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Association of Dietary Habits and Body Mass Index among University Students in Malaysia: A Cross-Sectional Study

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Abstract: *Young generation is deeply concerned about their body weight; however less is known about the important role of healthy dietary habits in the prevention of obesity. This study explores the associations between dietary habits and body mass index among university students and determines the prevalence of overweight and obesity among university students. A cross-sectional study was conducted among university students. Convenient sampling was used. A self-reported questionnaire was used to gather data on weight, height and their dietary habits. Body Mass Index was calculated from weight and height. Statistical Package for Social Sciences (SPSS) version 20 was used for data entry and analysis. Results were expressed as percentages. 372 students participated in the survey. Among them, 43.5% were medical students whereas 56.5% were non-medical students. Majority of the participants 255 (68.5%) had normal body mass index, 68 (18.2%) were underweight while 49 (13.6%) were overweight and obese. Breakfast and supper intake, diet content, favorite beverage and knowledge of balanced diet were significantly associated between different faculties ($p<0.05$). While for the association between dietary habits and BMI, only snack intake, favorite beverage and daily water intake showed significant association. The results of this study highlighted the need of educating students regarding good dietary habits. Clinicians and dietitians should also consider factors like genetic contributors and metabolic conditions along with dietary habits in the management of obesity among university students.*

Key Words:*Dietary Habits, Body Mass Index, Obesity, University Students*

I. Introduction

Obesity is the fifth most significant preventable cause of deaths worldwide, with at least 2.8 million people die each year. As the prevalence of overweight and obesity are escalating in both developing and developed countries not only among adults but also in children and adolescents, concern and attention on the association between body weight and overweight and obesity-related health problems also increase. Based on the British medical journal, The Lancet, 49% of women and 44% of men in Malaysia were found to be obese whereas a prevalence of 45.3%, 33.2%, 30.7% and 28.3% overweight respectively in Malaysia, South Korea, Pakistan and China (The Star Online, 2014). Therefore, Malaysia has been ranked as the highest among Asian countries for obesity.

Obesity is defined as excessive fat accumulation that presents a risk to health. There is evidence reported that obesity is a major concern which was associated with other health problems such as increase in risk of hypertension, diabetes, heart attack and other chronic diseases that affect the quality of life (Lowry et al., 2000).Based on the most recent estimates available, the prevalence of underweight among adults is higher than overweight in Southern Asia. People who are categorized in underweight category of the Body Mass Index (BMI) is mostly linked to various conditions like malnutrition, immune system impairment, emotional problems and delayed puberty. Another study at University Sains Malaysia (USM) demonstrated that there is a higher percentage of the underweight among USM students (Huda, 2010). Moreover, from the findings, the prevalence of underweight was higher among female students (33%) compared to male students (20%).

For the past two decades, rapid increase of socioeconomic development in Malaysia had significant changes in the lifestyles of Malaysians which included changes of dietary patterns. Changes in meal patterns can be seen where more families eat out, meals skipping when busy, and the young skip breakfast and rely heavily on fast food.

Eating habits can be understood in terms of what and how people eat, their selection of food and the way of getting food. Dietary pattern such as eating a range of food that is high in fruits, vegetables and fiber and low in saturated fat, sugar and salt can help in maintaining a healthy weight. Particularly, dietary pattern including regular breakfast consumption have been associated with lower body weight. It is expected that the medical students would practice healthy dietary habits and lifestyle compared to non-medical students.

However, there is no evidence to show that this adequate knowledge translates into practices in terms of maintaining good health. Sajwani et al (2003) reported that non -medical students' diet practices were better than medical students in their comparative study. Many studies have reported that, young adult especially medical students do not get into the diet practices (Padmasree et al., 2012).

Overweight and obesity appear to have the potential to course from adolescence into adulthood, due to the tendency of adolescence unhealthy eating and activity habits to persist into adulthood. . Therefore, colleges and universities are probably important targets to promote healthy physical activity for decreasing the prevalence of overweight among adult population (Lowry et al., 2000). Adolescents may not consider the long term consequences of their health practices instead they just think of the short term consequences and they assumedcan alter their habits later for better health (Norman et al., 2000).University life is very stressful and poor eating habits is a major public health concern among young adults who experienced transition into university life (Gan et al., 2008), during which, the major leading causes of stress were due to academic stress and time management. It also stated that stress can decrease the likelihood of individuals to practice healthy habits, for example having a high intake of oily food. Furthermore, more studies have shown there is association between stress and health (Ahmed et al., 2014).

