

Prevalence of Obesity and Health-Promoting Lifestyle Profile among Malaysian and Indonesian Nurses

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ABSTRACT

Background: Harmful lifestyle behaviours trigger physiological changes that multiply the risk of non-communicable diseases in the population. **Methods:** A descriptive cross-sectional survey was used to compare the prevalence of obesity and Health-Promoting Lifestyle Profiles (HPLP) among Malaysian and Indonesian Nurses. A total of 417 and 406 nurses from Malaysia and Indonesia participated in the study, respectively. Purposive sampling was used to select facilities, while convenience sampling was used for respondents' selection. Data was collected using an online Google form and analysis was done using SPSS version 25.0. **Results:** The result of the study shows a significant association between age ($p = 0.001$ vs. 0.001) and marital status ($p = 0.001$ vs. 0.03) with BMI for Malaysia and Indonesia, respectively. A high prevalence rate of obesity was observed in Malaysia (55.9%) and Indonesia (47%). The total HPLP II score of the respondents were Malaysia (142.46 ± 22.70) and Indonesia (129.77 ± 17.89). Spiritual growth and interpersonal relationships had the highest subscale scores for both countries. Physical activity was lowest at 19.45 ± 4.54 vs 18.04 ± 4.27 for Malaysia and Indonesia, respectively. Lastly, a statistically weak relationship was found when BMI was correlated with health responsibility ($r = 0.129$, $p = 0.009$) for Malaysia. Similarly, weak correlations were observed in Indonesia between BMI and physical activity ($r = 0.106$, $p = 0.033$) and between BMI and interpersonal relationships ($r = 0.120$, $p = 0.015$). **Conclusion:** The prevalence of obesity was high, while physical activity was lowest for both countries.

Keywords: Health; Indonesia; Lifestyle(s); Malaysia; Nurse(s); Obesity

INTRODUCTION

Non-communicable diseases (NCDs), also referred to as lifestyle-related diseases (LRDs), are increasingly seen as a major contributory factor to morbidity and mortality in both developed and developing countries. According to the World Health Organisation (WHO) report, LRDs account for an estimated 74% (41 million) of annual mortality due to all causes (WHO, 2023a). Of the 41 million deaths, evidence reports that 77% are from low and middle-income countries, majorly attributed to cardiovascular diseases and cancer that contribute about 18 and 9.3 million deaths, respectively. Other leading causes are chronic respiratory illnesses and diabetes, with a mortality of about 4.1 and 2.0 million, respectively (WHO, 2023b). These have significantly translated into the high cost of healthcare as the Centre for Disease Control and Prevention (CDC) reported an estimated \$500 billion in losses yearly, calling for increased investments in preventive measures (CDC Global Health, 2024).

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In the South-East Asia countries, evidence reported that cardiovascular diseases, cancers, and diabetes are the major NCDs causing mortality (WHO, 2022). The mortality results from four main behavioral factors reported to fuel NCDs. They are unhealthy diet, tobacco use, inadequate physical activity, and consumption of alcohol. For example, inadequate physical activity is reported to be propelled by urbanisation and globalization in the South-East Asia Region that promote sedentary lifestyles, leading to obesity (WHO 2022). Accordingly, the WHO reported that about nine million deaths in this region occur because of NCDs (WHO, 2023a).

Malaysia is among the countries in the Asian Pacific region that is experiencing rapid urbanisation and industrialisation. As a result, Malaysians are significantly altering their food habits and lifestyle. Ultra-Processed Food Consumption and modern fusion foods have changed the Malaysian diet from plant-based food with low calories to a diet high in calories, fats, and sugar (Ganesrau *et al.*, 2023). Consequently, evidence shows that there are more Malaysians who fall within the brackets of overweight (50.1%) (Chong *et al.*, 2023). With respect to government workers, the evidence further reveals that about 29% of government workers in Malaysia obese, which was associated with years of service (Dadar *et al.*, 2022).

