

Research Article



A Cross-Sectional Study on Eating Habits and Health Attitudes among the Medical and Pharmacy Students of UNIKL-RCMP, Malaysia

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Accepted on: 20-03-2015; Finalized on: 30-04-2015.

ABSTRACT

Non-communicable diseases are increasing worldwide and pose a major concern to the public health which is strongly associated with eating habits and health attitude caused by popularity of fast food, soft drinks, lack of exercise, smoking habit, alcohol consumption, and improper sleeping habits. The objective was to evaluate the eating habit and health attitude among the medical and pharmacy students in UnikL Royal College of Medicine Perak. This cross sectional study included 202 students from MBBS and Pharmacy of UnikL Royal College of Medicine Perak. Questionnaires were employed to assess the eating habit and health attitude through the simple random selection of students. The mean diet score of MBBS and pharmacy was (6.53±0.14) and (5.73±0.23) respectively and the difference was not statistically significant ($p=0.067$) conversely the mean lifestyle score of MBBS and Pharmacy students was (3.89±0.09) and (3.55±0.12) and it was not significantly different ($p=0.058$). In total, less than half of the total respondent practices a healthy eating habit as well as healthy attitude. This study showed relatively better eating habits and health attitudes among the medical students than pharmacy students. But an educational program may be introduced to improve further for both the groups.

Keywords: Eating, Health, Medical, Pharmacy, Students, Malaysia

INTRODUCTION

Non-communicable diseases are increasing worldwide and pose a major concern to the public health; a large part of which is preventable. Recent findings have suggested that up to 1.7 billion people worldwide are overweight or obese, making this as one of the biggest health threats facing the population of the world especially among students¹. This health concern is strongly associated with eating practices and health outlook caused by acceptance of fast food, soft drinks, sedentary lifestyle, and lack of exercise, smoking, alcohol consumption, caffeine overuse and improper sleeping habits^{2,3}. The risk of developing diabetes, osteoporosis, cardiovascular diseases and cancer increases with many folds with unhealthy lifestyles⁴.

A healthy diet is the one that helps to maintain and improve overall health. A healthy diet provides the body with essential nutrition. The World Health Organization (WHO) makes the following recommendation about healthy eating habits which are eating the same amount of calories that your body is using, increase consumption of plant foods such as fruit, vegetables, whole grain and nuts, limit intake of fat, limit intake of sugar and lastly limit salt/sodium consumption^{5,6}.

Traditional definitions of physical health prior to the onset of modern medicine would have considered someone physically healthy if he or she was not stricken with a serious illness. Modern medical innovations bring longer lifespans, which changed the way we define physical health. Physical health is critical for overall well-being and is the most visible of the various dimensions of

health, which also include social, intellectual, emotional, spiritual and environmental health. Some of the most obvious and serious signs that we are unhealthy appear physically. Addressing this dimension is crucial for anyone attempting to sustain overall health and wellness⁷. Maintaining a good physical health is through exercise or life-style activities such as walking, jogging, running, cycling and yoga. Many students are lacking all this concern about healthy eating habits and attaining a good physical health⁸.

Unhealthy and poor food habits picked up at college or university levels this level and usually persists in adult life⁹⁻¹¹. At this stage young adults suffer from stress and extreme busy with studies and new issues of life^{4,10}. As such for young adults lifestyles have placed them into a susceptible cluster because of poor food habits which causes deplorable nourishment and fails to meet the daily dietary requirement¹²⁻¹⁵. Environment factors also contribute to the unhealthy lifestyle practice by students. Stress, convenience stores, vending machines, fast food outlets and lack of control from parents have led to the practice of unhealthy lifestyles¹⁶.

Poor eating habit is a major public health concern among young adults who experienced transition into university life¹¹, during which they are exposed to stress and poor physical activity due to lack of time^{4,10,17}.

It is a well-known fact that medical students' time is very precious. They equally suffer from stress and poor physical activity and not healthy dietary habits although they have better knowledge than other university students^{10,15,18}. Among this university or college



population, it is assumed that medical students have better knowledge about eating habits and healthy lifestyles compared to non-medical students¹⁹. However researches have shown otherwise. Healthy dietary habits among medical and nursing students are even more important as they are the future health professionals and students who ignore to adopt healthy lifestyle will fail in setting as an example to their patients²⁰⁻²². Poor dietary habit and lifestyle also exists in female medical students²³. In Malaysia, many studies have been done regarding eating and lifestyle habits among students in a university: however there is an inadequate published data on eating habits and health attitudes compared to the students from the same field of study. Therefore it will be beneficial to explore if there is any association between the eating habits and health attitudes among the students.

