.5% supported introducing a mechanism to adjust tobacco taxes regularly.,,With the strong support from the general public, the Government should impose regularity on raising tobacco tax. One framework is to establish an automatic system to adjust tobacco taxes based on indicators like inflation rate to keep the tobacco price high and less affordable. Another model is to set a regular timeline and frequency to raise the tobacco tax rate, which currently only accounts for 64.8% of the cigarette price, up to 75% tax share, as recommended by World Health Organization.

Conclusions:

Raising tobacco tax effectively encourages smokers to quit and reduces smoking prevalence. The Government should consider models of increasing tobacco tax on a regular basis to maximize these benefits.

Abstract No.: 200100

An Artificial Intelligence Solution for Accurate Fracture Risk Prediction: A Machine Learning-Based System for Bone Void Analysis

First Author: William LU
Co-Author(s): Mian HUANG, Aaron Dzi Shing LAU, Junyu LIN, Ronald Siyi LU

Purpose:

To develop a novel Machine Learning-based system (MLD) for accurate Bone Mineral Density (BMD) analysis and fracture risk assessment, aiming to improve osteoporosis diagnosis and fracture prediction efficiency in elderly bone screening.

Methods:

The study involved 464 vertebrae from 152 patients, aged 51.8 ± 13.4 years, in which regions with a BMD less than 40 mg/cm3 were identified as bone voids. The vertebral trabecular bone was subdivided into eight sections based on the middle sagittal, coronal, and horizontal planes, and both the distribution and volume of bone voids were measured. Additionally, the current study examined 250 vertebrae from 250 patients, aged 61.8 ± 11.1 years. The aim of this study was to determine the cut-off value for osteoporotic vertebral compression fractures (OVCF).

Results:

Bone void distribution and volume: The bone voids were primarily observed in the superi-or-posterior-right section of the vertebral trabecular bone (40.8%). Age-related increases in bone voids were uneven, with lumbar vertebrae exhibiting higher detection rates and normalized void volumes than thoracic vertebrae. A significant increase was observed after 55 years. BMD and fracture risk: According to the receiver operating characteristic (ROC) analysis, the MLD system demonstrated superior fracture prediction effectiveness compared to conventional DEXA scanning, with a cut-off BMD value of 98.05 mg/cc for OVCF prediction.

Conclusions:

The MLD effectively analyzes localized BMD and identifies the distribution and volume of bone voids. By establishing BMD cut-off points for OVCF prediction, this system holds great potential for use in elderly bone screening and fracture risk assessment.

Abstract No.: 200080

An Innovative Health Model to Address Nutritional Disparity for the Special Needs in the Primary Healthcare Setting

First Author: Kwan Kit Matthew FUNG
Co-Author(s): Shi Po Sally POON

Purpose:

Evidence shows that individuals with Intellectual and Developmental Disabilities (IDD) experience negative nutritional outcomes due to suboptimal energy balance, restrictive eating and communication challenges secondary to feeding difficulties, sensory processing issues and executive function deficits. However, the perspectives of nutritional care for special healthcare needs are systematically less prioritised due to scarce resources. A community program based on a two-domain 1-year structured health model, covering nutrition and physical activity components, was developed as an attempt to address the disparity in the primary healthcare setting.

Methods:

213 subjects (mean age: 21.7 ± 8.0 years old) were recruited in a district special needs centre in 2021-2023. Monthly intensive family-based nutrition counselling, hands-on food experiences, interactive talks and workshops, and a series of exercise classes were included as intervention. To test the effectiveness of the model, blood tests were conducted. Changes in lifestyle modification were recorded using a semi-quantitative food frequency questionnaire and exercise survey. The body composition was evaluated using bioelectrical impedance analysis.

Results:

Significant improvements in nutritional status were seen in (i) Core Food Group Consumption [daily fruit serves (+0.47 serves) and, daily vegetable serves (+0.44 serves), daily dairy or alternatives serves (+0.36 serves)], (ii) Discretionary Food Group Consumption [daily refined grains serves (-0.42 serves]], (iii) Exercise Duration [weekly resistance training (+0.24 hours)], and (iv) Metabolic Profile [alanine transaminase (-7.89 IU/L), LDL cholesterol (-4.17 mg/dl), triglycerides (-0.2mmol/l). All p-values < 0.05.

Conclusions:

The innovative health model warrants to be a sustainable primary healthcare practice in future.

Abstract No.: 200140

Association of Alternate Anthropometric Measures on All-Cause and Cardiovascular Disease-Related Mortality in US Adults, 2007-2018

First Author: Jeff LEUNG

Co-Author(s): Adrian BACONG, Robert HUANG, Armaan JAMAL, Gloria KIM, Latha PALANIAPPAN, Nicholas PANYANOUVONG, Julia RAGHU, Nitya RAJESHUNI, Malathi SRINIVASAN, Seth TIVAKARAN, King Sum TONG, Lester Andrew UY

Purpose:

Cardiovascular disease (CVD) is the leading cause of death globally. Obesity, an established risk factor, is conventionally measured through body mass index (BMI), an inadequate reflection of body composition. We investigated the association of alternative body composition measures–Waist-to-height ratio (WHtR) and Body Roundness Index (BRI) for all-cause and CVD-related mortality risk. We aimed to address the inconsistencies in using BMI as an anthropometric measure in predicting CVD risk and introduce alternative metrics in primary care settings.

Methods:

This cross-sectional, nationally-representative cohort study of 34,655 adults 20 years utilized novel data combining 2007-2018 National Health and Nutrition Examination Survey (NHANES) with the 2019 National Death Index Linked Mortality File. Cox regression analyzed CVD-related and all-cause mortality by anthropometric measure, visualized by Kaplan-Meier curves. Analyses were stratified by race and ethnicity: non-Hispanic White (NHW) (n =14,024), Hispanic (n = 8,852), non-Hispanic Black (NHB)(n = 7447), and other races (n = 4332).

Results:

WHtR had the strongest association with all-cause mortality (HR=3.39; 95% CI: 1.79, 6.40), then BRI (HR=1.06; 1.04, 1.08), and BMI (HR=1.01; 0.99,1.02). CVD-related mortality: WHtR (HR=12.84; 95% CI: 3.5, 47.1), BRI (HR=1.12; 1.06, 1.17), and BMI (HR=1.03; 1.01,1.05). NHB females had the highest obesity rates by BMI and BRI, and Hispanic females with WHtR. NHW males exhibited the highest CVD mortality rates.

Conclusions:

WHtR demonstrated the strongest association with CVD and all-cause mortality, followed by BRI, and the weakest association with BMI. This highlights the need to further investigate alternative body composition metrics in assessing obesity-related risks.

Abstract No.: 200133

Association of mental-physical chronic disease sequences with mortality and healthcare utilization: a territory-wide retrospective cohort study

First Author: Cuiling WEI
Co-Author(s): Yuqi HU, Francisco Tt LAI, Boyan LIU, Wenlong LIU, Qi SUN, Lingyue ZHOU

Purpose:

This study aimed to compare the effects of mental-physical (men-phy) versus physical-mental (phy-men) multimorbidity sequences on mortality and healthcare utilization among patients with mixed mental-physical conditions.

Methods:

A retrospective cohort study was conducted using data from the Clinical Data Analysis and Reporting System (CDARS) of the Hospital Authority (HA) in Hong Kong. The study included patients first diagnosed with either a mental or physical disorder in 2003 who later developed multimorbidity. Mental disorders considered were alcohol misuse, bipolar disorder, depression, and schizophrenia. The primary outcome was all-cause mortality, while secondary outcomes included hospitalizations, length of hospital stay, and emergency room visits. Conditional Poisson regression estimated incidence rate ratios (IRRs) and rate ratios (RRs) for mortality and healthcare utilization, adjusted for sex, age, and time interval between conditions.

Results:

The study included 12,835 participants, with 2,839 in the phy-men group and 9,996 in the men-phy group. Mortality rates were 29.3% in the men-phy group and 31.6% in the phy-men group, with no significant difference after adjustment (adjusted IRR: 1.05). However, the men-phy group had higher rates of hospitalizations (adjusted RR: 1.21) and emergency room visits (adjusted RR: 1.07) but shorter hospital stays (adjusted RR: 0.88). Younger patients and those with longer intervals between conditions showed higher healthcare utilization in the men-phy group.

Conclusions:

Mental-physical multimorbidity sequence did not significantly affect mortality but was linked to differences in healthcare utilization, underscoring the need for tailored healthcare strategies and further research.

Abstract No.: 200068

Association of multimorbidity intervals with the risk of mortality among people living with diabetes: a territory-wide nested case-control study

First Author: Wenlong LIU

Co-Author(s): Rachel Yui Ki CHU, Yuqi HU, Francisco Tt LAI, Boyan LIU, Qi SUN, Eric WAN, Cuiling WEI, Ian Chi Kei WONG, Lingyue ZHOU

Purpose:

Multimorbidity interval, referred to as the time interval from the first chronic condition diagnosis to the occurrence of multimorbidity. Multimorbidity is highly prevalent among people with diabetes and associated with greater risk of mortality. However, there is little research quantifying the association of multimorbidity intervals with mortality risk among people with diabetes.,We aim to examine whether, and to what extent, time interval between diabetes and a second chronic disease may be associated with the risk of mortality.

Methods:

The territory-wide nested case-control study included patients first diagnosed with diabetes from January 1, 2010 to December 31, 2012 and subsequently diagnosed with another chronic condition as of December 31, 2019. We extracted those who died after developing multimorbidity as case participants. We randomly selected 4 patients with same age, sex, and second chronic condition who had not died after going through the same survival period of the case participants as control participants.,Conditional logistic regression was used to estimate the adjusted odds ratio of death. Sub-group analysis was conducted in men, women, those aged 65 years or more, and those were younger than 65 years. Stratified analysis was conducted for each of the second chronic conditions.

Results:

Overall, the risk of mortality reduces by 19% with the extension of multimorbidity interval by one year [95% CI 17%-21%]. Similar associations were estimated in sub-group analysis and stratified analysis.

Conclusions:

Our findings suggest that clinical management of diabetes should focus on mitigating and lowering the risk of developing multimorbidity to reduce further complications and mortality.

Abstract No.: 200073

Associations of reallocating sedentary leisure-time to alternative discretionary movement behaviours with incident cardiometabolic diseases in 0.5 million Chinese adults

First Author: Paul COLLINGS
Co-Author(s): Shiu Lun AU YEUNG, Derrick A BENNETT, Soren BRAGE, Benjamin John COWLING, Huaidong DU, Harrison Hin Sheung HO, Youngwon KIM, Stephen J SHARP, Parco M.f. SIU, Mengyao WANG, Nicholas J WAREHAM

Purpose:

To estimate the implications of reallocating sedentary leisure-time to non-sedentary behaviours for incident cardiometabolic diseases.

Methods:

A prospective cohort study of 462,370 Chinese adults from China Kadoorie Biobank with no prevalent diabetes and cardiovascular diseases (mean age 51 years; 59% female). Isotemporal substitution Cox regression was used to estimate the associations of reallocating sedentary leisure-time to the same amount of sleep, housework, Taichi, or conventional exercise with the risk of incident diabetes, stroke, and myocardial infarction (MI). We estimated adjusted hazard ratios and 95% confidence intervals per 30 minutes/day time exchanges. Potential impact fractions were calculated to estimate the proportional reductions in incident disease cases associated with time substitutions, assuming causality.

Results:

During >5.25 million person-years of follow-up, 19,738 incident diabetes, 51,460 stroke, and 6,767 MI cases were accrued. Lower disease risks were found for replacement of sedentary leisure-time by sleep (in participants who slept <7 hours/day), housework, and Taichi. The associations were strongest when replacing sedentary leisure-time with conventional exercise (diabetes: 0.97 [0.95-0.99], stroke: 0.97 [0.95-0.98], MI: 0.92 [0.88-0.96]). Estimated potential impact fractions ranged from 5.5% (95% confidence interval: 4.2-6.7%) for stroke when replacing sedentary leisure-time with housework, to 23.7% (13.6-33.7%) for MI when reallocating sedentary leisure-time to conventional exercise.

Conclusions:

Replacing sedentary leisure-time with other behaviours such as housework, Taichi, sleep (in short sleepers) and conventional exercise is associated with lower risks of common cardiometabolic diseases in Chinese adults. Prevention strategies should be developed to promote movement behaviours and optimal levels of sleep at the expense of sedentary leisure-time.

