

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH

[LTE 1]**ENERGY DRINK AND POPULATION HEALTH: KNOWLEDGE, CONSUMPTION PATTERN AND ADVERSE EFFECTS AMONG MALAYSIAN POPULATION**

Zoena Jia Xuan Ang, Cui Yee Chong, Veronica Rui Sim Chu, Yi Qi Ku, Ali Blebil, Amutha Selvaraj, Ali Haider Mohammed

School of Pharmacy, Monash University Malaysia, Jalan Lagoon Selatan, Bandar Sunway, 47500 Selangor, Malaysia

The frequent expansion of the energy drinks (EDs) market has caused an extensive increase in the consumption of EDs, especially among younger populations. The lack of knowledge on EDs and their perceived beneficial effects could lead to excessive EDs consumption, which is strongly associated with serious side effects.

This study aimed to assess the knowledge and perceived beneficial effects of EDs consumers, and to determine the consumption patterns and side effects experienced by different EDs consumers among Malaysian population.

A descriptive cross-sectional study was conducted in Malaysia from February to April 2021. A structured and validated questionnaire, consisting of 5 sections with 46 items, was distributed online. 591 participants were recruited but only 515 of them (response rate 87%) agreed to participate. Descriptive and inferential analysis were done using SPSS.

The median age of participants was 23 ± 7.3 years. Majority of participants (65%) were unaware about the active ingredients of EDs and approximately 40% of them had no idea that EDs contain caffeine. The main reason for consuming EDs was to stay awake (43%) and Red Bull was the most preferred brand (57%). Lack of rest (57%), headache (53%), and nervousness (49%) were the most experienced side effects. A significant difference was observed between consumption patterns and knowledge and perceived beneficial effects ($p < 0.05$). Our data also showed a significant association between demographic data of respondents (e.g., coffee intake, smoking status, and alcohol intake) and their consumption pattern.

EDs consumers in Malaysia were found to have limited knowledge on EDs. Attention should be drawn to the Ministry of Health regarding the significant side effects such as palpitation and nervousness experienced by EDs consumers. Hence, awareness ought to be raised by adopting regulations or policies to regulate the sales and warning labels of EDs in Malaysia.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH

[LTE2]**PHYSICAL HEALTH OF PRECLINICAL
MEDICAL STUDENTS DURING COVID-19**

Nur Khairunnisa Nor Azlan, Amalia Izzati Razman, Nur Alia Iman Shaik Mohd Nizam, Muhammad Ashraf Fithri Anuar, Muhammad Haikal Abdullah, Muhammad Ikmal Arif Ahmad Ashhar, Mohammad Muaz Mohamad, Shahida Athirah Shahrir, Muhammad Luqman 'Afif Johari, Ahmad Najmi Abid Zulkifli, Muhammad Razin Zamani, Muhammad Adam Azani, Ahmad Zhareff Emir Ahmad Haridan, Hazulin Mohd Radzuan, Nour El Huda Abd Rahim, Shahida Saharudin, Wan Fatein Nabeila Wan Omar

Department of Basic Medical Sciences, Kulliyah of Medicine, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, 25200 Kuantan, Pahang, Malaysia

Due to the COVID-19 pandemic, several preventive measures have been put in place including movement restriction and closure of non-essential services in Malaysia including educational premises and shifting towards online learning. Physical inactivity may impact medical students' quality of life, particularly their physical and mental health, as both are especially influenced by doing physical activity. This study aimed to assess the physical health of medical students during the pandemic.

This study has been approved by the institutional research committee (Research ID: 735). All Year 1 and Year 2 International Islamic University Malaysia (IIUM) medical students were invited to participate in this cross-sectional study. Participants were asked to complete an online, self-administered abbreviated World Health Organisation Quality of Life (WHOQOL-BREF) questionnaire from July until August 2021. Data were analysed using IBM SPSS Statistics 26 (IBM, New York).

We received 158 responses, consisting of 77 Year 1 and 81 Year 2 students. All participants were undertaking online remote learning at the time of study. The mean score for overall quality of life was 14.58 (3.23) whereas the physical health domain mean score was 14.18 (2.48). We found that the requirement for medical treatment scored the highest 17.70 (3.42) whereas work capacity scored the lowest 12.25 (3.95). There was no significant difference in the scores between 14.50 (2.56) and 13.87 (2.37) for Year 1 and Year 2 students, respectively, in the individual items ($p=0.107-0.862$).