Hopefully this study will provide some references to improve future researches on this field. The aim of this study is to evaluate the eating habits and health attitude among medical and pharmacy students of UniKL RCMP as well as comparing the knowledge and barriers each group faces in following a healthy lifestyle.

Research Objectives

The aim of this study is to evaluate the eating habit and health attitude among the medical and pharmacy students in UniKL RCMP.

- To determine the socio-demographic characteristics such as age, gender, race, and course of study.
- To identify the eating habits of the medical and pharmacy students.
- To determine the health attitude among the medical and pharmacy students.
- To determine the association between health attitudes and eating habits.

MATERIALS AND METHODS

This was a cross sectional study was conducted among medical students and pharmacy students of UniKL, RCMP about eating habits and health attitude. A pretested questionnaire was designed and categorized into two

main category, eating habits and health attitudes. It is then distributed to all the MBBS and Pharmacy Year I and II students. The questionnaires were distributed to the students and were requested to return them within two days. 202 students returned the completed form and were included in the analysis. Using Nominal scale, eating habits was quantified by asking the students to declare if they would agree to the statements, 'do you take balanced diet', 'do you add vegetables in your daily meals' and 'do you tend to eat more when you are stressed'. Regarding lifestyle habits, the students were to declare if they would agree to the statements, 'do you exercise regularly', 'do you smoke' and 'do you consume alcohol'. BMI was measured via the students' self-reported height and weight. The BMI was calculated for each person using the formula $\text{weight (kg)}/\text{height}^2 \text{ (m)}$.

Four weight categories were defined,

BMI <17.50 kg/m²=underweight,

17.50-22.99 kg/m²=normal weight,

23.00-27.99 = overweight and

> 28.00 kg/m²=obese.

This categorization ensured comparability with results from an earlier study concerning the BMI of medical students and pharmacy students of UniKL RCMP. The target population of this study were the medical and pharmacy student of UniKL Royal College of Medicine Perak. All Year I and II MBBS students and pharmacy degree students who were present and agreeing to participate in the survey. Sample Frame - All Year I and II medical student and students of pharmacy degree of UniKL Royal College of Medicine Perak. Epi Info software was used to calculate the sample size with the highest possible confidence interval 95%. A consent form is provided with name and the signature as a proof of the students' permissions to participate in the study voluntarily. All responses from the participants were kept confidential and they were also, allowed to refuse participation in the study. This research was conducted for one month starting from 3rd to 28th November 2014.

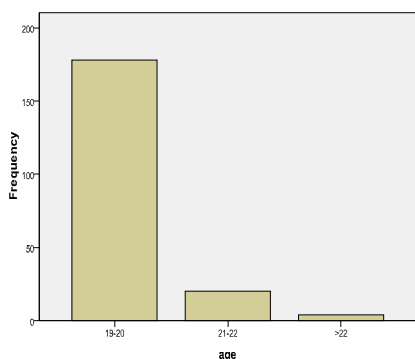


Figure 1: Age Distribution of Respondents

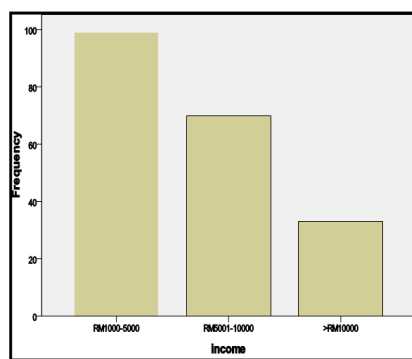


Figure 2: Family Income of the Respondents

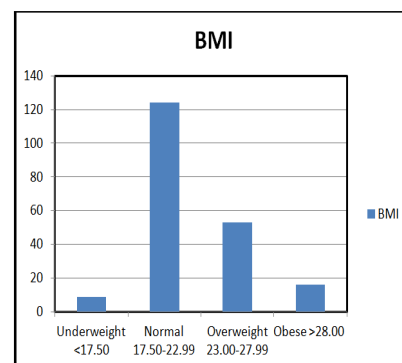


Figure 3: BMI Distribution of Respondents

Table 1: Socio-Demographic Characteristics of the Respondents

Variables	Number	Percentage (%)
Age in Years	19-20	88
	21-22	10
	>22	2
Gender	Male	33
	Female	67
Ethnicity	Malay	84
	Chinese	3
	Indian	5
	Others	8
Course of Study	MBBS	72
	Pharmacy	28
Year of Study	Year I	56
	Year II	44
Monthly Family Income	RM1000-5000	49
	RM5001-10000	35
	>RM10000	16
BMI	Underweight- <17.50	5
	Normal- 17.50-22.99	61
	Overweight- 23.00-27.99	26
	Obese- >28	8