Abstract No.: 200050

Boosting Digital Health Engagement in Hong Kong's Elderly through an Intergenerational Home-Based Intervention: A Pilot Pre-Post Study of the Generations Connect Project

First Author: Wanjia HE
Co-Author(s): Sophia CHAN, Yuen Kwean Agnes LAI, Tzu Tsun LUK, Kelvin WANG, Runqi YUAN

Purpose:

The Generations Connect Project aims to improve the elders' health through personalized home-based health assessment and digital intervention delivered by trained healthcare professional students. This pilot study assesses the effectiveness of these interventions in improving eHealth literacy and promoting healthy behaviors among older adults in Hong Kong.

Methods:

In November 2022, 101 participants with a median (IQR) age of 80 (77, 85) were enrolled. The intervention (~1.5 hours), delivered by trained students aged 18-29, comprised personalized home visits focusing on various health themes including mobile health usage, QR code navigation, instant messaging (WhatsApp), and health advice for physical- and mental-wellbeing. Participants received daily WhatsApp reminders for 14 days post-intervention. eHealth literacy, well-being, and lifestyle were assessed using a 76-item questionnaire at baseline and 2-week follow-up.

Results:

The retention rate was 70.3% (71/101). Multiple imputation analyses indicated a non-significant increase in eHealth literacy (21.41 vs. 23.80-score) and daily smartphone usage (2.09 vs. 2.54-hour). Physical and mental well-being indicators were similar to those of the baseline. However, perceived lifestyle enhancements were noted, including increased physical exercise (70.4%), frequent online health video watching (60.6%), and improved hand-washing practices (54.9%) at the 2-week follow-up. The intervention received high satisfaction ratings (4.32/5) from participants.

Conclusions:

Despite non-significant increases in eHealth literacy and smartphone use, the intervention promoted positive lifestyle changes among the elderly. The study highlights the potential of intergenerational, home-based approaches to bridge the digital divide in healthcare for the elderly, especially in the context of primary healthcare new journey in Hong Kong.

Abstract No.: 200052

COVID-19 Vaccine Uptake and Associated Factors Among Older Adults in Hong Kong: A Community-based Cross-Sectional Study

First Author: Wanjia HE
Co-Author(s): Sophia CHAN, Runqi YUAN

Purpose:

To examine the association between COVID-19 vaccine uptake and social-demographic, physical, and mental health factors among older adults in Hong Kong.

Methods:

In 2023, a survey of 3,229 participants with a median age of 77 was conducted across 18 districts within the Generations Connect Project. Student Ambassadors conducted a home-based visit to administer a questionnaire on COVID-19 history, including number of vaccine doses received; socio-demographic factors; physical and mental health; primary healthcare use; eHealth literacy; and exercise habits. Ordinal logistic regression analyses examined potential predictors of COVID-19 dose receipt (<3-, 3-, >3).

Results:

56.2% received 3-dose, 31.4% received >3-dose, and 12.4% reported receiving <3-dose. Generalized ordinal logistic regression found that older (p for trend, odds ratio (OR): 0.98, 95% CI: 0.97-0.99), primary or below education (vs. tertiary, 0.67, 0.49-0.92), and living in public housing (vs. not, 0.77, 0.66-0.90) were significant predictors of receiving fewer doses of vaccine. Conversely, going outside 3-4 days/week (1.70, 1.04-2.79) or >4-day/week (1.95, 1.25-3.06), exercising >300-minute/week (1.34, 1.07-1.67), joining District Health Centers (vs. not, 1.30, 1.11-1.52), and having higher eHealth literacy (p for trend, OR: 1.013, 95% CI: 1.005-1.020) were significant predictors of receiving more vaccine doses.

Conclusions:

This study identifies socioeconomic and behavioral factors influencing COVID-19 vaccine uptake among older adults in Hong Kong. Targeted interventions to enhance vaccine acceptance are needed, particularly for those with lower education and living in public housing, while promoting eHealth literacy and physical activity, and joining District Health Centers, may further support vaccination efforts and prevent vaccine hesitancy.

Abstract No.: 200098

Changes in Anti-Hypertensive Prescription And Blood Pressure Among Patients With Hypertension In Hong Kong after COVID-19 outbreaks

First Author: Zhuoran HU

Co-Author(s): David CHAO, Karen GREPIN, Wai Kit KO, Chak Sing LAU, Gary Kui Kai LAU, Cindy Lo Kuen LAM, Ivy MAK, Jianchao QUAN, Eric WAN, Ian Chi Kei WONG, Yuk Kam YAU

Purpose:

To understand how the COVID-19 outbreaks indirectly influenced the prescription and blood pressure (BP) of patients with hypertension in Hong Kong.

Methods:

An open cohort included patients with hypertension but without COVID-19 infection who were managed by the Hospital Authority from January 2010 to April 2022. They were follow-up until infected with COVID-19 or died. Age- and sex-standardized outcomes were compared to patients in 2019, including monthly prescription rate (per 1,000 people) and dispensed duration (days) of anti-hypertensive agents, and the proportion of patients with office-measured BP≤140/90 mmHg (%). Interrupted time series analyses were conducted using three breakpoints: 1) February 2020 (initial outbreak), 2) March 2021 (low-infection period, vaccination available), and 3) January 2022 (Omicron outbreak). Generalized linear models with seasonality adjustment were used.

Results:

The study included 1,448,621 patients. In February 2020, the prescription rate dropped by 5.1%, while the dispensed duration increased by 4.4%. The prescription rate rebounded in March 2021, 7.6% higher than the pre-pandemic mean. After the Omicron outbreak, the prescription rate trend slumped again (-7.8% per month), with a climbing dispensed duration (+5.8% per month). However, the proportion of patients with office-measured BP≤140/90 mmHg remained continuously lower than the pre-pandemic mean from February 2020 to April 2022.

Conclusions:

Despite the increased dispensed duration potentially maintaining treatment continuity during reduced prescription rates after COVID-19 outbreaks, BP control was persistently less optimal following the initial outbreak. This suggests that factors beyond medication dispensing may have influenced BP control in hypertension patients after the COVID-19 initial outbreak.

Abstract No.: 200077

Comparing demographic and clinical features of hospitalized COVID-19 patients in Hong Kong since the Omicron Outbreak

First Author: Jing Yee Christie CHING
Co-Author(s): Abraham K.C. WAI

Purpose:

The purpose of this study was to describe the changes in clinical and demographic characteristics among hospitalized patients infected with Coronavirus Disease 2019 (COVID-19) since the Omicron outbreak in Hong Kong.

Methods:

We collected territory-wide electronic health data of laboratory-confirmed COVID-19 patients admitted into public hospitals in Hong Kong between the time period of 1st May 2022 and 31st May 2024. Upon initial analysis, they were separated into 3 sub-wave groups, then analyzed for significant differences between-groups using proportions test, Fisher's exact test, or Kruskal-Wallis test. Meanwhile, post-hoc analysis within sub-wave groups used pairwise proportions test, pairwise Fisher's Exact test, or Dunn's test.

Results:

The demographic characteristics were significantly different between sub-wave groups in terms of age, sex, Charlson Comorbidity Index score, type of comorbidity, length of hospital stay, hospital institution, social deprivation index, and residential district. Whereas clinical characteristics showed significant difference between-groups in the levels of blood biomarkers and type of in-patient drug administration.

Conclusions:

Despite the decreasing incidence of COVID-19 cases admitted to public hospitals in Hong Kong, the increased case-fatality ratio suggests long-term surveillance of COVID-19 should be maintained to prepare for potential mutations and outbreaks. In particular, exploring the impact of health policies such as the mitigation of pandemic-related border controls and its effect on the post-COVID era.

Abstract No.: 200098

Changes in Anti-Hypertensive Prescription And Blood Pressure Among Patients With Hypertension In Hong Kong after COVID-19 outbreaks

First Author: Zhuoran HU

Co-Author(s): David CHAO, Karen GREPIN, Wai Kit KO, Chak Sing LAU, Gary Kui Kai LAU, Cindy Lo Kuen LAM, Ivy MAK, Jianchao QUAN, Eric WAN, Ian Chi Kei WONG, Yuk Kam YAU

Purpose:

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Methods:

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Results:

The study included 1,448,621 patients. In February 2020, the prescription rate dropped by 5.1%, while the dispensed duration increased by 4.4%. The prescription rate rebounded in March 2021, 7.6% higher than the pre-pandemic mean. After the Omicron outbreak, the prescription rate trend slumped again (-7.8% per month), with a climbing dispensed duration (+5.8% per month). However, the proportion of patients with office-measured BP≤140/90 mmHg remained continuously lower than the pre-pandemic mean from February 2020 to April 2022.

Conclusions:

Despite the increased dispensed duration potentially maintaining treatment continuity during reduced prescription rates after COVID-19 outbreaks, BP control was persistently less optimal following the initial outbreak. This suggests that factors beyond medication dispensing may have influenced BP control in hypertension patients after the COVID-19 initial outbreak.

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We collected territory-wide electronic health data of laboratory-confirmed COVID-19 patients admitted into public hospitals in Hong Kong between the time period of 1st May 2022 and 31st May 2024. Upon initial analysis, they were separated into 3 sub-wave groups, then analyzed for significant differences between-groups using proportions test, Fisher's exact test, or Kruskal-Wallis test. Meanwhile, post-hoc analysis within sub-wave groups used pairwise proportions test, pairwise Fisher's Exact test, or Dunn's test.

Results:

The demographic characteristics were significantly different between sub-wave groups in terms of age, sex, Charlson Comorbidity Index score, type of comorbidity, length of hospital stay, hospital institution, social deprivation index, and residential district. Whereas clinical characteristics showed significant difference between-groups in the levels of blood biomarkers and type of in-patient drug administration.

Conclusions:

Despite the decreasing incidence of COVID-19 cases admitted to public hospitals in Hong Kong, the increased case-fatality ratio suggests long-term surveillance of COVID-19 should be maintained to prepare for potential mutations and outbreaks. In particular, exploring the impact of health policies such as the mitigation of pandemic-related border controls and its effect on the post-COVID era.

Abstract No.: 200057

Conducting Asset Mapping in Community Health: A Comprehensive Methodological Guide Using Hong Kong as an Example

First Author: Xiyin CHEN
Co-Author(s): David BISHAI, Nicola FONG, Edward YE

Purpose:

A community's public health "assets", including local schools, NGOs, private hospitals, fitness centers, clinics, welfare agencies, etc., can be mobilized to work together in promoting health. Their identity and harmonization differ significantly across a city's districts. Practitioners lack systematic methodologies to map public health assets. This paper develops a systematic, practical, and detailed methodological guide for how to create an asset map at the level of a city district, using Hong Kong as a case study.

Methods:

We present a three-step process for asset mapping. The methodology for each process is then thoroughly elaborated through an organizational outline using the diagram and its illustrative application in six Hong Kong districts. We also provide supplementary materials to support the asset mapping process.

Results:

The three-step process entails (1) project design and plan, (2) data collection and analysis, and (3) knowledge exchange. Section One includes setting objectives, defining community boundaries, stakeholder engagement, and resource planning. Section Two utilizes a mixed-methods data collection approach with desk-researched, and interview-based asset identification via thematic analysis approach. Section Three synthesizes the community and academic knowledge exchange plan based on Public Health 3.0 to transform data into actionable insights and collective impacts.

Conclusions:

This paper contributes a systematic, practical, and detailed methodology and knowledge exchange plan for asset mapping to mobilize a community's strengths. Identifying and mapping public health assets through this approach helps policymakers and stakeholders build coalitions and enhance inter-organizational collaboration in communities.

Abstract No.: 200102

Drug overdose deaths in the United States: Assessing community determinant and nonlinear relationship with a random forest approach

First Author: Yuchang BAO
Co-Author(s): Chi Wai CHEUNG, Hung Chak HO

Purpose:

The study aimed to assess the community determinants of drug overdose deaths in the U.S.

Methods:

The 2024 County Health Ranking database was utilized, and determinants were categorized into four domains: community health burdens, socio-economic deprivation, living environment, and demographics. Data were divided into nine geographical regions, and urban/rural areas to understand determinants across diverse regions. Determinants were ranked based on their percentage increase in mean squared error (%incMSE) for each model. Partial dependency plots were generated to assess the non-linear relationship of determinants.

Results:

The model showed fair accuracy (averaged $R^2 = 0.54$, RMSE = 8.9846 per 100,000 population, MAE = 5.5839 per 100,000 population). The study identified injury death rate, years of potential life lost rate, and life expectancy as the most important determinants in the community health burdens domain. In the demographic domain, the high school age cohort, percentage of American Indian or Alaska Natives, and rural population were significant. Within socio-economic deprivation, people under age 65 without insurance, uninsured adults, and uninsured children were top determinants. Living environment domain determinants were not significant contributors. The partial dependency plots demonstrated nonlinear relationships between community determinants and drug overdose mortality rates across the models.