In addition; the frequency of breakfast consumption significantly decreases among young generation especially for university students. These less health conscious behavior for example; breakfast skipping served as a predictor of adult obesity. So the purpose of our study is to determine the association between dietary habits and body mass index (BMI) among UTAR students and dietary pattern of university students.

II. Methods

This cross sectional study was conducted at Sungai Long campus of University Tunku Abdul Rahman (UTAR). The campus includes Faculty of Medicine & Health Sciences (FMHS) and Faculty of Accountancy & Management (FAM). The questionnaire was administered to students enrolled in FMHS and FAM of UTAR, Malaysia. Our research study received ethical approval from UTAR Scientific and Ethical Review Committee. Participation was voluntary, and informed consent was obtained from each participant. All the study participants were assured full confidentiality of the data collected. The students were sampled by using convenience sampling method and we administered a self-reported questionnaire. The survey questionnaire comprised of two sections. The first section included questions on socio demographic data such as year of study, faculty, age, sex; weight and height of the participants. Body mass index (BMI) was calculated using the formula weight in kilograms divided by the square of the height in meters (kg/m^2).

The second part was a dietary habit questionnaire. A self-administered questionnaire was developed to elicit information on the dietary habits of students. Short questions about food behavior of the young adults in particular related to eating pattern, food choices, consumption of fruits and vegetables, beverages and knowledge about balanced diet were included in the questionnaire. A pilot study has been conducted on a batch of 10 university students randomly in the campus. The suggestions or any difficulty in filling the survey form claimed by the participants in pilot study were used to improve the questionnaire. Pilot study was aimed to improve reliability and validity of the dietary habit questionnaire. The questionnaires were administered to UTAR students during break time in the classroom. Participants were required to fill in the survey form and return it to the researcher once completed. Before distribution of questionnaire, a brief explanation was given by the researchers to inform the participants about the study objectives and instructions to complete the survey form.

Statistical Analysis

Descriptive statistics such as frequencies and percentage were used. Pearson Chi-Square was performed to compare the different associations between variables. All reported probability values were compared to a significant level of 0.05. For all statistical tests a p-value of < 0.05 was considered as statistically significant. The BMI category was initially divided into three categories: underweight normal weight children and overweight and obese. Overweight and obese were arranging in a single category.Data entry and statistical analysis was performed with the IBM SPSS Statistics version 20.

III. Results

Out of 372 participants, 162 (43.5%) students were from FMHS and 210 (56.5%) from FAM. 140 (37.6%) participants were males and 232 (62.4%) were females. The response rate was 93%. The mean age for total population was 20.7±1.3 years. Study participants included 142 (38.1%) students from first year, 133 (35.8%) students from second year, 89 (23.9%) from third year, 7 (0.9%) from fourth year and1 (0.3%) from fifth year. Among the participants, 354 (95.2%) of them did not report any chronic disease and 15 (4.0%) of them reported affection of asthma. Table: 1 shows the socio-demographic data of the students.

As per WHO International Classification of Body Weight, 255 (68.5%) of total study population had BMI in the normal weight category, 68 (18.3%) of total population were underweight and 49 (13.2%) were overweight or obese. Out of 68 of total underweight participants, 23.3% of females were underweight compared to only 10% of males (Table: 2). The prevalence of overweight and obese was higher among males than females. Out of 49 overweight and obese participants, 19.3% were males while only 9.5% were females. There was a significance association between gender and body mass index among university students (p=0.001).

As shown in Table: 3, the majority of the respondents (43.0 %) reported they "always" take breakfast. The vast majority of the students (70.7%) reported that they were having supper "sometimes" with 68.5% of medical and 72.4% of non-medical students respectively. Most of the students (70.9%) consumed snacks "sometimes". The prevalence of students "always" or "often" eating snacks was 25.6%.More than half (55.9%) of the students had "different foods every day". Out of 208 students, 54.3% of medical students and 57.1% of non-medical students preferred to have "different foods every day". Out of 372 students, 62.9% of them were preferred self-cooking rather than eating outside foods.