Table 2: Pattern of Eating Habits and Health Attitude among MBBS and Pharmacy Students

2	MBBS		Pharmacy		P value (Pearson)
	Healthy	Unhealthy	Healthy	Unhealthy	
Meals that you take regularly in a day	66	34	63	38	0.599
Do you add vegetables in your daily meal	86	14	73	27	0.039
Do you eat when your stressed	38	62	52	48	0.068
How many hours do you sleep in a day	66	34	50	50	0.031
Do you exercise regularly	53	47	39	61	0.072
Smoking habit	99	1	84	16	0.000
Alcohol consumption	95	5	96	4	0.706

Table 3: Pattern of eating habits and health attitude among male and female students

	Male		Female		P value (Pearson)
	Healthy	Unhealthy	Healthy	Unhealthy	
Meals that you take regularly in a day	67	33	64	36	0.702
Do you add vegetables in your daily meal	82	18	82	18	0.981
Do you eat when you are stressed	43	57	41	59	0.730
How many hours do you sleep in a day	60	40	63	37	0.653
Do you exercise regularly	67	33	41	59	0.000
Smoking habit	85	15	100	00	0.000
Alcohol consumption	97	3	95	5	0.476

RESULTS

202 out of 300 students participated in the study with a response rate of 67.3%. The majority of respondents were received from MBBS students (72.3%). Among all the respondents the majority of respondents were females (67%) and were aged around 19-20 (88%). Most of the respondents were Malays (84%) while Indians (5%) and Chinese (3%) and others with a percentage of 8% (Table 1, Figure 1).

Regarding the family income of the students, majority of the student's family's income, was RM1000-5000 which was 49% (Table 1, Figure 2). The average height of male respondents was 170.0 ± 0.9 cm with average weight of 67.4 ± 1.56 kg. As for female respondents the mean height was 159 ± 0.6 cm with an average weight of 55.0 ± 1.02 kg. To analyze the distribution of BMI, it was categorized into 4 groups (underweight [<17.50], normal [$17.50-22.99$], overweight [$23.00-27.99$] and obese [>28]) according to mean BMI of ± 1 standard deviation (SD) (Figure 3). The average BMI for males and females research respondents were 23.15 ± 0.42 and 21.74 ± 0.34 respectively. According to WHO BMI classification, more than half of the respondents (61%) had a normal BMI, 5% were underweight, 26% were overweight and 8% were obese (Table 1).

The eating habits among students were measured using a set of 10 questions each bearing 1 point. The respondents were analyzed with questions regarding the regular meals consumed and the tendency of the students to eat more when they are stressed. The eating habits of the students were compared among the course of study by scoring system that categorizes (1-5) as the unhealthy diet category and (6-10) as the healthy diet category. The mean diet score (out of 10) of medical students is 6.53 ± 0.14 which is in healthy diet category versus pharmacy students 5.73 ± 0.23 which tails in the unhealthy diet category was not significantly different when the mean were compared using independent t-test ($p=0.067$).

The first question which was about the regular meals consumed by the students of MBBS and Pharmacy courses. Skipping breakfast is believed to be having an unhealthy eating habit; whereas those who skip lunch or dinner are still considered having good eating habits. Our research showed that 67% of MBBS students and 63% of Pharmacy students do not skip their breakfast. The regular meal consumed among the two courses was not significantly different ($p=0.599$) (Table 2). Majority MBBS (62%) and nearing half (48%) pharmacy students eat unhealthy diet when they are stressed with were no statistically significant difference ($p=0.068$) (Table 3). Similar, non-significant ($p=0.078$) finding also observed between genders (Table 3). Regarding vegetable intake there were a significant difference ($p=0.039$) among MBBS (86%) and pharmacy (73%) students (Table 2). But when compare between gender regarding daily vegetable intake there were non-significant ($p=0.981$) difference (Table 3). However, there were no significant difference

($p=0.184$) between gender in the mean diet scores [male (6.37 ± 0.21) and female (6.25 ± 0.15)]. Overall MBBS (75%) students maintain healthy dietary habits than their counterparts with statistically significant ($p=0.029$) difference (Table 4). But no other sociodemographic parameter showed any significant differences (Table 4).