Conclusions:

The research revealed the complex interaction of various community determinants contributing to drug overdose mortality rates, emphasizing the need for a comprehensive approach addressing these determinants. Significant geographical disparities were found, suggesting strategies and policies must be tailored to address unique challenges in specific regions.

Abstract No.: 200088

Effect of Cognitive Behavioral Therapy on Depressive Symptom in Individuals with Subclinical Depression: A Systematic Review and Meta-Analysis of Follow-up Study

First Author: Sally Yuan CAO
Co-Author(s): Chi Fung CHAN, Jacqueline L M CHAN, Ming CHEN, David H.k. SHUM

Purpose:

Early intervention in depression for individuals who are at risk, namely the subclinical depression population plays an important role in the prevention of major depression. As one of the widely used non-pharmacological interventions, this systematic review and meta-analysis aimed to explore the effectiveness of cognitive behavioral therapy (CBT) in managing depression symptoms among the subclinical depression population and its efficacy in preventing the transition to major depression.

Methods:

CINAHL, EMBASE, MEDLINE, PsycINFO, PUBMED, SCOPUS, and Web of Science were searched and 28 randomized controlled trials involving 6,502 participants were identified. Meta-regression, sensitivity analysis, Cochrane risk of bias assessment tool, and funnel plots were utilized to assess heterogeneity, publication bias, and study quality.

Results:

CBT significantly reduced depressive symptoms ($g = -0.55$; 95% CI: -0.80, -0.30; $p < 0.001$) and anxiety symptoms ($g = -0.61$; 95% CI: -0.95, -0.27; $I^2 = 94.3\%$; $p = 0.0004$) over time. Meta-regression analysis indicated that both the CBT approach and intervention duration significantly influenced the therapy's effectiveness in managing depressive symptoms. The findings of this study suggest that individual-based CBT and internet-delivered CBT, administered over one to three months might be the most effective intervention parameters for managing depression.

Conclusions:

Although CBT has been proven effective in managing depressive symptoms over time, there is insufficient evidence to support its preventive effects in the progression from subclinical to major depression. Further research, especially studies conducted with multiple follow-up assessments and comparing CBT with alternative treatments, is essential to address the limitations of the current study.

Abstract No.: 200147

Effectiveness of Training Programs on Falls Prevention in Older Adults in the Community: A Meta-Analysis

First Author: Cecilia WONG

Purpose:

Falls are a primary cause of morbidity and mortality among older adults, adversely affecting quality of life and increasing healthcare costs. This meta-analysis aims to evaluate the effectiveness of training programs in reducing fall risk among this population, contributing to public health efforts.

Methods:

The clinical question addressed is: “What types of interventions effectively reduce fall risk in older adults?” A systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Databases including PubMed and Elsevier were searched for articles published between January 1, 2010, and January 1, 2020. Eligibility criteria included: 1) English-language, 2) clear intervention description, 3) peer-reviewed, 4) accessible full text, and 5) evaluation of fall risk as a primary outcome. A total of 11 studies met these criteria.

Results:

Falls are multifactorial, influenced by both intrinsic (e.g., health status) and extrinsic factors (e.g., environmental conditions). The findings indicate that training programs can significantly improve balance and reduce fall risk among older adults. Variability in outcomes may be attributed to the absence of standardized protocols in the studies reviewed.

Conclusions:

This analysis highlights the importance of addressing both intrinsic and extrinsic factors to diminish fall risk in older adults. Future research should focus on environmental modifications, communication skills, and the proper use of assistive devices to enhance safety in this vulnerable population.

Abstract No.: 200042

Effectiveness of different nurse-led smoking cessation interventions in smoking patients: A systematic review and network meta-analysis

First Author: Guowen ZHANG
Co-Author(s): Sophia CHAN, Derek YEE TAK CHEUNG, Jie ZHOU

Purpose:

To evaluate the effectiveness of various nurse-led interventions on tobacco abstinence through a network meta-analysis.

Methods:

Registration ID was CRD42023479985. Eight electronic databases were systematically searched to identify randomized controlled trials (RCTs) evaluating nurse-led smoking cessation interventions (from inception to January 2024). Outcomes were tobacco abstinence rates at the last follow-up timepoint, at < 6 months and≥ 6 months. The Revised Cochrane Handbook tool assessed the risk of bias, and confidence in evidence was evaluated using CINeMA. Network meta-analysis was performed using STATA, and odds ratio (OR) was used to estimate the effect size of the different comparisons.

Results:

27 included RCTs that involved 12,986 smoking patients and reported nine intervention combinations, resulting in 45 comparisons. Compared with usual care, network meta-analysis showed that intensive counseling (IC) + varenicline (OR=10.24, 95% CI [5.36,19.58]), IC + family assistance (FA) (OR=8.34, 95% CI [3.85,18.06]), IC + nicotine replacement therapy (NRT) (OR=3.38, 95% CI [2.07,5.52]), IC (OR=2.87, 95% CI [1.89,4.37]) and brief advice (BA) (OR=2.23, 95% CI [1.46,3.41])were effective in promoting patients' tobacco abstinence with the certainty of evidence from very low to moderate. Furthermore, the surface under the cumulative ranking curve showed that IC + varenicline (100.0%) and IC+FA (99.8%) showed the strongest intervention effect for < 6 months and ≥ 6 months tobacco abstinence rates, respectively.

Conclusions:

Varenicline, FA, NRT, IC, and BA demonstrated strong benefits in tobacco abstinence. Nurses need the flexibility to choose and combine behavioral and pharmacological interventions to reduce patients' quitting success.

Abstract No.: 200126

Effectiveness of pharmacist-led medication management services in community setting: a systematic review

First Author: Vanessa NG
Co-Author(s): Esther Wai Yin CHAN, Chi Lam CHEUNG, Marco Tsun LEE, Eric WAN, Ian Chi Kei WONG, Hei Hang Edmund YIU

Purpose:

Medication mismanagement and medication-related problems have been considered one of major causes of hospital admission. Pharmacist-led medication management service (MMS) is a structured and collaborative service, which is often recommended to optimize medication safety and promote quality use of medicines. However, most systematic reviews focused on specific patient groups or at a particular setting (e.g. elderly home, home visits). Therefore, this review aims to provide a comprehensive overview of the effectiveness and cost-effectiveness of pharmacist-led MMS delivered in community settings.

Methods:

A systematic search was conducted using various electronic databases from inception to 2024. All research studies related to MMS and outcomes of interest (including hospitalization, mortality, medication adherence, changes in medication, quality of life, costs, and drug-related adverse events) were eligible for inclusion. Screening of eligible articles, data extraction and quality appraisal were conducted by two independent reviewers.

Results:

The included studies investigated the efficacy, cost-effectiveness, and clinical outcomes of MMS. These studies highlighted reduced hospital re-admission rates associated with MMS, particularly for the elderly or those who have been taking five or more medications. Additionally, some studies found that MMS is effective in improving clinical outcomes and medication adherence, which leads to enhancement in treatment efficacy and quality of life.

Conclusions:

Pharmacist-led MMS is associated with reduced hospital re-admission rate and improved clinical outcomes. Therefore, MMS can be considered a potentially effective intervention alleviating the burden on the public healthcare system. Further studies will be warranted to generate more evidence on the cost-effectiveness of MMS.

Abstract No.: 200045

Efficacy of a Preschool-based Physical Activity Intervention on Improving Muscular Health in Preschoolers: Results of a Cluster Randomized Controlled Trial during COVID-19

First Author: Wing Yin AU
Co-Author(s): Catherine Mamaid CHAN, Derwin K.c. CHAN, Ya Jun CHEN, Daniel Y.t. FONG, Hui Shine LIN, Chit Kay LEUNG, Parco M.f. SIU, Walter R. THOMPSON, Sam W.s. WONG, Stephen H.s. WONG, Clare C.w. YU

Purpose:

Higher muscle mass and fitness in preschoolers contribute to healthier bones, motor skills and neurological development, and lower obesity and cardiometabolic risks lasting into adulthood. School-based physical activity (PA) interventions improve preschoolers' muscular strength, but limited evidence outside Western context limited generalizability to ethnicities with body compositional differences. Moreover, PA's effect on children's muscle mass remains inconclusive. With preschoolers' muscular strength worsened during COVID-19, we investigated the effect of school-based PA intervention on preschoolers' muscle strength and mass during and post-pandemic years.

Methods:

This on-going cluster randomized controlled trial involves 3300 preschoolers (110 Hong Kong preschools). Children were randomized into intervention and control groups according to schools attended. Batch 1 (9/2022-6/2023) included 207 preschoolers [mean age=5.27 (SD 0.38)] from 10 preschools (5 per group). Intervention schools received twice-weekly 75-minute game-based PA class for 10 months. Outcomes measured at start and end of school year included muscle strength (handgrip, stationary long jump, and vertical jump), and muscle mass (bioelectric impedance-based analyzer).

Results:

Significant group-by-time interaction effects were found for muscle power assessed by long jump ($p=0.017$), but not for handgrip and vertical jump. Effects on muscle mass trended towards significance ($p=0.087$).

Conclusions:

Preliminary evidence suggested efficacy of school-based PA intervention on improving preschoolers' muscle strength during COVID-19, contributing to cardiometabolic risks reduction benefitting long-term health, highlighting the importance of promoting in-school PA during early childhood. Effects on muscle mass remain to be explored in coming years with larger sample size.

Abstract No.: 200149

Empowering Communities with Evidence-Based Lifestyle Interventions for Diabetes Prevention

First Author: Mandy HO
Co-Author(s): Heidi Tze Man CHAN, Renee CHU, Dorothy HO, Amy LAU, Michael LAU, Wendy LI, Kammie YU

Purpose:

Type 2 diabetes is a major non-communicable disease with high and escalating cost for communities and healthcare systems. This paper showcases the results of implementing evidence-based lifestyle interventions for diabetes prevention in community settings targeting obese adults with prediabetes.

Methods:

The research team trained and empowered five non-governmental organizations to deliver a 12-month evidence-based lifestyle intervention program (includes diet and physical activity interventions) for diabetes prevention. 670 Chinese adults with obesity (BMI≥25kg/m2) and prediabetes were recruited to receive 6 group-based sessions and 2 individual face-to-face diet counselling sessions during the first 6 months, followed by monthly telephone support during the subsequent 6 months. The intervention targeted 5% weight loss. This paper reports the intervention effects on body weight, glycated hemoglobin (HbA1C), and blood lipid profile among participants who have completed the first 6-month interventions.

Results:

A total of 190 participants (mean age=53 ±5.9 years, BMI=28.7 ±3.8kg/m2, mean HbA1C=6.0±0.3%) completed the 6-month post-intervention assessment. The interventions led to a significant reduction in the mean BMI (-1.1 ± 1.3kg/m2), HbA1C (-0.09±0.25%, P<0.001) and low-density lipoprotein levels (-0.11±0.57mmol/L, P<0.001), as well as improvements on the high-density lipoprotein levels (0.05±0.19 mmol/L, P<0.001). 27.1% of participants achieved a clinically significant weight loss of 5% or more from baseline and 12.5% participants showed remission to normal glucose regulation from pre-diabetes after 6-month interventions.

Conclusions:

This joint venture community empowerment project demonstrates that evidence-based lifestyle interventions effectively reduced diabetes risk and improved cardiometabolic profiles in obese adults with prediabetes.

Abstract No.: 200128

Empowering Connections: A Qualitative Study of Student-led Health Interventions Delivered During Home Visits for Community Elders in Hong Kong

First Author: Yi Chun ZHU
Co-Author(s): Sophia CHAN, Ka Po Amy CHEUNG, Tzu Tsun LUK, Tin Shun Titan MAK, Kelvin WANG, Yiran WANG, Tsz Yin WONG, Derek YEE TAK CHEUNG, Runqi YUAN

Purpose:

A community-based project provided training and practice opportunities for university students to deliver multi-health themed interventions to underprivileged elders through home visits in Hong Kong. We explored students' experiences after intervention delivery.

Methods:

Semi-structured, individual interviews were conducted with 18 university students (9 male; mean age=22.2) who received a 3-hour training and delivered 5 home visits in the past 3 months. All interviews were audio-recorded, transcribed verbatim, and analyzed with thematic analyses.

Results:

Two main themes on opportunities and challenges emerged. First, most students indicated home visits provided valuable opportunities for them to connect with elderly families, gaining insights into their lifestyles, and use of social resources beyond classroom learning. This resulted in a better understanding of primary healthcare, healthy ageing, research methodologies, and improved communication skills. Second, students perceived challenges in promoting healthy behavioral changes to elders during the 1.5-hour home visits, especially those with low education levels and limited digital literacy. Students faced difficulties such as technical issues, low motivation, and language barriers, when trying to improve the electronic health (eHealth) literacy of elders, particularly when introducing health-related mobile applications. Nevertheless, students valued home visits as a career-beneficial self-learning experience.