Overall, the food choices related to fruit and vegetables consumption resulted in only 16.4% and 31.9% of students reported that they "always" and "often" eat at least 2 portions of fruits and vegetables every day respectively. However, most of the students about 45.7%, they consumed 2 portions of fruit and vegetables "sometimes".Out of the four beverages (soda, coffee, tea and beer), tea (31.7%) was the most favorite beverage for students, chosen by 27.2% and 35.2% of medical and non-medical students respectively (p=0.000). A question has been asked to examine the knowledge of balanced diet among students. 55.9% of the participants thought that balanced diet is a diet contains different food every day. Majority of students (79.3%) frequently drink at least 1-1.5L of water daily. A significant association was observed between water intake and BMI (p=0.015).36.8% of the participant regularly adds salt into their foods. Out of them, 49% belongs to overweight and obesity.

IV. Discussion

Previous studies showed that the prevalence of obesity and overweight has increased among university students in Malaysia. The purpose of this study was to assess the BMI among the university students and to find the association of dietary habits on BMI among university students.

In our study, the prevalence of overweight and obesity among university was 13.2%. According to WHO, overweight and obesity is when BMI of an individual exceed 25. This is consistent with the study done by Huda et al, (2011) and Gan et al, (2009) on university students in Malaysia which showed that around 13.0% of the students were obese or overweight. In addition, the study stated that the prevalence of underweight was higher than overweight and obesity. This is similar with the findings of this study in which the prevalence of underweight was 18.3%. Most of the participants in this study were Chinese students, and the prevalence of underweight among Chinese students conducted by Sakamaki et al. (2005) was 16.6% which is consistent with our results. Another study conducted in Japan showed that majority of students having a desire to be thinner although the prevalence of overweight was very low in this study population.

In term of gender difference, males (19.3%) were more overweight and obese than females (13.2%) in this study. This was consistent with the findings of Ghrayeb et al. (2013) in which 23.4% of male and 13.7% of female were overweight and obese. For the underweight categories, prevalence of underweight among university students was 18.3%. Proportion of underweight female was higher than male which is 23.3% and 10% respectively. Female students have more desire to be thinner than male (Sakamaki et al., 2005). According to Ministry of Health (2010), a low body weight was an unhealthy condition as it can increase the risk of clinical conditions such as anemia and lead to distortion of body image among young adult. The prevalence of normal weight was 68.5% which is similar to a study conducted by Khan et al, (2011) in UniversitiTeknologi MARA (UiTM), PuncakAlam Campus.

The result of the study showed majority of the participants (59.7%) ate their breakfast. This was consistent with the study carried out by Ganasegeran et al., (2012) that demonstrated 56.1% of students in Malaysia took breakfast regularly. However, this result was contradicted with the findings of Gan et al., (2009) which suggested only one third of university students in Malaysia consumed breakfast daily. In addition, having breakfast had a potential to help in treatment of binge eating disorder. Researchers found that medical students (67.3%) tend to eat breakfast than non-medical students (53.8%). It was important to the medical student to eat breakfast regularly in order to obtained sufficient energy intake to "overcome fatigue due to busy daily learning schedule" (Anuar et al., 2011). This showed that medical students had more knowledge about health issues regarding diet (Sajwani et al., 2006). Therefore, this knowledge seems to be translated into practices. In contrast, Dogbe et al. (2014) suggested the frequency of breakfast skipping in Korle Bu-Accra as high as 71.92%. Moy et al. (2009) stated that lack of time, lack of appetite and oversleeping were the leading causes for breakfast skipping.In this study there is no significant association between breakfast consumption and BMI. Nevertheless,

the findings of the study done by Anuar et al. (2009) was consistent with the result in which more than half of the participants reported having breakfast were in normal BMI.

Our results state that 70.7% of university students had supper once a while which is "sometimes". 16.1% of participants consumed supper frequently and this result was twice the result suggested by Gan et al. in 2011. There was significant difference observed between medical students and non-medical students in term of supper in which the non-medical students tended to eat supper frequently than medical students. The medical students who never eat supper were double the number of non-medical students that never eat supper.

The findings depict a negative relationship between snacking and BMI. This was supported by the study conducted by Kumar et al. in 2014. The frequency of snacking is highest among underweight participants (36.7%) then followed by normal (22%) and overweight (14.3%) participants. The same result was reported by Kim et al., (2011) which stated underweight students ate snack more frequently than overweight students. Graaf (2006) reported a positive energy balance as a result of frequent snacking can increased body weight. Whereas another study conducted by Al- Rethaiaa et al., (2010) had showed a negative relationship between snacking and BMI. The explanation for this phenomenon was the larger meals taken by the person in absence of snacks.More than half of the participants (55.9%) ate different foods every day. In a study conducted by Yahia et al. (2008), 97.6% of students realized the importance of eating variety of foods including meat, vegetables, fruit and grains to sustain good health. However, university students in this study usually do not follow the healthy diet habits; though they have good knowledge of healthy diet.