In Indonesia, LRDs are increasingly becoming a public health concern as they are responsible for about 10% of non-communicable diseases (Arifin *et al.*, 2022). Studies conducted by Widyahening *et al.* (2022), 66.7% were overweight or obese and 77.8% among the employee in Indonesia. This implies that if nothing is done, Indonesia will have an unhealthy working population. The proportion of overweight and obesity (33.5%) are also prevalent among medical students (Diani *et al.*, 2023). The increase in the prevalence of NCDs in Indonesia is particularly concerning as evidence indicates that risk factors such as overweight or obesity. Based on evidence, the increase in the prevalence of NCDs is mainly associated with Indonesia's rapid technological development, which causes a shift in feeding and other lifestyle-related behaviours. Fortunately, LRDs are the most preventable cause of death. This is because LRDs can be prevented by lifestyle modification, such as changing dietary habits, increasing physical activity, and reducing cigarette smoking (Wang *et al.*, 2022). Additionally, Zambrano *et al.* (2023) revealed that Nutrition, Physical Activity, Spiritual Growth, Interpersonal Relationships, Health Responsibility, and Stress Management are part of health-promoting lifestyle behaviours that influence disease prevention.

Therefore, a health-promoting lifestyle is an essential determinant of health status and is recognised as a significant factor for maintaining and improving health. Understanding this becomes even more important among nurses because of their public image as role models to community members and their responsibility to educate community members on healthy lifestyle behaviours. Additionally, there are studies that examine the prevalence and health-promoting lifestyle profiles in Malaysia (Sharoni *et al.*, 2023) and Indonesia (Budury *et al.*, 2024; Ifroh, Imamah & Rizal, 2022), however, to the researchers' knowledge, there is no known study that compares the prevalence of obesity and HPLP among Malaysian and Indonesian nurses.

Objective

This study, therefore, was conducted to achieve the following objectives:

- To determine and compare the association between socio-demographic variables and Body Mass Index (BMI) among nurses in some selected health facilities in Malaysia and Indonesia
- To determine and compare the prevalence of obesity among nurses in some selected health facilities in Malaysia and Indonesia
- To determine and compare the level of health-promoting lifestyle among nurses in some selected health facilities in Malaysia and Indonesia
- To determine and compare the relationship between health-promoting lifestyle and BMI among nurses in some selected health facilities in Malaysia and Indonesia

METHODOLOGY

This descriptive cross-sectional study was conducted in two purposely selected facilities in Malaysia

and Indonesia. A tertiary hospital located in Klang Valley namely Pusat Perubatan Universiti Malaya, Malaysia, and “Rumah Sakit” (hospital) Jemursari in Surabaya, Indonesia, were chosen because of their reputation as medical centers of excellence, with staff and facility serving as a model for other healthcare workers and medical facilities. A total of 2847 nurses from both Malaysia (2339) and Indonesia (508) were the target population for this study.

The sample size for Malaysia and Indonesia was calculated using the sample size and power calculations (McCrum-Gardner, 2010). Twenty percent was added to the sample size to cover missed or unreturned questionnaires. Therefore, this study included 417 nurses from Malaysia and 406 from Indonesia. For the inclusion criteria, participants for this study were registered nurses with more than six months of working experience who understood English and/ or Bahasa Melayu or Bahasa Indonesia. Those nurses who were on annual leave or sick leave during the data collection period were excluded from the study. Data was collected by using non-probability, convenience sampling where the respondents are selected for inclusion in the sample due to accessibility.

The tools for data collection were the English Version- Health-Promoting Lifestyle Profile II (Walker, Sechrist & Pender, 1987) and the Malay Version- Profil Galakan-Gaya Hidup Sihat II (Kuan *et al.*, 2019). The alpha coefficient of internal consistency for the total scale was 0.943 and for the subscales ranged from 0.793 to 0.872 (Walker, Sechrist & Pender, 1987). While for the Bahasa Melayu version, the construct reliabilities for the HPLP-II-M subscales were acceptable, ranging from 0.737 to 0.878 (Kuan *et al.*, 2019). In the study the result shows that all the subscales are acceptable according to Cronbach's α , ranging from 0.76 to 0.77.

Data were collected from July 2022 to August 2022 through an online Google form link sent to staff through their emails. Collected data were analysed using Statistical Package for Social Sciences (SPSS) version 25.0. The calculation and the cut off points of the BMI based on the World Health Organisation for Asian and South Asian population; underweight (≤ 18.5), normal (18.5-22.9), overweight (23-24.9) and obese (≥ 25) (Weir & Jan, 2023). The HPLP scores are calculated as the mean score of all the items on the questionnaire. The higher the mean score, the better the outcome for the subscale and the overall scale (Walker, Sechrist & Pender, 1987; Kuan *et al.*, 2019). Descriptive (frequency (n) and percentage (%) and mean and standard deviation) and inferential statistics (Chi-square and Pearson Correlation Coefficient) were used to answer the study objectives.