Table 4: Comparison of Socio-demographic characteristics and diet scores

	Diet (%)		P value (Pearson)
	Healthy	Unhealthy	
Course			
MBBS	75	25	0.029
Pharmacy	59	41	
Gender			
Male	70	30	0.974
Female	70	30	
Age:			
19-20	69	31	0.587
21-22	80	20	
>22	75	25	
Income			
RM1000-5000	73	27	0.374
RM5001-10000	68	33	
>RM10000	70	30	

The health attitudes among students were measured using a set of 6 questions each bearing 1 point. These were analyzed with questions regarding 'how many hours do the students sleep in a day', 'their habit of doing exercise', 'smoking habit' and 'alcohol intake'.

The lifestyle habits of MBBS students and Pharmacy students were compared by scoring system which categorizes (1-3) score as unhealthy lifestyle category while those who scored around (4-6) were labeled as having an healthy lifestyle. The mean lifestyle score of MBBS and pharmacy students were 3.89 ± 0.09 and 3.55 ± 0.12 respectively. Both the groups do not attain scores for healthy lifestyles. There was no significant different between the mean lifestyle score among the two courses with value ($p=0.058$). Regarding sleep pattern: 66% of MBBS students sleep 5-7 hours in a day which is considered as a healthy sleeping habit whereas only 50% of pharmacy students sleep 5-7 hours in a day. This showed that half of the pharmacy students sleep less than 5 hours and more than 7 hours in a day which accounts an unhealthy habit compared to MBBS students. This question demonstrated a significant difference among the MBBS students and pharmacy students ($p=0.031$) (Table 2). Regarding exercise habit: 53% of MBBS students and 39% of pharmacy students' exercise regularly exercise. This showed that MBBS students are more keen do exercise compared to pharmacy students but there were no statistically significant difference ($p=0.072$) (Table 2). Smoking habit it was not common in the study respondents. Ninety-nine percent of MBBS students and 84% of pharmacy students stated that they do not smoke. Although smoking habit was not a



dominant feature among study population but it owns a significant difference of ($p=0.00$) (Table 2). Similar finding also observed when compared between genders ($p=0.000$) (Table 3). To compare with alcohol consumption, there were no significant difference ($p=0.706$) between MBBS and pharmacy students. Around 5% of MBBS and 4% of pharmacy students said to be consuming alcohol. This clearly showed that almost equal percentage of students of both courses consume alcohol with no statistically significant ($p=0.706$) difference (Table 2). Similar non-significant ($p=0.406$) also observed when compared among genders (Table 3). Interestingly, 70% of male study subjects maintain healthy lifestyles whereas the figure is 53% for female respondents. The difference was found statistically ($p=0.022$) significant (Table 5).

Table 5: Comparison of Socio-demographic characteristics and lifestyle scores

	Lifestyle (%)		P value (Pearson)
	Healthy	Unhealthy	
Course			
MBBS	62	38	0.202
Pharmacy	52	48	
Gender			
Male	70	30	0.022
Female	53	47	
Age			
19-20	61	39	0.248
21-22	50	50	
>22	25	75	
Income			
RM1000-5000	55	45	0.301
RM5001-10000	60	40	
>RM10000	70	30	

But there were no significant ($p=0.202$) observation when compared between courses (Table 5). This study, the eating habits and health attitudes of the students from the two courses were compared with total diet score and total lifestyle score that were categorized into healthy and unhealthy diet and lifestyle category (Dcat and Lcat). Current study observed that 44% of the respondents that were found to maintain healthy in the diet and lifestyle category.

DISCUSSION

This study aimed to determine the eating habits and health attitudes among MBBS and pharmacy students of UniKL RCMP. The mean diet score and mean lifestyle score of the students from the two courses are categorized into healthy and unhealthy category.

In this study, the result of mean diet score showed that MBBS students had a healthier eating habits with their mean score of (6.53 ± 0.14) compared to pharmacy students (5.73 ± 0.23). However, no significant differences were found between courses. Healthier eating habits of MBBS students may be attributable to the fact that they

were enrolled in a 5 years MBBS Programme that gives a better exposure¹⁰.

