

Food Access and Fast-Food Consumption Behaviour among Health Sciences Students at Uitm Puncak Alam

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ABSTRACT

Background: Fast foods can be seen convenient to people who lives a busy lifestyle. Nevertheless, uncontrolled consumption of fast food can lead to obesity. About 84% of Malaysian students consumed fast food and often unable to meet recommended nutrient intake due to snacking habits and skipping meals. **Objective:** To identify food access and fast-food consumption behaviour among Health Sciences students at UiTM Puncak Alam. **Methods:** This cross-sectional study was done among Health Sciences students at UiTM Puncak Alam. The questionnaire was adapted from 'Fast Food Consumption and Obesity'. A total 267 from Year 2 and Year 3 was participated. The questionnaire consists of 27 questions including demographic data, food access and fast-food consumption behaviour. **Results:** Majority of the students have problem in transportation for food access and consumed fast food many times per month. However, the study finding showed no relationship between transportation problem, fast food consumption behaviour and BMI. **Conclusion:** With the advance in technology food can be order online and can be delivered by the restaurant. Therefore, there was no relationship between transportation problem and fast-food consumption behaviour. Future research should focus on effect of fast-food consumption behaviour on students' academic performance and health related quality of life.

Keywords: *Fast Food; Food Access; Consumption Behavior; Body Mass Index*

INTRODUCTION

Malaysia is undergoing a rapid process of modernisation. Through the 9th Malaysia plan, the government has taken the initiative to promote and encourage Western fast-food franchises, as one of many efforts to boost the country's economy (Abdullah *et al.*, 2017). Ali & Abdullah (2012), state that the new living environment and changes of lifestyles have resulted in a new arrangement in eating, which was not the case two decades ago. As a result of lifestyle changes in metropolitan cities, the habit of fast food consumption has developed (Abdullah *et al.*, 2017).

Habib *et al.*, (2011) reported that 84% of Malaysian students' consumed fast food. Gan *et al.*, (2011), found that university students are often unable to meet the recommended nutrient intakes. Snacking habits of high fat and calorie foods, tending to skip breakfast and they consume lots of fast food regularly. Bipasha & Goon (2014) also reported that university students, in

particular tend to have a high frequency of eating out and were likely to pick fast food when they eat out.

Alizadeh & Ghabili (2008), showed students tended to skip their meals, especially breakfast and frequently consumed fast food. Gan *et al.*, (2011), reported that many students frequently skipped breakfast skipped at least one meal daily. Javaid & Munir (2018) found that students who skip breakfast showed disruptive and distracting behaviour in the classroom.

Driskell *et al.*, (2006) and Gan *et al.*, (2011) reported that university students tend to eat fast food at least once weekly. Living in college also restrict students from cooking, thus increase the frequency of them ordering food online given the fact that fast foods usually quick and always ready-to-go, many students opted for fast food rather than nutritious food. Student dietary intake changed during college years resulting in increased consumption of fast food (Alfawaz, 2012; Fraser *et al.*, 2010).

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Excessive consumption of fast food is often associated with increased risk of non-communicable diseases, including diabetes and hypertension. Fast food is typically high in fat, sodium, and sugar but low in fibre and deficient in essential micronutrients (Cheong *et al.*, 2019). Moreover, fast food tends to be consumed in large amounts and accompanied by carbonated beverages that may result in excessive calorie intake and afterwards increase the risk of overweight and obesity (Cheong *et al.*, 2019). Radzi *et al.*, (2019) found that obesity is associated with a higher risk of developing cardiovascular disease, metabolic syndrome and type II diabetes. The high amount of fat in fast food and lack of physical activities can rise to unhealthy and excessive weight (Abdullah *et al.*, 2015).

Over-nutrition can lead to overweight and obesity (WHO, 2012). Based on the National Health and Morbidity Survey, (2015) classifications, the national prevalence of overweight was 33.4%, and the prevalence of obesity was 30.6%. Thus, this study was done to identify food access and fast-food consumption behaviour among Health Sciences students at UiTM Puncak Alam.

METHODOLOGY

Study Design

A cross-sectional design was use in this study.

Study Location

This study was conducted at the Faculty of Health Sciences in UiTM Selangor Puncak Alam Campus at Bandar Puncak Alam, Selangor.