We concluded that despite the nationwide lockdown, the medical students in IIUM reported acceptable-good quality of life and physical health. This could be due to their adaptation to the new norms by applying the right coping strategy. Future study to re-assess their quality of life is due should the lockdown are further extended or tightened.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH**[LTE3]****VITAMIN D DEFICIENCY AMONG CHILDREN ATTENDING AN OBESITY OR DIABETES CLINIC IN A TEACHING HOSPITAL IN KUALA LUMPUR, MALAYSIA**

*Chi Mun Natalie Lo¹, Shew Fung Wong¹, Nurulmazia Rahiman²,
Muhammad Yazid Bin Jalaludin², Yoke Lin Lo³*

¹*School of Medicine, International Medical University, 57000 Kuala Lumpur, Malaysia*

²*Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia*

³*School of Pharmacy, International Medical University, 57000 Kuala Lumpur, Malaysia*

This cross-sectional study aimed to determine the prevalence of vitamin D deficiency, and factors associated with its deficiency among children attending the Paediatric Obesity or the Diabetes Clinic at the University of Malaya Medical Centre (UMMC), Malaysia.

Demographic and clinical data of the participants were obtained from UMMC. The plasma 25-hydroxyvitamin D [25(OH)D₂ and 25(OH)D₃] concentrations of each subject were measured using a validated liquid chromatography-tandem mass spectrometry method. Vitamin D deficiency status was defined according to the Endocrine Society. Univariate and multivariate logistic regression analyses were used to identify factors associated with vitamin D deficiency.

Data from 134 participants (53.0% male) of mixed racial backgrounds were analysed. All 25(OH)D₂ levels were below the lower limit of quantification of 4.2 ng/mL. The mean 25(OH)D₃ level of the obese [mainly with type 2 diabetes mellitus (T2DM) or metabolic syndrome] was similar to that of the lean children [mainly with type 1 diabetes mellitus (T1DM)] (20.2±8.7 ng/mL vs. 20.6±9.9 ng/mL, p=0.800). The percentage of vitamin D deficiency (25(OH)D₃ levels <20 ng/mL) was also similar between the two groups at 53.3% and 56.8%, respectively. A higher percentage of those obese seemed to have vitamin D insufficiency (25(OH)D₃ levels of 20-29 ng/mL) than the lean (36.7% vs. 20.5%, respectively). Chinese race (OR=0.358, 95%CI=0.136-0.940; p=0.037), fasting insulin levels (OR=1.023, 95%CI=1.003-1.043; p=0.026) and white blood cell count (OR=1.177, 95%CI=1.011-1.371; p=0.035) were each significantly associated with vitamin D deficiency. None of these factors were significant in the multivariate logistic regression analyses.

Vitamin D deficiency is common in children with inflammatory conditions such as T1DM, T2DM, or metabolic syndrome regardless of their obesity status. There is no significant difference in the vitamin D deficiency status between the obese and the lean. Inflammatory conditions may be the common main factor associated with vitamin D deficiency in the study subjects.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH

[LTE4]**PREVALENCE OF DENTAL CARIES IN CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD) AND ITS RELATION WITH SOCIODEMOGRAPHIC VARIABILITIES OF PARENT: A CROSS SECTIONAL STUDY*****Rajatish Bandyopadhyay¹, Shabnam Zahir²****¹Guru Nanak Institute of Dental Sciences and Research, 157/F Nilgunj Road, Sahid Colony, Panihati, Kolkata, West Bengal, India 700114**²Professor and Head of Department, Department of Pedodontics and Preventive Dentistry, Guru Nanak Institute of Dental Sciences and Research, 157/F Nilgunj Road, Sahid Colony, Panihati, Kolkata, West Bengal, India 700114*

Autism is a neurodevelopmental disease characterised by impaired communication and social interaction, leading to difficulty in learning oral hygiene practices. Parents have an important role in oral health related practices of children and especially those with autism. This study aimed to determine the prevalence of dental caries in children with ASD and its relation with sociodemographic variability of parents through a cross sectional study in a special school.

The present cross-sectional, observational study included 152 (131 males and 21 females) children with autism (age- 6-16 years) attending Autism Society of West Bengal, a special needs school in Kolkata, West Bengal in three consecutive years (2017 to 2019). Clinical examination determined dental caries prevalence utilising deft/DMFT {Decay, Missed/ Exfoliated, Filled Tooth} index. The sociodemographic variability (age, education, economy) of the parents were determined through self-administered questionnaires. The parents were educated about oral health maintenance in their wards through lectures, audio-visual presentations and short plays. Data obtained were statistically analysed using STATA software. Kruskal-Wallis test and Chi Square test were used for statistical analysis.