One quarter of medical students (28.4%) diet were mainly based on high carbohydrate content foods. A recent study showed that a diet rich in carbohydrate was associated with increased risk of diabetes (Haltonet al., 2014). Although students with medical and health sciences background had adequate knowledge about healthy diet, it does not result into better practices (Sajwani et al., 2009). There was no association observed between diet contents and BMI in this study. This is in contrast with the study done by Hankey et al., (2003) that highlighted the excessive calories from carbohydrate and fat can lead to overweight.

According to the WHO, standard and recommended intake of fruits and vegetables per day was 400g (WHO, 2013). The present study showed that 76.5% of the medical students and 78.6% non- medical students often consumed at least 2 portions of fruit and vegetable every day. These findings were consistent with the results of that higher frequency (81.8%) of fruit and vegetable consumption in a Malaysian medical school (Ganasegeran et al., 2012). The research result was comparatively higher when compared to another study which only 19% of university students consumed vegetable at least 5 times per week (Gan et al., 2011). In recent years, only 14.8% of the students consumed daily intake of fruit (Khan, 2011). Moreover, this finding was higher as compared to another study byLowry et al. (2000) which stated that only one quarter of the US college students (26.0%) consumed more than 5 serving per day of fruit and vegetable. In our study, most of them were aware of the importance of fibers in our diet. Field et al. (2003) suggested there was inverse relationship between fruit and vegetables and BMI. Al-Rethaiaa et al. (2010) found that having whole fruits improve satiety and hence reduce the energy intake at the next meal. Some obesity-prevention interventions have included efforts to increase the consumption of fruits and vegetables, these foods may replace the more high calories food choices popular among adolescents. However, overweight and obese students tend to eat more fruit and vegetables than normal and underweight students in this study. However, choice of food consumption may be influenced by social interaction, family background, habits and availability of food (Abdel-Megeid et al, 2011). The study conducted by Unusan et al reported that intake of the fruit and vegetable decreasing gradually with the increase of stress level among Turkish university students (2006). Several chronic diseases may associate with the low intake of fruits and vegetable at adulthood (Kerkadi et al., 2003). This study revealed that coffee and tea were popular among university students. Up to one third of the students (31.7%) preferred tea to other beverages and coffee is the second favorite (26.3%). Norimah et al. (2003) stated the percentage of Malaysian that like to drink tea was 47%, while coffee was 28%. Another research showed that most of the university students frequently consumed drinks were coffee and tea with 7.4 servings per week(Bagordo, 2013). Tea is one of the most popular beverages consumed worldwide. Tea served as antioxidant, possess anti-mutagenic and anti-carcinogenic effects and protect human against cancer. Among those who overweight or obese, majority of them prefer soda drink and coffee in this study. While for normal weight participants, majority of them pick tea as their favorite's beverage. Tea could prevent obesity and diabetes (Chacko et al., 2010).

Besides that, 19 (11.7%) and 25 (11.9%) of the medical and non- medical students picked soda as their favorite beverage. One of the similar results was conducted in UiTMPuncakAlam showed that the 11.7% of the students consumed soft drink at least three or four times per week. High intake of soft drink led to high risk of chronic disease such as diabetes and hypertension. Moreover, the prevalence of overweight and obesity was increasing due to high consumption of sugar-sweetened beverages (Malik et al., 2006; West et al., 2006). Surprisingly, 13 (6.2%) of non- medical students preferred beer as their favorite drink and only 1.2% of the medical students picked beer as their favorite drink. One of the research studies proved that the increase of

alcohol consumption lead to weight gain among the male students (Economos et al., 2008). According to a previous study 1.6% of male and 2.0% of female reported daily consumption of alcohol (Seo, 2010). Another study reported that none of the college students drinking alcohol in a total of 357 male respondents in the age group of 18 to 24 years old. These habits should be encouraged (Al-Rethaiaa et al., 2010).