Conclusions:

While students value the opportunity to connect with elders and delivered health interventions, they experienced challenges in improving complex health behaviors (e.g. eHealth literacy). Ultimately, enhancing eHealth literacy both empower the elders to take charge of their own health and foster intergenerational connections, especially in the context of an aging population and primary healthcare reform in Hong Kong.

Abstract No.: 200074

Estimating transmission dynamics and severity of COVID-19 in Shenzhen from November 2022 to Chinese New Year 2023

First Author: Yichi LI
Co-Author(s): Kathy LEUNG, Richard VALE, Abraham K.C. WAI, Joseph WU, Kai Hang YIU

Purpose:

Since implementation of “20 measures” in November 2022, which marked a shift from zero-COVID policy, a series of adjustments were made to PHSMs (Public Health and Social Measures). COVID-19 positive rates increased rapidly in Chinese cities, including Shenzhen. Transmission dynamics and severity of COVID-19 in Shenzhen following changes in PHSMs were modeled and estimated in this study.

Methods:

Time intervals from symptom onset to hospitalizations from electronic health records were extracted using keyword matching algorithm. The spread of COVID-19 was simulated using age-structured SEIR model, with parameters estimated using Markov Chain Monte Carlo and presented by posterior means and 95% CrI (Credible Intervals).

Results:

The estimated effective reproductive number in Shenzhen increased rapidly after the 30 November 2022 press conference on relaxed PHSMs, peaking at 2.76 (95% CrI: 2.33-3.14) on 11 December. The estimated cumulative infection attack rate increased from under 1.5% on 7 December to 97.0% (95% CrI: 96.1%-97.8%) on 7 January 2023. The estimated mean time from symptom onset to hospitalization (from the fever clinic or direct hospitalization) was 3.26 (95% CrI: 3.00–3.55) and 3.45 (95% CrI: 3.13–3.81) days, respectively. Compared with infections aged 0-18 and 19-58, the estimated hospitalization probability for those over 59 was 16.5 and 8.32 times higher for direct admissions, and 5.30 and 15.6 times higher for those from fever clinic.

Conclusions:

This study showed that real-time mobility data and electronic health records can be integrated into infectious disease modeling framework when PHSMs are gradually phased out or case reporting becomes less accurate.

Abstract No.: 200091

Hong Kong Primary Care Morbidity Survey 2021-2022

First Author: Julie CHEN
Co-Author(s): David CHAO, Tse EMILY, Cindy Lo Kuen LAM, Joyce TSANG, Eric WAN, Samuel WONG

Purpose:

Up-to-date and accurate information about the health problems encountered by primary care doctors is essential to better inform health care policy and practice. Morbidity surveys record doctor-documented diagnoses and are critical in the absence of a centralized primary care electronic medical record database. The aim of this study was to determine the morbidity patterns in Hong Kong primary care.

Methods:

This was a prospective practice-based survey of HK primary care doctors. Participants were recruited by convenience and targeted sampling from both public and private sectors. They recorded health problems for consecutive patient encounters during one designated week in each season of the year. Health problems were coded using the International Classification of Primary Care (2nd edition) and frequencies were calculated using descriptive statistics.

Results:

Forty-nine doctors participated the study and contributed 172 doctor-weeks of data from March 2021 – February 2022, resulting in 40,984 health problems based on 26,897 unique patient encounters. The most frequently recorded diagnoses were uncomplicated hypertension, lipid disorders, immunization, Type 2 DM and upper respiratory tract infections. Compared with the 2007-08 morbidity survey, there was an increase in the proportion of chronic conditions (35.6% to 46.7%), psychological problems (2.6% to 2.8%), and preventive care (3.1% to 9.2%).

Conclusions:

This study underscores the breadth of morbidity in primary care and shows the increasing burden of chronic diseases, mental health and preventive care. A family-doctor model of primary care and an integrated system approach with dedicated resources are needed to better support doctors to care for patients in these key areas.

Abstract No.: 200078

Impact of COVID-19 on deliberate self-harm incidence in Hong Kong: Interrupted time series analysis of emergency department data between 2016 and 2022

First Author: Jing Yee Christie CHING
Co-Author(s): Abraham K.C. WAI

Purpose:

The primary objective was to show changes in deliberate self-harm (DSH) related emergency department (ED) visits before and during the Coronavirus Disease 2019 (COVID-19) with respect to age groups. The secondary objective performed sub-group analysis on demographic and clinical characteristics.

Methods:

Territory-wide clinical data was collected between the years 2016 and 2022 in Hong Kong. Then, we conducted an interrupted time series analysis involved quasi-experiment to estimate quantitative counterfactual results of the pandemic period. Here, the expected monthly DSH-related ED visits and adjusted incidence ratios (IR) were estimated by fitting a negative binomial model to pre-pandemic data, while considering temporal trends, seasonality, and population variation.

Results:

Significant differences in adjusted IRs were observed in young adult males (2020: 1·34 (CI: [1·09, 1·67]), 2021: 1·94 (CI: [1·44, 2·67]), 2022: 2·53 (CI: [1·83, 3·65])), adult males (2020: 1·58 (CI: [1·46, 1·71]), 2021: 2·64 (CI: [2·37, 2·92]), 2022: 3·13 (CI: [2·74, 3·51])), adult females (2020: 1·13 (CI: [1·02, 1·25]), 2021: 1·52 (CI: [1·33, 1·76]), 2022: 1·64 (CI: [1·43, 1·95])), and elderly males (2020: 1·53 (CI: [1·23, 1·94]), 2021: 2·37 (CI: [1·75, 3·24]), 2022: 3·01 (CI: [2·08, 4·43])). Notably, adjusted IRs were highest among those with co-occurring alcohol and drug associated mental health issues.

Conclusions:

Relevant stakeholders such as policymakers, psychiatrists, and healthcare professionals should collaborate to raise awareness for young adult males, adults, and elderly males in Hong Kong. Further research into the potential risk factors of DSH among these vulnerable groups can improve infectious disease pandemic preparedness in Hong Kong.

Abstract No.: 200150

Impact of a Community-based Lifestyle Intervention Program on Physical Activity in Overweight Adults with Prediabetes: A Randomized Controlled Trial

First Author: Jundi YANG
Co-Author(s): Grace CHUNG, Mandy HO

Purpose:

To assess the effectiveness of a community-based lifestyle program in increasing physical Activity (PA) among overweight adults with prediabetes.

Methods:

A 12-month RCT involved 199 Chinese adults aged 40-60 years with prediabetes. The intervention group received monthly group sessions (two focusing on PA) for six months, followed by six months of maintenance telephone supports. The intervention promoted ≥150 minutes/week moderate-to-vigorous physical activity (MVPA). PA were measured at baseline, 6 and 12 months using the Chinese version of the International Physical Activity Questionnaire short form.

Results:

At baseline, 50% of participants reported not engaging in any MVPA, with a mean daily sitting time of 6.7 hours (SD = 3.2). The intervention group participants not engaging in MVPA significantly decreased from 43.0% to 17.7% ($p<0.001$) at 6 months and maintained at 23.9% ($p=0.005$) at 12 months, while there was no significant changes in the control group (Baseline: 57.6%, 6 month: 51.7%, 12 month: 51.8%). The intervention group significantly reduced their daily sitting time at both 6 (coefficient: -0.85 hours/day, 95%CI: -1.43 to -0.26) and 12 months (-0.67, 95%CI: -1.33 to -0.01), whereas no significant change was reported in the control group. A significant between-group difference was observed at 6 months (-0.79, 95% CI -1.48 to -0.10), which was not maintained at 12 months.

Conclusions:

A low-intensity community-based lifestyle intervention program demonstrates the potential to motivate inactive individuals to initiate PA and reduce sitting time in the short term. However, sustaining these positive effects over the long term presents a challenge

Abstract No.: 200085

Investigating the role of community centres in initiating health behaviors for middle-aged and old age in Hong Kong

First Author: Ming Ho CHAU
Co-Author(s): Kwok Hei, Hezon TANG, Hiu Ling Vivian TSANG

Purpose:

According to the Hong Kong Census and Statistics Department (2023), the prediction of life expectancy of males and females will increase from 83.2 years and 87.9 years in 2021 to 86.4 years and 91.8 years in 2046. From 2019 to 2020, the total health expenditures on primary healthcare and secondary/tertiary healthcare were $52.9 billion and $127.3 billion respectively (Health Bureau, 2021). Given the expected health expenditure growth under population aging, it is important to investigate the role of community centres (CC) in providing protective factors on primary prevention.

Methods:

A total of 1632 Hong Kong citizens (55 - 80 years old or above) were recruited to participate in the presented study. The participants were invited to complete a self-reported questionnaire that assessed their health status and various lifestyle factors (e.g., food consumption, activity level, and community participation).

Results:

Predictably, the number of health conditions was associated with age (r=-.079, p=<.001) and subjective health (r=-.186, p=<.001), yet not related to how often interviewees engaged in CC (r=.009, p=.724). Additionally, the frequency of participating in activities in CC was positively correlated with health behaviors (i.e. Intake of fruit, intake of vegetables, frequency of exercising) (r=.170, p=<.001) and their perceived health (r=.092, p=<.001).

Conclusions:

The presented findings underlined the impact of community centres on educating older adults to perform healthy lifestyles. The findings enlighten health-related programmes in the community enabling the aged population to build up protective factors.

Abstract No.: 200119

Linear or U-shaped? Association between pain intensity and physical activity

First Author: Wentao BAI
Co-Author(s): Chi Wai CHEUNG, Hung Chak HO, Stanley Sau-ching WONG

Purpose:

The purpose of this study was to examine the contentious relationship between pain intensity and physical activity, linear relationship or U-shape.

Methods:

We performed cross-sectional analyses of 3,237 individuals aged >= 15 in Hong Kong. After controlling age, gender, insomnia, cardio, respiratory, education level, income, alcohol consumption, smoking status and self-rated mental health, the linear and non-linear associations of pain intensity and physical activity were evaluated by linear regression and generalized additive model in different subgroups.

Results:

The results of the linear regression analysis indicate a positive association between pain intensity and moderate physical activity among the aged 50 or older subgroup ($P = 0.023$). Furthermore, the generalized additive model revealed a U-shaped trend relationship between pain intensity and moderate physical activity among all respondents. There was also a U-shaped relationship between pain intensity and sitting among the severe pain subgroup (NRS >= 4) ($P < 0.05$).

Conclusions:

U-shaped associations had been observed between pain intensity and physical activity in some subgroups. These findings imply that once physical activity surpasses a specific threshold, it may promote an increase in pain intensity. For pain patients, it is necessary to control specific physical activity within a moderate range.

Abstract No.: 200089

Mobile Health Interventions to Improve eHealth Literacy in Older Adults: A Systematic Review and Meta-Analysis

First Author: Runqi YUAN
Co-Author(s): Sophia CHAN, Jie Jerry CHEN, Wanjia HE

Purpose:

To evaluate the effectiveness of mobile health (mHealth) interventions in improving eHealth literacy among older adults, exploring intervention theoretical frameworks, content design, and sustainability.

Methods:

Following PRISMA guidelines, a comprehensive literature search was conducted across seven databases for studies published between January 2007 and July 2024. The review focused on mobile-based eHealth interventions targeting older adults, reporting outcomes related to eHealth literacy and health improvement. A random-effects meta-analysis assessed intervention effectiveness, using effect size and 95% confidence intervals as metrics.

Results:

The search identified 9,137 records, with 8 studies meeting inclusion criteria, involving 11,453 participants with an average age of 72.18 years. The meta-analysis demonstrated an effect size of 1.40 (p=.22, 95% CI: -0.83-3.62), suggesting improvements in eHealth literacy following mHealth interventions. eHealth literacy among intervention-receiving subjects improved significantly compared to control (β=1.44, p =.014) immediately post-intervention in one longitudinal RCT, but this was not sustained at 4-month (β=-0.36, p=.50). Interventions commonly employed theoretical frameworks, with self-efficacy models being the top cited (4 out of 8). Providing user-friendly intervention content that is clear and easily understandable by older adults was crucial in enhancing their learning.

Conclusions:

While current mHealth interventions show some efficacy in improving eHealth literacy among older adults, their long-term effectiveness remains limited. There is a critical need for sustainable, tailored interventions. The Generations Connect Project's intergenerational approach with personalized delivery holds promise, but further research is necessary to evaluate its impact on bridging the digital divide and improving access to primary healthcare services for elders in Hong Kong.