Male to female ratio was found to be 6:1. Marked difference was seen in the def/DMFT scores of the samples across the 3 time periods. The mean score increased over time. Females with ASD showed a higher mean caries prevalence than males with ASD. Also, the dental caries prevalence varied with the mean age, educational qualifications and economic factors regarding the parents.

Females with ASD showed a higher caries susceptibility compared to males with autism. The dental caries prevalence also varied with the sociodemographic conditions of the parents. Prevalence of dental caries increased with increase in time.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH

[LTE5]**THE FOOD SAFETY KNOWLEDGE, ATTITUDE, PRACTICE AMONG FOOD HANDLERS IN THE INTERNATIONAL MEDICAL UNIVERSITY DURING THE COVID-19 PANDEMIC***Joyce Ke Yin Pan, Ai Kah Ng**Dietetics with Nutrition, International Medical University, Jalan Jalil Perkasa 19, 57000 Kuala Lumpur, Malaysia*

Foodborne illnesses affect at least around 14,000 people within Malaysia each year. Food handlers are shown to be the most common sources of food contamination, and the importance of safe food handling is increasing in importance as frequency of eating out among Malaysians increases. Hence, the importance of hand hygiene and regular sanitisation are warranted especially during this COVID-19 pandemic. This study aimed to assess the food safety knowledge, attitude and practice (KAP) among food handlers in the International Medical University (IMU) during the COVID-19 pandemic.

The study was a cross-sectional study which involved 34 food handlers in the IMU. A structured questionnaire adapted from Akabanda *et al.* was used to collect the information on food safety KAP of food handlers via a face-to-face interview session. The respondents' sociodemographic characteristics were reported as percentage and knowledge attitude and practice were reported as median and interquartile range. Inferential statistics were used to determine the association between variables, such as Fisher's exact test to assess the relationship between food safety KAP and training background, Kruskal-Wallis test for food safety KAP and educational level, Spearman's rho test for food safety KAP and working experience as well as the correlation between food safety knowledge, attitude and practices.

The study found that the food handlers in the IMU showed good attitude towards food safety with an average median of 16.8 (14.8 - 18.8), and good self-reported food safety practices (median score = 72.7 (54.2 - 90.0)), but poor food safety knowledge (median score = 16.5 (11.5 - 21.5)) and poor practice. There was a significant correlation between food safety knowledge and education level ($p = 0.036$).

Food handlers in the IMU were considered to have inadequate food safety knowledge but good attitude and self-reported practice. The only variables found to have significant correlations are food safety knowledge and the food handlers' educational background. Hence, specific and frequent training courses should be planned for them in order to improve and sustain safe food handling practices in the IMU.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH

[LTE6]**MALAYSIAN PARENTAL ATTITUDES TOWARDS USE OF
MEDICINES IN CHILDREN*****Nurulain Nadiah Abdul Hadi, Chandini Menon Premakumar, Noraida Mohamed Shah****Centre of Quality Management of Medicines, Faculty of Pharmacy, Universiti Kebangsaan Malaysia,
50300 Kuala Lumpur, Malaysia*

Parental attitudes not only influence the way parents medicate their children but also affect medication adherence and medicine taking behaviour of the children as they grow up. Negative parental attitudes might lead to inappropriate use of medicines or the avoidance to use medicines in their children. This study aimed to describe the parental attitudes towards medicines used in children and the sociodemographic factors that might influence their attitudes. A cross-sectional study using convenience sampling was conducted among Malaysian parents with children aged 12 years and below from November 2020 to January 2021 through online platforms. A total of 230 respondents were included in this study. Majority of the respondents were 40-49 years old (43.0%) and were Malays (91.3%). Antipyretics were reported as the most commonly used medicines by parents followed by cough and cold medicines, antibiotics and analgesics. The overall mean \pm SD of parental attitudes towards the use of medicines in children was 69.90 ± 12.12 from a total score of 105, which reflected neutral attitudes. This study showed that mothers and younger parents have significantly more positive attitude than fathers and older parents, respectively ($p < 0.05$). Overall, this study provides insights into types of medicines commonly used in children and parental attitudes towards medicines used in children in Malaysia.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH**[LTE7]****DISINFECTION PROTOCOLS OF IRREVERSIBLE HYDROCOLLOID:
EFFECT ON CANDIDA COUNT AND DIMENSIONAL ACCURACY**