Sample

Non-random probability sampling design which is used in this study is purposive convenience sampling. The inclusion criteria were Year 2 and Year 3 full-time degree students from Faculty of Health Sciences. Exclusion criteria students who were among first and fourth-year full time and part time degree, diploma and non-health science students and in medical or study leave.

Sample Size Calculation

A sample size was calculated from the population of 868 Year 2 and Year 3 full-time degree students by using formula (Krejcie & Morgan, 1970) and considered adequate based on “rule of thumb” with 5% margin of error, 95% confidence interval (CI), 50% population proportion and 868 of the population size. Finally, the sample required for this study was 267.

Instrument

The questionnaire was adapted from the research of Fast Food Consumption and Obesity (Abdullah *et al.*, 2015). The questionnaires consisted of three parts, which were part A on demographic data, part B on food access and part C on fast food consumption. Part A consisted of seven items which were gender, year of study, course programs, weight, height, Body Mass Index (BMI) and transportation problems of respondents. Part B was food access questionnaire which consists of 7 questions. Question 1, 2, 4 and 5 used multiple-choice questions by choosing only one answer appropriately. For question 3, respondents need to answer all questions by ticking in the provided table. Question 6 and 7 were using Likert scale questions. Part C was on fast food consumption behavior, consists of 14 questions regarding fast food consumption and the reason why students visit fast food restaurants. Question 1 to 13 were using dichotomous questions (Yes/No) while question 14 using Likert scale (usually, sometimes, never/rarely). Pilot study was done, and the Cronbach’s alpha was found to highly reliable (α : 0.754).

Data Collection

Data was collected once ethical approval from UiTM ethic committee, from December 2019 until February 2020. The researchers approached second and third-year health sciences students to answer questionnaires during their learning and lectures in faculty. The information about the objectives of the study was given. Then, informed consent and questionnaires had been given to respondents once they agree to participate. The time allocated for respondents to answer the questionnaires was around 15 to 20 minutes. Questionnaires were collected immediately after respondents finished answering.

Data Analysis

Statistical Packages the Social Sciences (SPSS) version 25 was used to analyse the data. Descriptive statistical analysis was used for determining results of demographic data. Descriptive analysis also used to identify food access and fast food consumption behaviour among Health Sciences students at UiTM Puncak Alam. Pearson Chi-Square was used to find the relationship between transportation problem with fast food consumption behaviour and relationship between fast food consumption behaviour with BMI.

Ethical Approval

Approval from the UiTM Ethic Committee was

obtained on 3 Sept 2019 before the study started. Respondents were given written consent prior to the commencement of the study.

RESULTS

Demographic Data

Table 1 show that majority of the respondents were female students, 220 (82.5%). In term year of study, 167 (62.5%) students from third year and 100 (37.5%) students from second year. Majority of students 167 (62.5%) were having normal weight.

Table 1: Frequency Distribution of Students' Characteristics (n=267)

| Characteristic Demographic | Frequencies | Percent (%) |
|---|-------------|-------------|
| Gender | | |
| Male | 47 | 17.6 |
| Female | 220 | 82.4 |
| Year of Study | | |
| Year 2 | 100 | 37.5 |
| Year 3 | 167 | 62.5 |
| BMI | | |
| Underweight | 38 | 14.2 |
| Normal | 167 | 62.5 |
| Overweight | 53 | 19.9 |
| Obese | 9 | 3.4 |
| Do you have Transportation Problems? | | |
| Has problem | 159 | 59.6 |
| No problems | 108 | 40.4 |

Food access among Health Sciences students at UiTM Puncak Alam

This study found that 115 (43.1%) of respondents were “taking 2 serves of vegetables every day”. However, 19 (7.1%) respondents who “don’t eat vegetables”. Second question was on “Serves of fruits you usually eat every day”, majority of respondents 172 (64.4%) reported that take “Less than 1 serve”. Question three was on “Choose places to shop for fresh fruits and vegetables” 115 (43.1%) of the respondents preferred to shop for fresh fruits and vegetables within their community. While 28 (10.5%) of the respondents “did not buy fresh fruits and vegetables”. Question four was on “Main reason does not buy fresh fruits and vegetables within community or neighbourhood” 49 (18.4%) of the respondents reported that those stores had poor quality fruits and vegetables. Meanwhile, 8(3%) of the respondents reported that “stores having poor quality

service” and 8(3%) also reported that “students do not eat fruits and vegetables”.