Abstract No.: 200070

Modification effect of air pollution on the elderly mortality risk under prolonged heatwaves in Hong Kong

First Author: Yawen WANG
Co-Author(s): Chao REN

Purpose:

The impact of extreme temperatures on human health is a topic of growing concern in the context of climate change. This study aims to evaluate whether air pollutants modify the quantitative relationship between prolonged heatwave and mortality risk among the older adults.

Methods:

Daily mortality, meteorological factors, and air pollutants data were collected in Hong Kong from May to October, 2000 to 2021. Heatwave events were defined as short-term events (1-2 days), prolonged events (3-5 days), and extremely prolonged events (6 days and longer). Associations between heatwaves and elderly mortality risk under high and low air pollution levels were analyzed using a distributed lag nonlinear model.

Results:

The health impacts of prolonged heatwaves (RR=1.07, 95%CI:1.02-1.12, p=0.13) and extremely prolonged heatwaves (RR=1.04, 95%CI:1.01-1.08, p=0.27) were more pronounced in days with high levels of PM10 compared to less polluted days. Modification effects were observed for PM2.5 and SO2 pollution ($p<0.05$). The increased health impact of prolonged heatwave was found under higher level of NO2 (RR=1.06, 95%CI:1.03-1.10, p=0.04), NOx (RR=1.06, 95%CI:1.02-1.11, p=0.13), CO (RR=1.07, 95%CI:1.03-1.11, p=0.04), and O3 (RR=1.06, 95%CI:1.02-1.10, p=0.03), while no significant effect modification was observed for the extremely prolonged heatwaves. Subgroup analysis highlighted that female and the elderly aged 75 years and above were more vulnerable to the modifying effects of air pollution on prolonged heatwaves.

Conclusions:

Air pollution could enhance the effects of prolonged heatwave on mortality risk among the elderly in Hong Kong, while the modifying effects is less apparent for extremely prolonged heatwave events.

Abstract No.: 200105

Older age at smoking initiation predicted successful cessation: a prospective study

First Author: Sheng Zhi ZHAO
Co-Author(s): Sik Kwan CHAN, Vienna Wai Yin LAI, Tai Hing LAM, Tzu Tsun LUK, Henry Sau Chai TONG, Kelvin WANG, Derek YEE TAK CHEUNG

Purpose:

We investigated the associations of cigarettes consumption, nicotine dependence, and smoking abstinence with the age at smoking initiation (ASI).

Methods:

Prospective individual-participant data-analysis of 11 smoking cessation trials conducted within the annual 'Quit to Win' contest from 2010 to 2021 with 6-month follow-up. Biochemically verified daily cigarette smokers aged ≥18 years were recruited from the communities in Hong Kong. Age (years) at initiating weekly cigarette smoking (from ≤14 to ≥23 years) measured at baseline. Biochemically validated and self-reported 7-day point-prevalence abstinence assessed at 6 months from baseline. Binary and multinomial logistic regressions estimated the odds ratios (OR) of heavy cigarette consumption (cigarettes per day, CPD>30), high nicotine dependence (Heaviness of Smoking Index, HSI>4), and smoking abstinence for ASI.

Results:

Of 11948 smokers, 19.7% were female, 54.8% aged ≥40 years, and 87.3% had secondary or higher education. Being female and higher educated was associated with later smoking initiation (all Ps<0.001). As ASI increased from ≤14 to ≥23 years, the proportion of heavy cigarette consumption (6.2% to 3.0%, OR 0.87; 95%CI 0.83-0.90) and high nicotine dependence (11.3% to 5.3%, OR 0.87; 95%CI 0.83-0.90) reduced , while 6-month validated (4.7% to 8.2%, OR 1.05; 95%CI 1.02-1.07) and self-reported abstinence (10.8% to 18.1%, OR 1.05; 95%CI 1.03-1.05) increased (all ORs were per year).

Conclusions:

Older age at smoking initiation was associated with lower cigarette consumption and higher nicotine dependence and predicted higher validated and self-reported abstinence. More stringent measures preventing or delaying smoking initiation would promote public health via improved cessation outcomes.

Abstract No.: 200108

Optimizing Lipid Monitoring Intervals for Primary Prevention of Cardiovascular Diseases in Type 2 Diabetes Patients: A Target Trial Emulation Study

First Author: Boyuan WANG
Co-Author(s): Celine CHUI, Cindy Lo Kuen LAM, Emily TSE, Eric WAN

Purpose:

This study aims to investigate the appropriate lipid monitoring intervals for T2DM patients at various LDL-C levels.

Methods:

T2DM adults without CVD from 2009 to 2012 were identified using electronic healthcare records. Subjects were grouped into three categories based on baseline LDL-C levels (<1.8 mmol/L, 1.8-2.59 mmol/L, and ≥2.6 mmol/L). A target trial was emulated within each group using the clone-censor-weight approach to compare the impact of various LDL-C monitoring intervals (2-8, 9-15, and 16-24 months) on the risk of all-cause mortality and CVD. Follow-up began at baseline until the earliest occurrence of the outcome, mortality, or December 31, 2021.

Results:

153,341 patients were included. For those with LDL-C <1.8 mmol/L, extending the monitoring interval to 16-24 months did not increase the risk of mortality or CVD compared to 2-8 months (hazard ratios[HR] [95% CI]: mortality: 1.094 [0.948, 1.263], CVD:1.002 [0.846, 1.187]). Patients with LDL-C levels between 1.8-2.59 mmol/L had significantly higher all-cause mortality risks if they had lipid profile monitoring intervals of 16-24 month compared to those who had monitoring every 2-8 months (HR [95% CI]: 1.154 [1.069, 1.245]). For patients with LDL-C ≥2.6 mmol/L, monitoring every 9-15 months was associated with increased risks of mortality and CVD, compared to monitoring every 2-8 months (mortality: HR [95% CI]: 1.263 [1.174, 1.359], CVD:1.060 [1.017, 1.105]).

Conclusions:

The lipid monitoring interval can be every 16-24 months for patients with LDL-C <1.8 mmol/L. However, it should be at least every 9-15 months for LDL-C between 1.8-2.59 mmol/L and every 2-8 months for LDL-C ≥2.6 mmol/L.

Abstract No.: 200084

Parental Dietary Knowledge, Attitudes, and Food Parenting Practices Facilitate Adolescent Healthy Eating: A Cross-sectional Survey in Hong Kong

First Author: Qi KANG
Co-Author(s): Julie CHEN, Tsang JOYCE, Sun KAI-SING, Liu KIKI, Cindy Lo Kuen LAM, Ip PATRICK, Wong ROSA SZE MAN, Carlos WONG

Purpose:

Poor dietary habits contribute to the development of many non-communicable diseases. Adolescents' eating habits are subject to influence by family environment including parenting style, food parenting practice, and household income. This study aimed to evaluate the influence of family factors on adolescents' healthy eating using the knowledge, attitudes, and practices (KAP) model.

Methods:

A cross-sectional study was conducted among parent-adolescent dyads recruited from participants of a previous cohort study and secondary schools in Hong Kong. Participants completed a locally developed and validated KAP of Healthy Eating Questionnaire (KAP-HEQ) and items on family characteristics through an online platform. Spearman correlation and Multivariable linear regression were used to determine the family factors that are associated with adolescent healthy eating.

Results:

207 dyads of parents (mean age=46.14 years, 85.02% mothers, and 60.87% attained senior secondary education or above) and adolescents (mean age=15.21 years, 48.31% female) completed the survey. Positive associations were found between dyad knowledge ($B=0.29$, $p<0.001$) and dyad attitudes ($B=0.21$, $p<0.001$), and between adolescent practices and food parenting practices ($B=0.14$, $p<0.001$), the regulation dimension of authoritative parenting style ($B=0.09$, $p<0.05$), and parental employment status (part-time vs unemployed: $B=4.29$, $p<0.05$). A negative association was identified between adolescent practices and parental education of senior secondary or above ($B=-3.86$, $p<0.05$).

Conclusions:

The study found positive associations of parental dietary knowledge, attitudes, and food parenting practices with adolescent KAP of healthy eating. Interventions to enhance these family facilitators should be included in strategies for the promotion of KAP of healthy eating among adolescents

Abstract No.: 200136

Predictors of low bone density in Hong Kong post-menopausal women: A multi-centre cross-sectional study

First Author: Cheuk Wai CO
Co-Author(s): Anthony Kin Hei CHAN, Polly Wai Chi LI, Tin Shun MAK

Purpose:

Osteoporosis is a skeletal disorder characterized by low bone density without explicit symptoms, diagnosis is often made after fracture occurrence. This study aimed to identify the predictors of low bone density among Hong Kong post-menopausal women.

Methods:

Post-menopausal women were recruited from 5 non-governmental organizations in Hong Kong. Sociodemographic characteristics, lifestyle factors, anthropometric parameters, knowledge, self-efficacy, and health beliefs about osteoporosis were measured. Bone mineral density (BMD) was evaluated via quantitative ultrasound (QUS). Multivariate analysis was conducted to identify the modifiable predictors of BMD.

Results:

A total 164 female participants with a mean age of 71.5 ± 17.5 years were recruited. The level of bone density ranges from osteoporosis (39.0%), at-risk (41.5%), to normal (14.2%). After adjusting the non-modifiable factors, women with stronger health belief about their perceived susceptibility, seriousness of osteoporosis, and perceived benefits of osteoporosis preventive measures ($\beta = 0.977$; $p = 0.097$) and daily consumption of dairy products ($\beta = 0.431$; $p = 0.04$) predict higher bone density.

Conclusions:

To effectively provide community osteoporosis education in post-menopausal women in Hong Kong, health belief on osteoporosis and emphasis on dairy product consumption should be addressed more prominently.

Abstract No.: 200134

Preliminary observations of the Chronic Disease Co-Care Pilot Scheme and the potential benefits in reducing diabetes and hypertension-related complications and medical costs

First Author: Ivy MAK
Co-Author(s): David BISHAI, Linda CHAN, Edmond CHOI, Cindy Lo Kuen LAM, Kiki LIU, Amy NG, Martin ROLAND, Emily TSE, Eric WAN, William WONG, Zoey WONG, Yahui XU

Purpose:

The Chronic Disease Co-Care (CDCC) Pilot Scheme provides subsidized screening and team-based protocol-driven care for diabetes mellitus (DM) and hypertension (HT). Using preliminary observations of participants enrolled in the first 8 months of the Scheme, we estimated the potential benefits of full-scale implementation of the Scheme over the long term.

Methods:

Data for CDCC Scheme participants enrolled from programme launch until June 30th 2024 was extracted from the DHC ON-Ramp and CDCC IT systems. The number of potential pre-DM, DM and HT cases identifiable in the population was estimated from the proportion of participants from the CDCC, and from the prevalence reported in the Population Health Survey 2020-2022. The number of complications and deaths avoided, and direct medical costs saved were proxied from the Risk Assessment and Management Programme (RAMP) for DM and HT in the Hospital Authority.

Results:

A total of 20,022 participants were enrolled (mean(SD) age 60.4(7.7), 63.2% females). Of all, 3,747 (19.0%) participants had pre-DM, 1,803(9.1%) had pre-DM and HT, 1,369(6.9%) had HT only, 950(4.8%) had DM only, and 383(1.9%) had both DM and HT. Assuming a conservative 10% uptake rate for the Scheme over 10 years, an estimated 6,725-8,655 cardiovascular events and 8,967-11,249 all-cause mortalities could potentially be prevented, and total direct medical costs saved could range between HK$3.9-4.9 billion.

Conclusions:

About 1 in 2.5 participants had undiagnosed pre-DM, DM or HT. Subsidized screening with management in the private healthcare sector may effectively facilitate early disease detection, and prevent complications development and public medical costs incurred.