**Nur Dini Ahmad Zawawi¹, Nur Farah Athirah Muhammad¹, Siti Hajjar Nasir²,
Mohd Hafiz Arzmi³, Norfaezah Ahmad⁴**

¹Students, Kulliyah of Dentistry, International Islamic University Malaysia (IIUM),
Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia

²Lecturer, Department of Orthodontics, Kulliyah of Dentistry, International Islamic University Malaysia,
Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia

³Lecturer, Department of Fundamental Dental and Medical Science, Kulliyah of Dentistry, International Islamic University Malaysia,
Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia

⁴Lecturer, Department of Prosthodontics, Kulliyah of Dentistry, International Islamic University Malaysia,
Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia

Disinfection of impression is compulsory to prevent cross-infection to dental personnel. However, prolonged immersion in disinfectants may affect the dimensional accuracy of irreversible hydrocolloid. Different types of disinfectants are available nowadays, including alcohol-based, glutaraldehyde, and chlorine derivatives. This study aimed to investigate the effect of disinfection protocols on the *Candida* count and dimensional accuracy of irreversible hydrocolloid.

For the antifungal activity part, 60 alginate beads were made and treated with different disinfection protocols (2% Aseptoprint, 1% sodium hypochlorite, 3% MD 520 for two minutes, one hour, six hours or 24 hours) except for the control group. The beads were contaminated with *Candida albicans* (ATCC MYA 4901). Colony-forming units (CFUs) were counted using a haemocytometer and analysed using two-way ANOVA. For dimensional accuracy assessment, alginate impressions were taken from a master cast and treated with the same disinfection protocols. Three linear measurements of the casts from impressions immersed in different disinfection protocols were compared to the master cast. Statistical analysis was determined using Friedman Test.

There was a significant difference in the reduction of *Candida* counts after disinfection with 3% MD 520 and 2% Aseptoprint ($P < 0.05$). The dimensional changes of alginates treated for 6 and 24 hours were statistically significant. 3% MD 520 and 2% Aseptoprint had effective antifungal activity on irreversible hydrocolloids impression. Dimensional changes of alginate were due to imbibition and syneresis, affecting the casts constructed. Longer immersion time yielded less fungal count but resulted in increased dimensional changes.

3% MD 520 and 2% Aseptoprint are recommended for irreversible hydrocolloid disinfection, with immersion time not exceeding one hour.

LIGHTNING TALKS • ENVIRONMENTAL, NUTRITION AND POPULATION HEALTH**[LTE9]****DEFINING OBESITY BY BODY FAT PERCENTAGE WITH NEW BODY MASS INDEX CUT-OFF POINT AMONG MALAYSIAN POPULATION: A RETROSPECTIVE STUDY***Chee Mun Chan¹, Azimatun Noor Aizuddin², Kok-Yong Chin³**¹Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia**²Department of Community Health, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia**³Department of Pharmacology, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia*

Obesity is a strong confounder to cardiovascular diseases (CVD). Although it is globally defined by body mass index (BMI), recent studies demonstrated that the current BMI cut-off value showed inaccuracy in identifying individuals with excess body fat (BF), posing a risk for CVD. This study aimed to evaluate the diagnostic performance of BMI in obesity based on BF percentage (BF%).

This study recruited 136 participants who attended an annual health screening programme. The subjects underwent health examinations, comprised of BMI, BF% and blood pressure measurement. The optimal cut-off value of BMI in classifying obesity defined by BF% (>25%) was determined by a receiver operating curve (ROC) analysis.

From the ROC analysis, an optimal BMI cut-off value of 24.8 kg/m² in classifying obese subjects based on BF% was derived. The agreement between the new BMI cut-off (>24.8 kg/m²) and BF% was higher ($\kappa=0.722$) than the standard BMI cut-off (>27.5 kg/m²) ($\kappa=0.532$). Our proposed BMI of 24.8 kg/m² also showed higher sensitivity (80.0%) than 27.5kg/m² (56.0 %) in identifying subjects with high adiposity. We also reported higher sensitivity in detecting subjects with hypertension using BMI 24.8 kg/m² (63.9%) compared to the standard cut-off (36.1%).

The current BMI value used to define obesity has to be reassessed by taking BF% into account. The proposed BMI cut-off, 24.8 kg/m² for obesity shows better performance in identifying higher percentage of Malaysians at risk of CVD.