Ethical Consideration

The researchers obtained ethical clearance from the Research Ethics Committee (REC) of Universiti Teknologi MARA, Malaysia, with reference numbers FERC/FSK/MR/2022/0139 on 8th July 2022, and Research Ethics Committee (REC) of University of Malaya Medical Centre, Malaysia with reference number PPUM/RDI/400/09/001/60 on 31st March 2022. Additionally, the author also received approval from Ethical Board of the hospital, Rumah Sakit Jemursari, Surabaya, Indonesia, with reference number 125/KEPK-RSISJS/XI/2022 on 8th November 2022.

RESULTS

Table 1 shows that the mean age of Malaysian respondents was 33.22 (± 8.04) compared to 34.2 (± 7.400) for Indonesian respondents. There were more females, 92.3% and 76.8%, in Malaysia and Indonesia respectively. Other demography included for Malaysia and Indonesia are marital status (70.7% vs 84.5%), the educational level (95.2% vs 52.5%) and work on a shift basis (79.6% vs 78.3%). Additionally, a greater proportion have a work experience of six to 10 years (27.6% vs. 33.5%), most were not aware of the presence of chronic disease (90.9% vs. 100%), and only a few smoke (0.7% vs. 8.4%) for Malaysia and Indonesia respectively. Lastly, only 1% of the respondents in Malaysia reported the use of alcohol, and none was reported in Indonesia.

Table 1: The Socio-Demographic Characteristics of Respondents

Variable		Malaysian (N=417)		Indonesian (N= 406)	
		<i>n</i>	%	<i>n</i>	%
Age	In years (mean±SD)	33.22	8.04	34.2	7.40
Gender	Male	32	7.7	94	23.2
	Female	385	92.3	312	76.8
Marital Status	Single	122	29.3	63	15.5
	Married	295	70.7	343	84.5
Educational Level	Certificate	3	0.7	8	2.0
	Diploma	397	95.2	213	52.5
	Bachelor	17	4.1	185	45.6
Working Hours	Shift	332	79.6	318	78.3
	Office Hour	85	20.4	88	21.7
Working Experiences	In years (mean±SD)	11.19	7.46	11.27	8.34
	1 – 5 years	110	26.4	106	26.1
	6 -10 years	115	27.6	136	33.5
	11 – 15 years	84	20.1	73	18.0
	16 – 20 years	51	12.2	49	12.1
	>20 years	57	13.7	42	10.3
Chronic Diseases	Unknown	379	90.9	406	100.0
	Known with a chronic disease	38	9.1	00	0.00
Smoking	No	414	99.3	372	91.6
	Yes	3	0.7	34	8.4
Alcohol Use	No	413	99.0	406	100.0
	Yes	4	1.0	0	0.00

Note: SD (standard deviation)

Table 2 shows there was a statistically significant association between BMI and age χ^2 ($df=9$, $N=417$) = 31.196, $p=0.001$) and marital status χ^2 ($df=3$, $N=417$) = 33.383, $p=0.001$) at 0.05 level of significance. On the other hand, there was no statistically significant association between gender χ^2 ($df=3$, $N=417$) = 3.409, $p=0.333$) and level of education χ^2 ($df=6$, $N=417$) = 4.232, $p=0.645$) at 0.05 level of significance.

Table 2: The Association between Socio-Demographic Characteristics and BMI Category among Malaysian Nurses

Variable	BMI Category				Result			
Age	Underweight	Normal	Overweight	Obese	Total	X^2	df	p -value
21-30	19	88	50	31	188	31.196 ^a	9	0.001*
31-40	3	53	60	41	157			
40-50	1	13	23	16	53			
51-100	0	7	8	4	19			
Total	23	161	141	92	417			
Gender								
Male	0	16	9	7	32	3.409 ^a	3	0.333
Female	23	145	132	85	385			
Total	23	171	141	92	417			
Marital Status								
Single	18	52	34	18	122	33.383 ^a	3	0.001*
Married	5	109	107	74	295			
Total	23	171	141	92	417			
Educational Level								
Certificate	0	2	1	0	3	4.232 ^a	6	0.645
Diploma	22	152	137	86	397			
Degree	1	7	3	6	17			
Total	23	171	141	92	417			

Note: $p < 0.05$ statistically significant, ^a = calculated Chi square * statistically significant result

Table 3 shows the association between socio-demographic characteristics of respondents and BMI. Data shows that there was a statistically significant association between age and BMI χ^2 ($df=9, N=406$) = 27.191, $p=0.001$) and Marital status χ^2 ($df=3, N=406$) = 8.831, $p=0.032$) at 0.05 level of significance. However, there were no statistically significant association between gender χ^2 ($df=3, N=406$) = 3.443, $p=0.328$) and level of education χ^2 ($df=6, N=406$) = 5.811, $p=0.445$) at 0.05 level of significance.