Abstract No.: 200086

Prevalence and patterns of waterpipe smoking in youth smokers of a youth quitline in Hong Kong

First Author: Hong CHEN
Co-Author(s): Tzu Tsun LUK, Kelvin WANG, Annie On Ni YIP

Purpose:

To investigate the prevalence and patterns of waterpipe smoking in youth smokers

Methods:

We analyzed data from 1178 youth tobacco smokers aged ≤25 years of the University of Hong Kong (HKU) Youth Quitline during 2016-2022. Current waterpipe smoking was defined as smoking waterpipe at least once within 30 days. Use of e-cigarettes, heated-non-combustible products (HTPs), marijuana, and alcohol was assessed. Chi-square test and logistic regression were used for analyses

Results:

The prevalence of current waterpipe smoking was 9.7% for all participants, increasing from 8.1% in 2016/18 to 12.0% in 2020/22. Most respondents smoked waterpipe at indoor bars (71.6%), with friends (95.7%), and for a median time of 30 minutes. The most common flavor was fruit (55.3%), followed by mint (9.4%), and spices (5.3%). Current waterpipe smokers were more likely to be older (77.0% vs 67.1%), tertiary educated (67.7% vs 56.6%), and currently use e-cigarettes (42.5% vs 19.9%,), HTPs (14.8% vs 4.8%), alcohol (77.2% vs 56.8%), and marijuana (16.7% vs 3.6%) (all $p<0.05$). Current users of e-cigarettes, HTPs, marijuana, and alcohol had higher odds of waterpipe smoking (aOR 2.56-5.08, all $p<0.001$)

Conclusions:

Waterpipe smoking is increasingly popular among youths in Hong Kong, with the most common flavor being fruit and place of smoking being indoor bars. Our findings support the government's ban on flavored tobacco products to include waterpipe and highlighted the need to strengthen regulation of illegal waterpipe smoking in bars. The positive associations between waterpipe and other substance use indicated the need of addressing polysubstance use in youths

Abstract No.: 200107

Protecting Children and Empowering Families: A Study Protocol for a Randomized Waitlist-controlled Trial to Reduce Secondhand Smoke Exposure in Children and Increasing Smoking Cessation

First Author: Sheng Zhi ZHAO
Co-Author(s): Sophia CHAN, Mengyao LI, Kelvin WANG

Purpose:

There is no safe level of secondhand smoke (SHS) exposure, but 40% of children in Hong Kong were exposed to SHS, primarily from parental smoking at home. We designed a study to evaluate the effectiveness of a family-centered intervention model in increasing smoking cessation and reducing SHS exposure in children.

Methods:

This is a two-arm, individual-randomized, waitlist-controlled trial recruiting 1200 families with a daily smoking father, a non-smoking caregiver, and a child aged 12 or younger in Hong Kong. Fathers in the intervention group receive brief cessation advice, self-help booklets, 1-week of nicotine replacement therapy sampling (NRT-S), and 3 months of behavioural counselling via instant messaging (IM). Caregivers receive advice on SHS prevention measures, self-help booklets, telephone reminders at 1 month, and 3 months of IM support. The control group receive the same intervention after the 6-month follow-up. The primary outcome is biochemical validated abstinence at 6 months from treatment initiation. Secondary outcomes include self-reported 7-day point prevalence abstinence (PPA) and other cessation outcomes of the smoking father, and saliva cotinine levels, caregiver-reported SHS exposure levels, respiratory symptoms, and physical and psychological well-being of the children. Intention-to-treat analysis will be adopted.

Results:

N/A

Conclusions:

To achieve the overall goal of promoting public health and primary healthcare, this trial supports the government's efforts to strengthen tobacco control and protect children from exposure to SHS. By raising awareness among parents, this study aims to improve family health, enhance smoking cessation support within households, and create a healthy and smoke-free environment for the children.

Abstract No.: 200132

Reallocation of Sedentary Time into Physical Activity and Genetic Susceptibility for Type 2 Diabetes Risk.

First Author: Qiaoxin SHI
Co-Author(s): Shiu Lun AU YEUNG, Soren BRAGE, Ziyuan CHEN, Paul COLLINGS, Simon GRIFFIN, Haeyoon JANG, Youngwon KIM, Shan LUO, Eric WAN, Mengyao WANG

Purpose:

The development of type 2 diabetes (T2D) is characterised by the interplay between genetic risk and environmental, lifestyle-related traits. However, there is no evidence on whether the benefits of reallocating sedentary time (ST) into different intensities of physical activity (PA) for T2D risk vary by genetic risk.This study aims to examine associations of isotemporal substitution of wearable-device-measured ST with PA and incident T2D across different genetic susceptibility.

Methods:

We included 75,538 white British participants of UK Biobank (aged 40-69 years; 57% female) with no T2D at baseline. Wrist-worn accelerometry data were used to derive sleep, ST, light PA (LPA), and moderate-to-vigorous PA (MVPA) based on random forest machine learning algorithms. Polygenic risk scores (PRS) were computed based on 139 genome-wide significant, unrelated genetic markers. We used logistic regression employing compositional isotemporal substitution models, with adjustment for potential confounders.

Results:

Over a median 9-year follow-up, 1,564 incident T2D cases were identified. The odds ratio of T2D for reallocating 30 minutes/day of ST into equivalent LPA and MVPA time was 0.979 (95% confidence interval [CI]: 0.977-0.981) and 0.890 (95% CI: 0.885-0.894), respectively, after adjusting for T2D genetic risk and confounders. Reallocation of ST into an equivalent amount of LPA/MVPA time was consistently associated with lower T2D risk across strata of T2D genetic risk. No evidence of multiplicative interaction was found between each movement behaviour and genetic risk.

Conclusions:

Irrespective of genetic susceptibility to T2D, substituting ST with equivalent active time (particularly MVPA) is associated with lower T2D risk.

Abstract No.: 200093

Sleep works: Feasibility of Sleep Extension in Chronically Short Sleepers and Its Impact on cognitive and affective outcomes

First Author: Wei WANG
Co-Author(s): Chin Ho Zalman CHAN, Esther Yuet Ying LAU, Ho Yin Derek MA

Purpose:

This study investigated the feasibility of extending 90-min nighttime sleep duration among chronically short sleepers (≤6.5 hours per night) and its effects on cognitive and affective consequences.

Methods:

Results from multilevel linear model analyses indicated that participants successfully increased their sleep duration during the extension phase (β=1.697, p<0.001), with improved subjective sleep quality (β=0.391, p<0.001) and decreased daily sleepiness (β=-0.205, p=.018) post-intervention. The amount of sleep from the previous night was found to predict more positive affect (β=0.380, p<0.001) and less negative affect (β=-0.239, p=.003) the next day. Paired t-tests revealed that participants improved in vigilance (t = -3.012, p=.013, d = -0.908), planning accuracy (t = 2.390, p=.038, d = 0.721), and emotion regulation by cognitive reappraisal (t = -2.585, p=0.032, d = -0.862).

Results:

Results from multilevel linear model analyses indicated that participants successfully increased their sleep duration during the extension phase (β=1.697, p<0.001), and subjective sleep quality improved post-intervention (β=0.391, p<0.001), and decreased daily sleepiness (β=-0.205, p=.018). The amount of sleep from the previous night was found to predict the next day's positive affect (β=0.280, p<0.001) and negative affect (β=-0.239, p<0.001). Paired t-tests revealed that participants improved in vigilance (t = -3.012, p=.013, d = -0.908), the accuracy of planning problems (t = 2.390, p=.038, d = 0.721), and the effectiveness of using reappraisal to regulate negative emotions (t = -2.585, p=0.032, d = -0.862).

Conclusions:

The study demonstrated the feasibility and effectiveness of sleep extension, and its positive effects on mood, suggesting potential benefits for neurocognitive-affective well-being.

Abstract No.: 200106

Systematic review on the effectiveness and cost-effectiveness of pharmacist-led minor ailment services delivered in community pharmacies

First Author: Hei Hang Edmund YIU
Co-Author(s): Esther Wai Yin CHAN, Chi Lam CHEUNG, Marco Tsun LEE, Vanessa NG, Eric WAN, Ian Chi Kei WONG

Purpose:

As the strain on healthcare services increases, access to healthcare is often limited due to long waiting times. Pharmacist-led minor ailment service (MAS) provides patients with basic treatment advice for a range of common, self-limiting health conditions within community pharmacies. This systematic review aims to provide a comprehensive overview of the effectiveness and cost-effectiveness of pharmacist-led MAS delivered in community pharmacies.

Methods:

A systematic literature search was conducted across major electronic databases including PubMed, Embase, and Scopus. All primary studies published in English were considered. Studies reporting on the effectiveness and cost-effectiveness of pharmacist-led MAS were eligible for inclusion. Eligibility screening, data extraction, and assessment of study quality were independently performed by two reviewers.

Results:

The included studies assessed health-related outcomes, effectiveness or cost effectiveness of MAS. These studies highlighted improved healthcare access for individuals with minor ailments, as patients typically do not need an appointment to utilise MAS. Additionally, most studies demonstrated low re-consultation rates and high symptom-resolution rates. Managing minor ailments in community pharmacies through MAS not only helps alleviate the pressure on general practitioners (GPs) and hospital accident and emergency departments, but also offers a more cost-effective alternative compared to GP consultations or higher levels of care.

Conclusions:

Overall, MAS was found to be an effective and potentially cost-saving intervention by reducing the burden on public healthcare systems. Furthermore, community pharmacy-based MAS enhances the accessibility to healthcare. The study highlights the importance of further research to solidify the evidence on the cost-effectiveness of MAS.

Abstract No.: 200104

Translation and validation of the Pharmacy Services Questionnaire (PSQ) in a Chinese population

First Author: Chi Lam CHEUNG
Co-Author(s): Frank Nim Kok CHAN, Franco CHENG, Gladys CHEUNG, Tommy Lok Hei CHO, Kitty LAW, Marco Tsun LEE, Tommy LEE, Vanessa NG, Janet Hiu Tung SUN, Eric WAN, Ian Chi Kei WONG, Janet Kit Ting WONG, Hei Hang Edmund YIU

Purpose:

Purpose: The Pharmacy Services Questionnaire (PSQ) was developed to measure patient satisfaction towards pharmaceutical care. However, the PSQ has not been translated to Chinese and validated in the Hong Kong (HK) population. This study aims develop and validate a Chinese translated PSQ among Chinese patients in HK.

Methods:

Methods: The PSQ was developed and translated to Chinese using iterative forward-backward translation. Think-aloud interviews were carried out with 15 subjects to test for comprehension and content validity. A total of 236 adult subjects were recruited from three community pharmacies to complete the Chinese PSQ and the Chinese 5-Level EuroQol 5-Dimension (EQ-5D-5L HK) questionnaire. Internal consistency, construct validity, divergent validity, known-group comparison and Confirmatory Factor Analysis (CFA) were performed to confirm that the Chinese translated PSQ is a valid measure of its intended constructs.

Results:

Results: In general, participants were able to understand and interpret the Chinese PSQ correctly. The internal consistency of Chinese PSQ was excellent for the full scale, Friendly explanation (FE) subscale and Managing therapy (MT) subscale (Cronbach's $\alpha > 0.96$). CFA confirmed the hypothesized two-factor structure of the Chinese PSQ. Individuals with higher education levels showed statistically significantly higher satisfaction levels in the overall PSQ score and MT scale score compared to those with lower levels of education. Additionally, there was no statistically significant correlation between the Chinese PSQ and EQ-5D-5L HK scores.

Conclusions:

Conclusions: The Chinese translation of the PSQ is a validated, reliable and semantically equivalent instrument used to assess satisfaction towards primary care community pharmacy service.

Abstract No.: 200075

Vaccination is protective against post-Covid-19 multimorbidity incidence: a territory-wide retrospective cohort study

First Author: Boyan LIU
Co-Author(s): Rachel Yui Ki CHU, Yuqi HU, Francisco Tt LAI, Wenlong LIU, Qi SUN, Wenxin TIAN, Cuiling WEI, Ian Chi Kei WONG, Lingyue ZHOU

Purpose:

Previous research suggests that the clinical sequalae of Covid-19 are persistent long after the infection, which may be associated with an elevated risk of multimorbidity in people with a pre-existing chronic condition.

Methods:

We conducted a retrospective cohort study with territory-wide public healthcare records from Hong Kong. From patients with only one chronic disease before January 1, 2020, we selected patients infected with Covid-19 as the exposed group. We randomly selected 4 individuals of the same age, sex, and with the same first chronic condition without Covid-19 at that point as the comparison group. Poisson regression was used to calculate the adjusted incidence rate ratio of multimorbidity between those with or without Covid-19, as well as those who were fully vaccinated (3 does or more) before infection. Sub-group analysis was conducted in men, women, those who were younger than 65 years, older people. A series of sensitivity analyses were conducted to test for the robustness of the results.

Results:

Covid-19 was associated with 26%-increased rates of multimorbidity [95% CI 23%-29%], and Covid-19 with prior full vaccination was associated with only 8%-increased rates. Similar associations were estimated in sub-group analyses and sensitivity analyses.

Conclusions:

Fully vaccination reduces the risk of multimorbidity in people contracting Covid-19 who already have one pre-existing chronic disease. An early roll-out of vaccines is essential in reducing the long-term burden among this population.