Question five was “It is easy to find fresh fruits and vegetables within community or neighbourhood.” 120 (44.9%) agreed to the statement while 54 (20.0%) students were strongly agreed. For the last question “Often is transportation become a problem in getting fresh fruits and vegetables”, 79 (29.6%) of the respondents reported it happened “sometimes” while 37 (13.9%) of the respondents reported that transportation “always” become a problem.

Fast food consumption behaviour of health science students in UiTM Puncak Alam

First question was on “Frequency eating fast food”, majority of the respondents 148(55.4%) consumed fast food multiple times per month. Question two was on “Main reason why respondents prefer fast food”, 99 (37.1%) of respondents chose fast foods because it was convenient and 80 (31.0%) picked taste of the food as reason. Other than that, cost of the food 29 (10.9%), sociability 37 (13.9%) and fast food outlets conveniently located 22 (8.2%). Question three was on “Usual time eat fast food”, 83 (31.1%) respondents eat during dinner, while 76 (28.5%) respondents eat during lunch.

Question four was on “type of fast food preference”, majority of the respondents 148 (55.4%) preferred to have meal package that sold in fast food outlets. The rest of respondents picked individual item or ‘a la carte’ 60 (22.5%), different item from the various menu 56 (21.0%) and other type of order 3 (1.1%). Question five was on “order super-size” with majority of respondents 194 (72.7%) did not order the super-size menu, meanwhile 57 (21.3%) of the respondents would have super-size. Question six was question on “eat in the restaurant or take out” 133 (49.8%) of the respondents preferred to take-outs and 115 (43.1%) of the respondents prefer to dine-in. Question seven was on “Where do you usually eat your take-out” 100 (37.5%) eat at home, 23 (8.6%) of the respondents eat in the car and 10 (3.7%) choose other places. Question eight was “Go to fast food restaurant with?”, 95 (35.6%) of the respondents go with friends (10.5%) and 4 (1.5%) go alone. Question nine was on “Is the type of nutritional information available at the fast-food restaurants you usually go to?” majority of the respondents 147 (55.1%) reported present, while 64 (24.0%) of the respondents reported never noticed. Question ten was on “Ever read nutritional information” only 107 (40.1%) of the respondents read. Question 11 was on “Nutritional information help to decide” only 47

(17.6%) of the respondents’ reported “sometimes”. Question 12 was on “Likely to order healthy meals” majority of the respondents 143 (53.6%) reported “Somewhat likely”. Last question “Distance resident from fast food restaurant” majority of the respondents 186 (69.7%) reported that 0-5km.

Relationship between transportation problems and fast food consumption

Table 2 showed the relationship between transportation problem and fast food consumption. The result showed that there was no significant relationship between transportation problems and frequency of fast food consumption as p -value >0.05 which $p=0.080$.

Table 2: Relationship between Food Access and Fast Food Consumption (N=267)

| Variables | Transportation, N (%) problem | | X ² (df) | p value |
|------------------------------------|----------------------------------|-------------|---------------------|---------|
| | Has problem | No problem | | |
| Frequency of fast-food consumption | | | 5.050 (2) | *0.080 |
| Per week | 25 (9.4%) | 29 (10.9%) | | |
| Per month | 92 (34.5%) | 56 (21.0%) | | |
| Less than once per month | 42 (15.7%) | 23 (8.6%) | | |
| Total | 159 (59.6%) | 108 (40.4%) | | |

*chi square test

Relationship between fast food consumption behavior with Body Mass Index (BMI).

Table 3 showed there was no significant association between fast food consumption behaviour among Health Sciences students with BMI as p -value >0.05 which $p=0.715$.

Table 3: Relationship between BMI with Frequency of Health Sciences Students Consumed Fast Food (n=267)

| Characteristics | BMI, N (%) | | | X ² (df) | p-value |
|---|-------------|------------|------------|---------------------|---------|
| | Underweight | Normal | Overweight | | |
| Frequency of visiting fast food restaurant: | | | | 2.106 (4) | *0.716 |
| Per week | 9 (3.4) | 34 (12.7) | 11 (4.1) | | |
| Per month | 20 (7.5) | 96 (36.0) | 32 (12.0) | | |
| Less once than per month | 9 (3.4) | 37 (13.9) | 19 (7.1) | | |
| Total | 38 (14.2) | 167 (62.5) | 62 (23.2) | | |