Table 3: The Association between Socio-Demographic Characteristics and BMI Category among Indonesian Nurses

Variable	BMI Category				Result			
Age	Underweight	Normal	Overweight	Obese	Total	X^2	df	p -value
21-30	12	50	27	50	139			
31-40	4	42	46	93	185	27.191 ^a	9	0.001*
40-50	1	16	15	39	71			
51-100	0	1	1	9	11			
Total	17	109	89	191	406			
Gender								
Male	3	19	24	48	94			
Female	14	90	65	143	312	3.443 ^a	3	0.328
Total	17	109	89	191	406			
Marital Status								
Single	4	25	8	26	63	8.831 ^a	3	0.032*
Married	13	84	81	165	343			
Total	17	109	89	191	406			
Level Education								
Certificate	8	64	44	97	213			
Diploma	9	45	43	88	185	5.811 ^a	6	0.445
Degree	0	0	2	6	8			
Total	17	109	89	191	406			

Note: $p < 0.05$ statistically significant, a = calculated Chi square, * statistically significant result

Results presented in Table 4 show the spread of BMI among Nurses in Malaysia and Indonesia. Data shows a prevalence of more obese nurses in Malaysia (55.9%) than in Indonesia (47%), but there are more overweight nurses in Indonesia (21.9%) than in Malaysia (16.1%). Additionally, data on the BMI also shows that 22.5% and 26.8% of nurses in Malaysia and Indonesia, respectively, fall within the normal range and are therefore categorised as of normal weight. Lastly, only a few proportions (5.5% for Malaysia and 4.2% for Indonesia) of the population studied in both countries were classified as underweight.

Table 4: The Prevalence of Obesity among Malaysian and Indonesian Nurses

Variables	Malaysia (N= 417)				Indonesia (N= 406)			
	Underweight	Normal	Overweight	Obesity	Underweight	Normal	Overweight	Obesity
Frequency	23	94	67	233	17	109	89	191
Percentage (%)	5.5	22.5	16.1	55.9	4.2	26.8	21.9	47.0

Note: Underweight: $\leq 18.5 \text{ Kg/M}^2$; Normal: $18.5-22.9 \text{ Kg/M}^2$; Overweight: $23-24.9 \text{ Kg/M}^2$; Obesity: $\geq 25 \text{ Kg/M}^2$

Overall, data in Table 5 shows a higher mean total HPLP II for Malaysian Nurses of 142.46 ± 22.70 compared to the total means score of 129.77 ± 17.89 for Indonesian nurses. Results of each of the subscales reveal the mean score as spiritual growth 27.84 ± 4.55 vs. 25.39 ± 3.76 , physical activity 19.45 ± 4.54 vs. 18.04 ± 4.27 , health responsibility 22.59 ± 5.32 vs. 20.34 ± 3.93 , stress management 22.43 ± 3.89 vs. 23.34 ± 4.29 , nutritional component 19.57 ± 3.42 vs. 20.98 ± 3.57 and interpersonal relationship 26.82 ± 4.16 vs. 23.90 ± 3.60 for Malaysian and Indonesian nurses respectively.

Table 5: Comparison of HPLP II between Malaysian and Indonesian Nurses

Variables	Malaysian Nurses (N= 417)	Indonesian Nurses (N= 406)
	Mean $\pm$ SD	Mean $\pm$ SD
Spiritual Growth	27.84 $\pm$ 4.55	25.39 $\pm$ 3.76
Physical Activity	19.45 $\pm$ 4.54	18.04 $\pm$ 4.27
Health Responsibility	22.59 $\pm$ 5.32	20.34 $\pm$ 3.93
Stress Management	22.43 $\pm$ 3.89	19.57 $\pm$ 3.42
Nutritional	23.34 $\pm$ 4.29	20.98 $\pm$ 3.57
Interpersonal Relationship	26.82 $\pm$ 4.16	23.90 $\pm$ 3.60
Total HPLP	142.46 $\pm$ 22.70	129.77 $\pm$ 17.89