Even though medical students scored higher in their mean diet score which sums up the total questions regarding eating habits, no significant difference were found among MBBS students and pharmacy students with regards to regular meals consumed by them. Present study observed that students were found to be skipping breakfast and which is associated with lower nutritional status and the risk of cardiovascular disease (CVD)²⁴⁻²⁷. It has also been reported that less adequate breakfast habits may contribute to development of obesity^{19,28-30}. Among current study respondents more than half (65%) of both MBBS and pharmacy students eats breakfast which was similar to a study conducted in Turkey (67.9%)³¹. However some studies from Malaysian medical school found that less than half of the respondents (43.9%) had breakfast daily¹⁵. Our finding was also higher in comparison to a previous study which found that 32% of study population had breakfast daily³². The most common reason that was stated by most of the students regarding the reason behind their habit of skipping meals is due to their busy schedule that leads to lack of time for them to grab something to eat. This was almost similar with another study stated lack of time seen as the most important for skipping meals and eating irregularly⁹. The most common reason among male students from MBBS and pharmacy students of current research was that they do not have good appetite and lazy most of the time to take their meal regularly on time.

Attending a university or college can be a stressful experience for many college students³². Previous studies found that behavioural consequences of stress may affect eating habits^{33,34}. People living in a stressful society tend to eat more as a way of coping with stress³⁵. According to our study, majority of MBBS students (62%) tend to eat more when compared with pharmacy students (48%) with no significant difference between courses. The result gives a rough view that MBBS students are more stressed which leads them into an altered eating habit. Another study do revealed eating behaviour in university students that some of the students eating pattern tend to worsen when experiencing 'high' stress where they eat voraciously³⁶.

The majority of respondents in our study add vegetables in their meal (82%) which was similar to a previous study done in a Malaysian Medical School¹⁵. This finding was high in comparison to previous studies from China (48%) and Bahrain (26%)^{16,37}. Significant difference ($p=0.039$) observed between MBBS and pharmacy students regarding vegetable consumption. It was reported that low intake of vegetables is associated with several chronic diseases at adulthood³⁸. Another study indicated that persons who consume more vegetables often had lower prevalence of CVD including hypertension, obesity and type 2 diabetes mellitus. Our study disclosed that

majority of MBBS students were aware of this health risk³.

The mean lifestyle score that were calculated in our study represented the health attitude among the MBBS (3.89±0.09) and Pharmacy students (3.55±0.12) showed no significant difference.

Although MBBS students scored higher in the eating habit section, they were found not incorporating a healthy lifestyle as well which shows that a poor health attitude among them. Their mean score however is slightly higher than pharmacy students but in the end both the mean score of MBBS and Pharmacy students falls under the category of unhealthy lifestyle category.

Several of the unhealthy lifestyle choices including lack of sleep may be linked to a high level of perceived stress¹⁰. Sleep is essential for every student to help them to retain what they study and to keep them mentally sharp. Therefore, enough hours of sleep also determines a healthy lifestyle.

There were a significant ($p=0.031$) difference found between two categories of respondents. Although it is generally thought medical graduation programme is more stressful than any other course but our MBBS participants had better lifestyle than their counterparts.

The present study observed that there were no significant differences found among MBBS and pharmacy students regarding their habit of exercising on a daily basis. There is a plethora of experimental and clinical studies supporting the evidence that moderate exercise is a deterrent of Cardiovascular Disease (CVD) and atherosclerosis³⁹⁻⁴³. On an average around 50% of the respondents exercise regularly. This may be due to demands of their studies as reported in a similar study done previously which also found that most MBBS students do not get time to exercise regularly¹⁰. However, the students that were found to practices a healthy lifestyle regularly prefers to be jogging or go for a brisk walking as an exercise to be carried out daily. Jogging and walking was a common preferred type of physical exercise among both male and female respondents from pharmacy department. MBBS students revealed different type of exercise and the common exercise among male was jogging and playing futsal whereas most female from MBBS faculty prefers to work out and choreograph some dance moves as a moderate exercise that could be done even at home.

Based on current research findings few respondent smokes and drinks alcohol and this result were similar to a previous study done¹⁶. There were a clear significant ($p=0.000$) difference in the case of smoking between two courses.

Although there was no significant differences in consuming alcohol but figure was little higher with medical programme ($p=0.706$) and male students ($p=0.406$). This can be explained as 16% of the study

participants were from Chinese, Indian and others ethnic group. Therefore, alcohol consumption in those ethnic groups is a part of social life and religious barring.

CONCLUSION

This study found that there was a direct association between the healthy meal habits and lifestyle attitudes, but still a further study in a large population is recommended.

Although this study showed relatively better eating habits and health attitude among the medical students than pharmacy students, an educational program should be encouraged and introduced for both the groups to improve healthier eating habits and health attitude.

Acknowledgement: We would like to thank the students of RCMP for their participation and cooperation. We are also grateful to Dean, UniKL RCMP, for all kind cooperation and support to conduct the study. Authors do not possess any conflict of interest. This study obtains no funding.

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Source of Support: Nil, **Conflict of Interest:** None.