Abstract No.: 200130

eHealth Interventions on COVID-19 Vaccination Rates Among Older Adults: A Systematic Review

First Author: Min Jin ZHANG
Co-Author(s): Sophia CHAN, Jie Jerry CHEN, Wanjia HE

Purpose:

This systematic review aims to evaluate existing eHealth interventions to increase COVID-19 vaccination rates among older adults and to identify effective strategies for enhancing vaccine uptake in this population.

Methods:

Following PRISMA guidelines, we searched 10 electronic databases using comprehensive search strategy from January 2020 to August 2024. Inclusion criteria encompassed participants aged 60 years and older, eHealth interventions targeting increased COVID-19 vaccine uptake, willingness to vaccinate enhancement, and vaccine hesitancy reduction. Study designs eligible for inclusion were randomized controlled trials (RCTs), non-randomized studies of interventions (NRSIs), and observational studies.

Results:

Eight studies were involved, including 2 RCTs, 4 NRSIs, and 2 cross-sectional studies, with a total of 170,959 participants. eHealth interventions included text messaging, telephone counseling, and social media. Compared to participants without text messaging, text messaging intervention could increase the vaccination rate by 26% to 38%. Telephone counseling increased vaccine uptake by 20% among those willing to participate in tailored conversations. Social media as an information source resulted in high acceptance rates for booster doses, with professional platforms showing the greatest impact (92.4%) compared to public social media (86.2%) and official social media (84.1%).

Conclusions:

eHealth interventions show promise in promoting COVID-19 vaccination rates among older adults. Further rigorous studies are needed to evaluate their feasibility in primary healthcare settings for elders in Hong Kong.

Abstract No.: 200101

A Cluster Randomized Controlled Trial to Evaluate an Online Intervention to Promote Safe and Effective Social Media Use among Autistic Young Adults in Hong Kong

First Author: Wai Shun LEUNG
Co-Author(s): Shirley LI, Carmen TSANG, William WONG

Purpose:

Social media can be a tool which potentially helps autistic people connect with friends and broaden their social network, but its use can produce both opportunities and risks including cyberbullying. The present study aimed to design and evaluate a tailor-made online intervention to promote safe and effective social media use among autistic young adults in Hong Kong.

Methods:

This research was conducted with collaboration of three local community centers working for autistic young adults (aged 18-39 years old) who were of normal intellectual level. Using a clustered randomized control trial design, participants who were randomly assigned to the experimental group received a three-session online workshop to promote skills and risk awareness concerning safe and effective social media use; while those in the control group received standard treatment in their centers.

Results:

A total of 34 young adults were recruited in three local community centers. Results showed that those in the experimental group (n=16) reported higher level of perceived self-efficacy in safe and effective social media use after completing the intervention, compared with those in the control group (n=18), and the treatment effect remained significant after controlling for confounding variables. Positive feedback towards the workshop was also received from participants.

Conclusions:

The findings showed that our tailor-made online intervention was effective in promoting higher level of self-efficacy in safe and effective social media use among autistic young adults. It could be used as a useful supplementary tool for teachers or social workers when working with this group.

Abstract No.: 200064

A Scoping Review of Reviews on Healthcare Professionals' Attitudes toward Older Adults

First Author: Wenhan XU
Co-Author(s): Jia LI

Purpose:

To examine healthcare professionals' attitudes toward older adults is of critical importance in improving the quality of gerontological care and promoting a longevity society. The objective of the present study is to examine the current state of knowledge regarding healthcare professionals' attitudes towards older people by reviewing recent systematic review papers.

Methods:

We searched systematic reviews published on peer-reviewed platforms from 2000 to September 2023 in ten databases. 730 articles were initially retrieved and 14 reviews were eventually eligible for inclusion.

Results:

Current evidence primarily focuses on three aspects regarding healthcare professionals' attitudes towards older adults: (1) cognitive, affective and behavioural manifestations of ageist attitudes; (2) professional/educational and non-professional/non-educational factors that influence attitudes; (3) education-based and experience-based interventions targeting at the attitudes. While it is difficult to synthesize the level of positivity or negativity of healthcare professionals' attitudes, we found existence of stereotypes against older people being incompetent and difficult, passive emotions and behaviours when providing care. Gerontological knowledge, professional values, and exposure to older adults are critical factors shaping healthcare professionals' attitudes. Interventions regarding positive gerontological education and intergenerational relationship have shown promising benefits.

Conclusions:

This review identified notable research gaps in current literature, namely the under-representation of non-western regions and the lack of valid and culturally sensitive instruments of ageism-related concepts. It provides valuable insights for future research, practice, and policy in tackling ageism to improve the quality of gerontological care.

Abstract No.: 200144

Associations and attributable burden between risk factors and all-cause and cause-specific mortality at different ages in patients with hypertension

First Author: Jie MEI
Co-Author(s): Qiao JIN, Cindy Lo Kuen LAM, Eric WAN

Purpose:

The study aims to investigate the association of comorbidities and modifiable risk factors with all-cause and cause-specific mortality and the mortality burdens among hypertensive patients across various age groups.

Methods:

A territory-wide retrospective cohort of 1,012,228 hypertensive adults was analyzed. Comorbidities such as diabetes, chronic kidney disease (CKD), cardiovascular disease (CVD), heart failure, and cancer, as well as risk factors like current smoking and suboptimal control of blood pressure (BP), glucose, and low-density lipoprotein cholesterol were identified. The associations of these comorbidities and risk factors with mortalities across four age groups (18-54, 55-64, 65-74, and ≥75 years) were assessed, and population attributable fractions (PAFs) were quantified.

Results:

Over a median follow-up of 10.7 years, 244,268 (24.1%) patients died. The leading causes of death were pneumonia (7.2%), cancer (5.1%), and CVD (4.2%). The relative risk of mortality related to comorbidities and risk factors decreased with age, and similar patterns were observed across cause-specific mortality. The assessed risk factors accounted for 24.0% of mortalities, with the highest proportion in the youngest group (33.5% in 18-54 years vs 19.4% in ≥75 years). CKD was the most prominent risk factor overall (12.7%), with higher proportions in older patients (11.1-13.1%), while diabetes was the primary risk factor in younger patients (15.9-13.5%).

Conclusions:

Younger hypertensive patients were at higher relative risk for mortality related to risk factors. The established risk factors contributed to one-third of the mortality burden in young patients, and the leading risk factors varied across different age groups.

Abstract No.: 200129

Bridging The Digital Divide: The Impact of an Intergeneration Intervention in Enhancing Electronic Health (eHealth) Literacy Among Hong Kong Elders

First Author: Yiran WANG
Co-Author(s): Sophia CHAN, Ka Po Amy CHEUNG, Tzu Tsun LUK, Tin Shun Titan MAK, Kelvin WANG, Tsz Yin WONG, Derek YEE TAK CHEUNG, Runqi YUAN, Yi Chun ZHU

Purpose:

Enhancing the self-health management ability of older adults is important for revitalizing primary healthcare in Hong Kong. Improving electronic health (eHealth) literacy among community older adults is needed to strengthen their self-health management capability. This study examined smartphone usage patterns among older adults and the effectiveness of an intergenerational intervention in improving their eHealth literacy.

Methods:

From January to December 2023, we recruited 3226 older adults (>65 years) from 18 districts in Hong Kong. Trained university students provided home visits and delivered eHealth-related information and smartphone training to older adults. Health assessment data were collected at baseline, 2-week and 3-month follow-ups. The primary outcome was the eHealth Literacy Scale (eHEALS) score across the three assessment time points.

Results:

Most participants used smartphones to contact family and friends (n=2760, 85.6%), with only a few browsing health information (n=410, 12.7%). Significant differences in eHEALS scores were observed at baseline, 2-week and 3-month follow-ups. The results indicated an upward trend (Mean=17.1 vs 19.2 vs 20.0, p<.001), especially among those who never searched health information before (n=88) (Mean=11.5 vs 16.0 vs 17.2, p<.001). Additionally, participants using smartphones for over 4 hours daily (n=268) scored significantly higher on eHEALS than those using smartphones for less than one hour per day (n=1217) (Mean=21.5 vs 13.4, p<.001).

Conclusions:

Fewer older adults accessed health information via smartphones, and the student-led intergenerational intervention has successfully enhanced eHealth literacy among older adults in Hong Kong. Increased digital proficiency facilitates better access to health information and encourages older adults to better health management.

Abstract No.: 200123

Change in mental health and wellbeing among residents of transitional housing: a longitudinal evaluation

First Author: Ziqiu GUO
Co-Author(s): Alice Oi Sze LAU, Mengyao LI, Tzu Tsun LUK, Kelvin WANG

Purpose:

The Transitional Housing (TH) project was launched in Hong Kong as a short- and medium-term solution to urgent housing needs. This study aimed to assess the effect of moving into TH on personal mental health and wellbeing.

Methods:

We conducted a longitudinal evaluation of one TH project from September 2023 to September 2024. One adult resident from each household was interviewed upon moving into TH (baseline) and followed every 6 months. Outcomes included anxious and depressive symptoms and wellbeing, measured using Patient Health Questionnaire-2, Generalized Anxiety Disorder-2, and World Health Organization Wellbeing Index (WHO-5), respectively. Mixed effect models with a random intercept estimated changes in outcomes.

Results:

134 participants (75.4% female, mean age: 41.44, SD 10.32) completed baseline measurements. 94.0% and 80.6% completed the 6- and 12-month follow-up, respectively. The proportion of anxious symptoms decreased from baseline to 6 months (38.8% vs. 20.2%; OR 0.35, 95% CI 0.19, 0.66) and slightly further reduced from 6 to 12 months (20.2% vs.17.2%; OR 1.00, 95% CI 0.50, 2.01). Similarly, the proportion of depressive symptoms decreased from 35.1% at baseline to 13.6% at 6 months (OR 0.18; 95% CI 0.08, 0.41), and further decreased to 10.3% at 12 months (OR 0.69, 95% CI 0.27, 1.73). The mean WHO-5 score increased from baseline (38.06, SD 25.88) to 12 months (43.26, SD 25.58) although not reaching statistical significance (β 4.58, 95% CI -0.25, 9.41).

Conclusions:

Mental health and wellbeing improved after moving into TH.

Abstract No.: 200087

EEG Hyperscanning and Musical Synchronicity on Social Healthcare Interventions

First Author: Junhao LIAO
Co-Author(s): Junling GAO, Rainbow Tinhung HO, Gan HUANG, Wanru ZHAO

Purpose:

Music-based interventions as part of social health interventions. A key therapeutic component of music therapy, musical synchronicity, plays a important role in these interventions.

Methods:

In this study, we collected EEG hyperscanning data during resting states(i.e., eyes-open and eyes-closed) and exposure to 6Hz pure songs, including the Auditory Steady-State Response (ASSR), Mismatch Negative (MMN), Auditory High Entropy Response (AHER), and the 6Hz version of “Dream Wedding” (DW). Each will last for 200 seconds, respectively.

Results:

Spectral analysis revealed significant differences in 6Hz power across conditions (6Hz averaged power: eyes-open=0.0772±0.018 dB, eyes-closed=0.1489±0.058 dB, ASSR=0.4368±0.068 dB, MMN=0.6661±0.064 dB, AHER=2.9139±0.151 dB, DW=1.0995±0.092 dB; $F(5,45)=156.718$, $p < .001$), with AHER and DW showing significantly higher power than the eyes-closed condition (both $p < .001$). We also calculated Interbrain Phase Coherence (IPC) to quantify inter-brain synchronization during social interaction, with values ranging from 0 to 1. A significant difference in IPC across conditions was found (IPC: eyes-open=0.378±0.015, eyes-closed=0.386±0.014, ASSR=0.379±0.014, MMN=0.386±0.014, AHER=0.430±0.017, DW=0.422±0.017; $F(5,495)=2.433$, $p = 0.034$), with AHER and DW conditions demonstrating marginally higher IPC than the eyes-closed condition (AHER vs. eyes-closed: $p = 0.053$; DW vs. eyes-closed: $p = 0.091$).

Conclusions:

Our research provides valuable insights into the neural mechanisms underlying the role of musical synchronicity in social healthcare interventions from a neuroscience perspective, and exhibits promising potential in rectifying abnormal brain rhythms associated with depression and other mental health disorders.

Abstract No.: 200043

Effectiveness of mHealth profiling of smokers for smoking cessation: a community-based randomized controlled trial

First Author: Derek YEE TAK CHEUNG

Purpose:

We assessed the effectiveness of a novel mobile health (mHealth) profiling via ecological momentary assessment (EMA) in personalizing smoking cessation intervention for smokers who had no intention to use smoking cessation services and medications.