Table 6 presents the relationship between BMI and HPLP among nurses in Malaysia and Indonesia. The analysis of the two variables reveals an overall positive weak association that is not statistically significant between the HPLP II and BMI for both Malaysia ($r = 0.066$; p -value 0.176) and Indonesian nurses ($r = 0.081$; p -value = 0.103). Although the overall p -value shows that the result is not statistically significant, the health responsibility subscale for Malaysia shows a weak positive association that is statistically significant ($r = 0.129$; p -value 0.009) because the p -value is less than 0.05. On the other hand, a weak positive association that is statistically significant was observed for the physical activity subscale ($r = 0.106$; p -value 0.033) and interpersonal relationship ($r = 0.120$; p -value 0.015) for Indonesian nurses. Other subscales that were weak and statistically not significant were spiritual growth $r = 0.058$; p -value 0.239 and $r = 0.039$; p -value 0.436 for Malaysia and Indonesia, respectively; stress management $r = 0.018$; p -value 0.713 for Malaysia and $r = 0.081$; p -value = 0.103 for Indonesia. Similar findings were found for the nutritional subscale with a Pearson correlation of $r = 0.084$ and p -value = 0.087 for Malaysia and a Pearson correlation of $r = 0.032$ with p -value = 0.522 for the same subscale for Indonesia. Lastly, a statistically insignificant finding with a weak negative direction $r = -0.026$; $p = 0.595$ was observed in the physical activity subscale for Malaysian nurses.

Table 6: The Correlation between HPLP II and BMI among Malaysian and Indonesian Nurses

Variables	Malaysian Nurse (N= 417)		Indonesian Nurses (N= 406)	
	Pearson's r	p -value	Pearson's r	p -value
Spiritual Growth	0.058	0.239	0.039	0.436
Physical Activity	-0.026	0.595	0.106*	0.033
Health Responsibility	0.129*	0.009	0.053	0.285
Stress Management	0.018	0.713	0.081	0.103
Nutritional	0.084	0.087	0.032	0.522
Interpersonal Relationship	0.060	0.219	0.120*	0.015
Total HPLP	0.066	0.176	0.081	0.103

Note: *Correlation is significant at the 0.05 level (2-tailed)

DISCUSSION

A total of 823 nurses from Malaysia and Indonesia took part in this study and on average they were 33 years. Most participants were female, and this is unsurprising as nursing is often considered a female-dominated profession from time immemorial (Teresa-Morales *et al.*, 2022). Additionally, most participants were married, with the majority attaining a minimum degree certificate or more. With regards to smoking and alcohol use, the result reveals that most of the respondents neither smoke nor consume alcohol. This is partly contrary to evidence that reported a high smoking rate but a very low rate of alcohol consumption in both countries (Hanafi *et al.*, 2021).

When the association between four socio-demographic variables was assessed with BMI, the chi-square value revealed a statistical association between BMI and age and marital status for both countries. The proportion of overweight and obesity among Malaysian and Indonesian nurses were highest among those

between 31-40 years of age. According to Cao *et al.* (2023), there is a corresponding increase in weight with age; this assertion remains valid, especially during the period of early and middle adulthood. Therefore, it is significant to observe that most respondents from both settings fall in the early and middle adulthood category. Consequently, the above studies have opined that there is a need to imbibe a culture of healthy living, such as weight reduction, to prevent unfavourable health outcomes later in life. Additionally, a statistical association was found between marital status and BMI, where the prevalence of overweight and obesity were high among married nurses from both countries. According to Sato's study (2021), an increase in BMI was observed among married women under 40 years old compared to unmarried women or men of the same age. This could be because these women are within the childbearing age and the influence of hormones during pregnancy. Additionally, the busy work and family schedule of participants could have resulted in limited time for weight control activities. Conversely, it was observed that there was no association between gender and level of education of the participants with BMI.

With regards to the prevalence of obesity, the result reveals a high prevalence rate of obesity among Malaysians by 8.9% compared to Indonesian nurses. Additionally, the prevalence of obesity among Malaysian nurses was higher compared to the general population, which has a prevalence rate of 55.9% (Sharoni *et al.*, 2023). This shows the difference in prevalence rate between the general population and Malaysian nurses is 8.9%. On the other hand, evidence reports that the prevalence rate of obesity in Indonesia's general population is 35.5% (UNICEF, 2022) compared to the 47% prevalence rate found in this study. This shows a difference in the prevalence rate of 12.2%. The preceding indicates that the prevalence of obesity among nurses, compared with the general population, is higher for Indonesian nurses. This finding is in line with the finding in the UNICEF (2022) report that opined that obesity in Indonesia is rapidly increasing and is now a public health concern. Several factors could be associated with this, although, as earlier reported, there is a relationship between age, marital status, and BMI; this has, however, not clearly explained the disparity of the prevalence rate between Malaysian nurses and the general population. It could, therefore, be inferred that busy work and family schedules could have accounted for the difference. This was also reported by Sharoni *et al.* (2023) that because of busy schedules, nurses may find it challenging to create time to exercise and maintain a healthy body weight.