The recommended daily water intake was 6 to 8 glasses (NCCFN, 1999). Approximately half of the medical students (51.9%) and non- medical students (42.4%) always drink at least 1L to 1.5L of water every day. Besides that, Ganasegeran et al reported that 40.2% of the respondents had consumed more than 2L daily (2012). The water consumption of Malaysian university students was considerable high. One of the research results demonstrated a satisfactory habit of drinking plain water in Malaysia. Average of the population consumed more than 6 glasses of plain water every day which achieved the recommended daily water intake by NCCFN (Norimah et al., 2008). In addition, sufficient of fluid intake could prevent constipation.Many research studies stated that average resting temperature was higher in tropical natives than temperate natives. This study revealed that the resting temperature of all the combined well-hydrated and poorly-hydrated condition of Malaysia were higher than Japan (Saat, 2005).

General data analysis on the frequency of salt intake revealed that 38.3% and 35.7% of the medical and non- medical students regularly added salt to their cooking and food. Result showed that approximately one third of the participant preferred to add salt into their daily meal. The data was not significantly different between both faculties. In two studies, medical students adding salt into food were 20% and 47% (Ayranci et al., 2010; Adami GF et al., 2003). This finding was comparatively lower than one of the studies carried out at Istanbul University Cerahpasa Medical Faculty had been proved that 50% of the medical student tended to add salt in their dishes (Yilmaz et al., 2014).Salt intake and blood pressure were found to be elevated among young adults in Paraguay. 46% of the young Paraguayans in this study had a systolic blood pressure more than 120 mmHg but less than 139 mmHg, the researcher had defined this phenomenon as pre-hypertension (Campagnoli et al., 2012). However, the authors suggested there was no significant association between sodium excretion and blood pressure in their study. Most of the students in the present study reported regularly add salt into their food. 49% of participants that were overweight and obese reported regularly add salt into foods. However, there was no association between salt intake and BMI. This was consistent with the study conducted by Choong et al. (2012) in which absence of association between the salty food preference and intake frequency with BMI status among UTAR students in Perak Campus.A stronger evidence supported that salt intake was strongly associated to the development of hypertension. According to the salt-genetic hypothesis, increase of blood pressure with the significant increase of salt intake in genetically may lead to hypertension (Oliver et al., 1975). High intake of salt caused the fluid retention which increase the blood pressure exerted by the blood against blood vessel walls. A positive relationship between salt intake and blood pressure were observed (WHO, 2006).

In this study, majority of the medical (93.2%) and non-medical (71.9%) students believed and agreed that eating different and variety of food everyday will provide them a balance diet. In contrast, this finding was similar to another research study which reported by Davy et al that 94.4% of the students believed it was important to eat different kind of foods for healthy (2006). A total of 4 (2.5%) and 25 (11.9%) of the medical and non- medical students agreed that a balanced diet should rich in protein while none of the medical students and 11 (5.2%) of the non-medical students believed that a diet with high amount of carbohydrate was important to maintain a balanced diet. Another study reported that 35.2% of the medical students scored above average in a nutrition knowledge question compared to 14.4% of non-medical student. This result showed that medical students had a superior level of nutrition knowledge than the non-medical students (Sajwani et al., 2009). Moreover, daily meal should contain a variety of food to achieve a balance diet (Hakim et al., 2012).

Food habits are associated with the risk of a range of health problems and influence health and wellbeing at all stages of life. For several decades Malaysian government has offered specific dietary advice to citizens to decrease this risk and to promote optimal health. Governments and other organizations have also undertaken a range of initiatives to improve the dietary intake and health of the population. In spite of this history of interventions and dietary advice there has been little systematic development of an agenda for monitoring food habits.

Obesity represents an alchemic mix of everything from genetic contributors to metabolic conditions such as diabetes and hypertension, to psychological and behavioral issues. Clinicians and dieticians should consider factors other than dietary habits that drive obesity among university students. In addition, the particular combinations of these factors that drive obesity are different for each patient, and the standardized, fix-it-with-a-pill approach simply will not help to recognize and treat body weight problems properly.

V. Limitations And Recommendations

This research study is cross-sectional in nature, and therefore the results are limited in predicting a causal relationship. Since the research involved only young adults, the findings cannot be used to draw conclusions for men or women of other ages. BMI was used to determine the weight status of the participants without distinguished excess fat, muscle, or bone mass in an individual. This study only examined the general dietary habits among university students. A further research should include the food intake diaries to find out the amount of consumption to every major nutrient and examined the calories intake. Hence, furtherlongitudinal studies are recommended to determine conclusive results.