Methods:

In this two-arm, assessor-blind, individual-randomized controlled trial (RCT), 459 adult daily smokers who had not used smoking cessation services or medications in the preceding 7 days and had no intention to use these aids in the next month were recruited from the community in Hong Kong and allocated 1:1 to the intervention (n=231) or control (n=228) groups. Both groups completed 5 EMAs daily for 7 consecutive days with a smartphone app to report smoking behaviors and triggers. Additionally, the intervention group received a nurse-led telephone counseling (about 20 minutes) and 10-week instant messaging support guided by mHealth profiling from EMA. The control group did not receive such intervention. Main outcomes included biochemically validated tobacco abstinence at 3 and 6 months after EMA initiation.

Results:

By intention-to-treat, tobacco abstinence rate was 8.2% in the intervention and 3.5% in the control group (odds ratio (OR)=2.46, 95% CI 1.06 to 5.75) at 3-month follow-up. The corresponding rates at 6-month follow-up were 9.5% and 4.0% (OR=2.56, 95% CI 1.15 to 5.70).

Conclusions:

This first RCT showed that telephone counseling and instant messaging support, guided by mHealth profiling, increased tobacco abstinence versus EMA alone. This intervention can be used to supplement conventional smoking cessation promotion for smokers unwilling to use smoking cessation aids.

Abstract No.: 200083

Effectiveness of psychosocial intervention to improve the mental health in men who have sex with men (MSM): A systematic review and meta-analysis

First Author: Ramon Shuochi WEI
Co-Author(s): Samantha Jeannie CHENG, William WONG

Purpose:

Men who have sex with men (MSM) are vulnerable to mental health problems. Some psychosocial interventions showed positive effects on various mental health aspects. In this study, we aimed to evaluate the effectiveness of psychosocial interventions to improve the mental health of MSM.

Methods:

We searched nine databases from inception to March 4, 2024. We included randomised controlled trials and quasi-experimental studies of psychosocial interventions aimed at improving the mental health of MSM or sexual minorities including MSM. The outcomes were the effect sizes of overall mental health and depressive symptoms, anxiety, stress, etc. We used fixed-effects or random-effects models to calculate the effect sizes (Hedges' g). Subgroup analyses were conducted based on the characteristics of interventions. The study was registered with PROSPERO (CRD42024551392).

Results:

We included 15 studies in this review and meta-analysis between 2010 and 2024. The studies recruited 2,276 participants, including 1,259 participants in intervention groups and 1,517 participants in comparison groups, primarily adolescents or young adults. The effect size of intervention for overall mental health status was 0.15 (95%CI: 0.09-0.22, $p<0.001$, $n=15$, $I2=31.02\%$). The interventions had positive effects on depressive symptoms, anxiety symptoms, substance abuse, stress, coping, emotion, and identity. The subgroup analyses and meta-regression showed no moderating effect.

Conclusions:

Psychosocial interventions are effective in improving the mental health status of the MSM. Our study provides a comprehensive evaluation of the intervention effect, with estimations of overall mental health status and some specific aspects. Psychosocial interventions can be an important approach to MSM mental health care.

Abstract No.: 200121

Enhancing Effective Engagement of Older Adults in Primary Healthcare Interventions and Health Behaviours: A Qualitative Study

First Author: Yiran WANG
Co-Author(s): Sophia CHAN, Ka Po Amy CHEUNG, Tzu Tsun LUK, Tin Shun Titan MAK, Kelvin WANG, Tsz Yin WONG, Derek YEE TAK CHEUNG, Runqi YUAN, Yi Chun ZHU

Purpose:

Hong Kong is embarking on a primary health care (PHC) reform, and ensuring effective engagement of older adults in health promotion behaviours is crucial for improving their wellbeing and health outcomes. This study examined the factors influencing older adults' acceptance and experiences in student delivered health behavioral interventions.

Methods:

Individual, semi-structured qualitative interviews were conducted with 24 older adults (aged 65-91, 15 female) to explore their experiences and perspectives on a community-based research project, with home-based, multi-themed intervention conducted by student interventionists from June 2023 to May 2024. All interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis.

Results:

Three main themes were identified. First, interactive and easy-to-follow interventions was more likely to be accepted by participants. Communication with interactions between participants and students such as demonstration and return-demonstration of handwashing and muscle exercises, would enhance memory retention and increase frequency and sustained practice of these behaviours even after the home visit. Second, participants showed changes in attitudes and perceptions towards health themes (e.g. healthy diet), but behavioral change would take longer to materialize. Third, many participants expressed a need for ongoing support to maintain behavioral changes, particularly for complex activities requiring technical skills (e.g. using electronic health resources on mobile devices).

Conclusions:

The study underscores the importance of developing simple and interactive interventions to enhance engagement of older adults in health behaviors. A more participatory approach in intervention delivery, and ongoing support with multiple intervention sessions can help reinforce understanding of complex behaviours among older adults.

Abstract No.: 200071

Implementation of self-management-based cancer survivorship program for Chinese cancer survivors

First Author: Ceci Yong Shi GUO
Co-Author(s): Wendy LAM, Danielle NG, Tin Wai Rachel NG

Purpose:

Cancer survivorship care has been recognized as a basic standard of care in oncology. HKU JCICC has developed a self-management-based survivorship program, namely the Survivorship Clinic (SurC), which emphasizes assessment and recommendation on managing physical and psychological symptoms and health maintenance and promotion of healthy eating and physical activity. Its potential effectiveness in improving patient-reported health outcomes was evaluated using existing pilot data.

Methods:

In the 120-minute SurC, patients completing curative-intent treatments received an individual assessment by our registered nurse, dietitian, exercise specialist, and psychologist, followed by a personalized care plan for symptom relief, psychosocial support, and dietary and physical activity recommendations. Reassessment was conducted three months later.

Results:

Approximately 36% of the participants (n=1110) reported high-to-severe symptom distress; 47%-54% were overweight or centrally obese. The majority had poor eating habits and physical fitness; 83% and 69%, respectively, failed to meet the daily vegetable and fruit intake recommendation and average cardio-fitness level. At three-month reassessment (n=695), 21% initially reported high-to-severe symptom distress became non-case. Half (51%) of the overweight participants achieved optimal weight management (i.e., 5% of body weight loss or 1 unit(s) BMI reduction). Substantial proportions with insufficient daily V&F intake (18%) or below-standard cardio-fitness (29%) at baseline achieved the recommended levels.

Conclusions:

A subgroup of patients experienced residual symptom distress and struggled to establish healthy lifestyles. Through symptom management and health promotion, SurC could be a feasible care model that facilitates patients' transition to effective cancer survivorship and should be considered embedded in routine oncology care practices.

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Co-Author(s): Sophia CHAN, Ka Po Amy CHEUNG, Tzu Tsun LUK, Tin Shun Titan MAK, Kelvin WANG, Tsz Yin WONG, Derek YEE TAK CHEUNG, Runqi YUAN, Yi Chun ZHU

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Abstract No.: 200110

Kwai Tsing Signature Project Scheme (SPS) (2014-2023)

First Author: Yick Hay CHOW

Purpose:

SPS in each district must have been responded to the needs of the district or must have been highlighted the characteristics of the district and achieved remarkable and long-term results in the district. In view of the strong demands for community medical services among residents in the Kwai Tsing District, the Kwai Tsing District Council (KTDC) has decided to implement a plan with the theme of “Enhancement of Community Healthcare Service”.

Methods:

The Association proposed to support the needs of the aging community through inter-sectorial collaborations among healthcare professional, community leaders, government, and non-government organizations. With the support of the KTDC and the Home Affairs Bureau and more than ten years of community health service experience in the Kwai Tsing District, and being a significant partner to implement the project, the Association provided high-quality and professional primary medical services and public healthcare services for the Kwai Tsing residents to enhance their health of residents.

Results:

SPS was implemented in five phases, and there were different service components in each phase.,Ocular Health Care Services,Community Health Services,Health Education,Outreaching Service,Influenza Vaccination,Hearing Health Services,Special Educational Needs Services,Dental Health Care Services,Mobile Dental Clinic,Chinese Medicine Clinic

Conclusions:

SPS started from 1 October 2014 to 30 November 2023, the services were very diversified, covering Ocular Health Care Services to elderly, influenza vaccination injection, mobile dental and Chinese Medicine clinic services, served over 300,000 people in the decade and gained considerable positive impacts from the community.

Abstract No.: 200067

MINDFULNESS-BASED POST-OPERATIVE CHRONIC SHOULDER PAIN MANAGEMENT

First Author: Dorothy LOH

Purpose:

The primary goal of this pilot study is to evaluate the efficacy of a mindfulness-based, APP-delivered scheme for the management of post-operative chronic shoulder pain in rotator cuff (RC) tear. The chronicity and recurrence after extensive conventional treatments such as surgery and physiotherapy are main concerns for patients and medical professionals. Non-surgical, inter-disciplinary approaches remain inadequately represented due to the lack of evidence-based, empirical local studies and clinical significance.

Methods:

A two-arm, non-randomized trial is conducted with RC subjects allocated into two cohorts: one with standard physiotherapy; and one mindfulness-based interventions alongside standard physiotherapy. Primary outcomes are measured by two matrixes: Pain Disability Index and Mindfulness Measurement Scales at baseline, inter-treatment at intervals and post-treatment after 12 months.

Results:

Cognitive behavioural-functional therapies, mindfulness-based stress reduction intervention and yoga therapy are more widely recognized in the West. Allied Health service promotion especially in primary care in the Asian culture is far less delivered and accessible. Powered qualitative measures of pain by means of self-reported surveys, verbal probing, e-health monitoring, etc. will prove their significance in solving the prevalent healthcare issue of chronic diseases.,A well-defined, targeted, multidisciplinary chronic pain intervention lends itself to current clinical practices with community-based pain treatments at patients' doorstep.

Conclusions:

Mindfulness and comprehensive yoga therapy is an integral, forward-thinking attempt to treat post-operative chronic shoulder pain from the tertiary to primary sectors. This patient-oriented model proves to tackle chronic diseases at much lower healthcare cost.

Abstract No.: 200066

Resource Broker or Support Crew? Shaping Mothering Responsibility in Early Intervention Programs in Non-urban China

First Author: Dan LIU

Purpose:

This study explores how the organizational management of treatment shapes the caring responsibilities of patients' families.

Methods:

Data were collected through nine months of participant observation in two local hospitals in Southwestern China, along with interviews with 30 families of children undergoing treatment for developmental disabilities in early intervention programs.

Results:

Two types of treatment structures were identified: resource-oriented and education-oriented treatments. In the resource-oriented model, hospitals provide diverse resources, and mothers act as resource brokers, coordinating their lives to secure medical opportunities for their children. This role requires them to develop logistical capabilities and interpersonal skills. In contrast, the education-oriented model focuses on educating parents to enhance their parenting styles and create a scientifically informed child-rearing environment. Here, mothers serve as support crews, negotiating with family members and fostering a training-like atmosphere at home.

Conclusions:

This study enhances our understanding of the social organization of care trajectories by highlighting the crucial role of treatment structure in shaping both medical and family responsibilities.

Abstract No.: 200055

iHealth Screen App: Empowering Primary Care for Older Adults with Complex Health Needs through Self-Help Geriatric Assessment and Education

First Author: Ken CHEUNG
Co-Author(s): Maggie Fung-yee WONG, Jean WOO

Purpose:

The mHealth for Ageing, initiated by the World Health Organization, aims to support older adults in maintaining functional ability and living independently through self-help mobile applications. However, its implementation in primary care for older adults remains limited. The iHealth Screen app, a pioneering initiative in Hong Kong, takes a holistic approach by offering 11 free geriatric assessments, personalized health reports, and education for older adults and caregivers via smartphones or tablets. Since August 2021, it has garnered over 19,000 downloads. This study examines the app's feasibility and effectiveness from users' perspectives.

Methods:

A mixed-method approach, combining quantitative and qualitative methods, was used to gather user feedback. Older adults aged 60 or above and their caregivers were recruited. Total numbers for screening tests from the app's cloud system were also recorded.

Results:

As of August 2024, 39,726 screening tests across 11 geriatric topics were performed using the app. Survey results indicate that users rated the app highly (3.54/5) for usefulness, with over 90% willing to continue and recommend it. Focus group interviews revealed enhanced self-health management awareness among older adults and caregivers. Participants also regarded the app as a comprehensive health information hub for self-education on various age-related health topics.

Conclusions:

iHealth Screen improved health screening efficiency and serves as a cost-effective tool for primary care services to better understand older adults' conditions and allocate resources effectively. Integration into social, healthcare services, and community settings such as residential management companies, can ensure a sustainable impact, facilitating aging in place.