In relation to health-promoting lifestyle behaviour among nurses, total HPLP II was found to be higher for Malaysian nurses compared to Indonesian nurses. This implies that Malaysian nurses have more positive health-promoting lifestyle practices than Indonesian nurses. These findings were similar with current studies conducted in Iran (Rafat *et al.*, 2025) and in Albania (Kapaj *et al.*, 2025). Interestingly, in terms of the subscale scores, the highest scores were recorded in spiritual growth and interpersonal relationships for nurses in both countries. The high score in the spiritual growth component implies the development of inner resources, which is realized through transcending that keeps one in contact with his most balanced self that helps people maximise their wellness potential. Similarly, the interpersonal relationship component with the second highest score implies that nurses could engage in a more meaningful relationship for overall positive health behaviour. These findings are consistent with the study of Tapare *et al.* (2023), which found a higher total HPLP II score and all subscales except for interpersonal relationships. On the other hand, the physical activity subscale had the lowest mean score for both countries, the lowest among Indonesian nurses compared to Malaysian nurses. This shows that nurses of both countries engaged less in physical activities. These findings inconsistent with Sklempe *et al.*'s study (2022), found that nurses and reported high levels of physical activity.

The relationship between HPLP II and BMI reveals a weak positive statistically significant finding in the health responsibility subscale and a weak negative relationship between BMI and physical activity for Malaysian nurses. The statistically positive relationship between health responsibility and BMI clearly shows that nurses in Malaysia understand the need for positive health behaviours. This is further revealed in the physical activity subscale, which shows an inverse relationship with BMI, though not statistically significant. On the other hand, a statistically weak positive relationship exists between physical activity and interpersonal relationships among nurses in Indonesia. This finding raises the question of whether the nurses are engaged in the recommended physical activity regimen or if they have the theoretical knowledge but find it challenging to translate the same into practice. Another reason suggested by evidence is that nurses lack time and are too tired to be engaged in physical activities because of work and family responsibilities (Hoveidamanesh *et al.*, 2022).

Therefore, this calls for hospital managers to create a favourable work environment and policy promoting physical activity among nurses. Additionally, nurses' work requires a higher interpersonal relationship with patients and clients, which could explain the positive relationship in the interpersonal subscale. The low level of physical activity among Indonesian nurses found in this study is quite consistent with the findings of Allari and Manal (2022), who found a lower level of physical activity among nursing students in Jordan. Furthermore, recent studies found that other factors such as self-efficacy (Shamsuddin *et al.*, 2025), organisational support, and transformational leadership (Luh *et al.*, 2025) would be able to enhance healthy lifestyle among employees. Therefore, by cultivating a high self-confidence and promoting a healthy working environment in workplace, people can adopt good health behaviour.

Limitation

The study concern inherent susceptibility of cross-sectional designs to bias, as they capture data at a single point in time and do not establish causality. Additionally, the reliance on self-administered questionnaires as a data collection method may introduce several challenges. Participants may provide inaccurate or misleading responses due to social desirability bias, fear of criticism, or concerns about confidentiality. There is also a risk of data falsification, where respondents may intentionally or unintentionally provide incorrect information. Furthermore, some participants may disregard certain questions or answer carelessly just to complete the survey quickly, potentially impacting the reliability and validity of the findings.

CONCLUSION

This study reveals a high prevalence of obesity among nurses in Malaysia and Indonesia. Obesity was reported to be higher among Malaysians compared to Indonesian nurses. Similarly, BMI was statistically associated with the age and marital status of the respondents from both countries. The total HPLP II score was higher among Malaysian nurses than Indonesian nurses. A statistically significant finding for health responsibility and BMI among Malaysian nurses, while physical activity and interpersonal relationships were observed for Indonesian nurses. The researchers, therefore, recommend that the work environment be designed to promote healthy lifestyle activities, enabling nurses to access healthy diets while at work and engage in recreational activities that encourage physical activities. It can be recommended an experimental study need to be conducted in future, to evaluate the effectiveness of the healthy lifestyle intervention program. Alternatively, qualitative studies perhaps can contribute further understanding of the diet patterns and physical activities that influence nurses towards health lifestyle.

Conflict of Interest

The authors declare that they have no competing interests.

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