VI. Conclusion

Sedentary lifestyle with less physical activities as well as changing dietary habits occurs not only in affluent countries, but also in developing countries and in countries in economic transition. Lifestyle and dietary habits in Malaysia also have changed following rapid economic development. The results showed that both the problems of under- nutrition and over-nutrition co-exist among the university students of Malaysia.The dietary habits among university students were comparatively good. This study found that majority of university students had normal weight. The present study showed that males had a higher percentage of overweight and obesity than females and there was a significant association between body mass index and gender.

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Tables

Characteristics	Categories	No. of students(n=372)	Percentage (%)
Year of Study	Year 1	142	38.1
	Year 2	133	35.8
	Year 3	89	23.9
	Year 4	7	1.9
	Year 5	1	0.3
Faculty	Faculty of Medicine and Health Science	162	43.5
	Faculty of Accountancy and Management	210	56.5
Gender	Males	140	37.6
	Females	232	62.4
Age group	18-20	178	47.8
	21-23	172	46.2
	24-26	22	5.9
Chronic	None	354	95.2

disease	Asthma	15	4
	Hypertension	1	0.3
	Other	2	0.5

Table 1: Socio-Demographic Data

Classification	BMI(kg/m2)	Male		Female		Total	
		n	(%)	n	(%)	n	(%)
Underweight	< 18.5	14	10.0	54	23.3	68	18.3
Normal weight	18.5-24.9	99	70.7	156	67.2	255	68.5
Overweight/ obese	25.0-29.9	27	19.3	22	9.5	49	13.2

Table 2: Percentages of students by gender based on Body Mass Index (BMI)

No	Question	Answer Levels	Faculty of Medicine and Health Science	Faculty of Accountancy and Management	Total (N=372%)	P-value
Q1	How often do you have breakfast?	A. Always B. Often C. Sometimes D. Never	N=87 (53.7%) N=22 (13.6%) N=51 (31.5%) N=2 (1.2%)	N=73(34.8%) N=40 (19.0%) N=88 (41.9%) N=9 (4.3%)	N=160 (43.0%) N=62 (16.7%) N=139 (37.4%) N=11 (2.9%)	0.002*
Q2	How often do you have supper?	A. Always B. Often C. Sometimes D. Never	N=6 (3.7%) N=15 (9.3%) N=111(68.5%) N=30 (18.5%)	N=11 (5.2%) N=28 (13.3%) N=152(72.4%) N=19 (9.0%)	N=17 (4.5%) N=43 (11.6%) N=263 (70.7%) N=49 (13.2%)	0.042*
Q3	How often do you eat snack?	A. Always B. Often C. Sometimes D. Never	N=10 (6.2%) N=25 (15.4%) N=122(75.3%) N=5 (3.1%)	N=20 (9.5%) N=40 (19.0%) N=142 (67.6%) N=8 (3.8%)	N=30 (8.1%) N=65 (17.5%) N=264 (70.9%) N=13 (3.5%)	0.414
Q4	Your diet is based mainly on:	A. High protein content foods B. High fat content foods C. High carbohydrate content foods D. Different foods every day	N=26 (16.1%) N=2 (1.2%) N=46 (28.4%) N=88 (54.3%)	N=44 (20.9%) N=9 (4.3%) N=37 (17.6%) N=120 (57.1%)	N=70 (18.8%) N=11 (3.0%) N=83 (22.3%) N=208 (55.9%)	0.030*
Q5	Which one do you prefer?	A. Outside eating B. Self-cooking	N=53 (32.7%) N=109(67.3%)	N=85 (40.5%) N=125 (59.5%)	N=138 (37.1%) N=234 (62.9%)	0.416
Q6	Do you eat at least 2 portions (200g) of fruit and vegetables every day?	A. Always B. Often C. Sometimes D. Never	N=31 (19.1%) N=52 (32.1%) N=72 (44.4%) N=7 (4.3%)	N=30 (14.3%) N=67 (31.9%) N=98 (46.7%) N=15 (7.1%)	N=61 (16.4%) N=119 (31.9%) N=170 (45.7%) N=22 (5.9%)	0.450
Q7	What is your favorite beverage?	A. Soda B. Coffee C. Tea D. Beer E. Others	N=19 (11.7%) N=38 (23.5%) N=44 (27.2%) N=2 (1.23%) N=59 (36.4%)	N=25 (11.9%) N=60 (28.6%) N=74 (35.2%) N=13 (6.2%) N=38 (18.1%)	N=44 (11.8%) N=98 (26.3%) N=118 (31.7%) N=15 (4.0%) N=97 (26.1%)	0.000*

Table 3: The dietary habits among medical students and non-medical students