*chi square test

DISCUSSION

Food access among Health Sciences students at UiTM Puncak Alam

The finding from this study showed that most of the

respondents 115 (43.1%), consumed two servings of vegetables followed by 106 (39.7%) respondents who eat less than one serving every day. This showed that more than half of the respondents consumed less vegetables per day. This trend also could be seen in fruits consumption where 172 (64.4%) of respondents eat less than one serving per day. Similar with Gan *et al.*, (2011), who reported that 143 (47.7%) universities students in Malaysia consumed only one serving of vegetable every day. Bernardo *et al.*, (2017) also reported that the intake of vegetables and fruits among university students were rather low than the recommended serving per day. The World Health Organisation (WHO, 2005) recommended adults to consume at least 400 gm or equivalent to five servings of vegetables and fruits daily to reduce the risk of chronic diseases.

The main reason for not buying fresh fruits and vegetables for 49 (18.4%) respondents in this study were due to the poor quality of fruits and vegetables. On top of that, 39 (14.6%) respondents reported a high price as the second reason not to buy fresh vegetables and fruits. Since respondents in this study were university students, money problems can be the reason for respondents to not buy fruits. Similar with Pulz *et al.*, (2017), statement that healthy food was expensive, and the access was difficult, making it hard for live a healthy lifestyle.

Access to sources of food, students may need a medium of transportation such as public bus, cars, and motorbike. Among 267 respondents, 79 (29.6%) of them reported that sometimes it was difficult to find transportations. Living in college require respondents to follow the bus schedule, so they cannot go out to find fresh fruits.

Fast food consumption behaviour among Health Sciences students UiTM Puncak Alam

The results of this study revealed that more than half of the respondents 148 (55.4%) eat fast foods every month. Similar with previous study in Malaysia, where most of the respondents aged 24 or younger consumed fast food monthly (Abdullah *et al.*, 2015; Mat *et al.*, 2016). Moreover, Gan *et al.*, (2011), stated that 52.4% and 38.4% of female and male students respectively eat at a fast food restaurant at least one to three times monthly.

There were a lot of reasons that affected fast food consumption. In this study, about 99 (37.1%) of respondents chose convenience as the main reason to eat fast food. Dunn *et al.*, (2011), reported that convenience influenced the respondents the most. Similar with

Prabhu and Narayan (2015), students choose fast food because of quick service and convenience. This may be because of students' busy lifestyles and the prohibition to cook in the residential college areas. Thus, food delivery was the most convenient way to sort out the issue. Habib *et al.*, (2011) stated that the convenience of the restaurants and easily accessibility were prime criteria for students to choose fast foods outlets. Onurlubaş & Yilmaz (2013), found a similar outcome that accessibility, service speed, menu variety and availability of special products play a significant role towards youngsters.

The second common reason was the taste of food. Habib *et al.*, (2011) also reported that taste of food, safety and the rapidity of preparation were the main factors for choosing a certain fast food restaurant. Anderson *et al.*, (2012), also found that among 64% of the respondents who eat fast food at least once per month agree that fast food outlet was quick and convenient, 16% chose taste of the food.

In this study setting Faculty Health Sciences, Puncak Alam was surround with fast food restaurants such as McDonald's, Kentucky Fried Chicken (KFC) and Pizza Hut which were available nearby within 0-5 kilometre (km) from the campus and residential college. According to Abraham *et al.*, (2018), the place of study was located in an area with a variety of fast food options making it easier or more likely for them to consume fast food. Bernsdorf *et al.*, (2017) stated that there was relation between fast food accessibility and intake. The possibility increased when fast food outlet was near to the accommodation area because it was easier to access. Likewise, the consumption decreased when the distance increased (up to four km). However, this was not a problem for people who have transportations (Bernsdorf *et al.*, 2017). An increasing number of fast food outlets also made them easy to access within a short distance (Habib *et al.*, 2011).

The relationship between transportation problems and fast food consumption behaviour among Health Sciences students at UiTM Puncak Alam

This study reported that for majority of the respondents transportations become problem since students who stayed in hostel were not allowed to bring their own transport. Dhillon *et al.*, (2019), reported that limited transportation options for out-of-campus grocery stores and food joints were also perceived as barrier to food access. Bernsdorf *et al.*, (2017), reported

that accessibility to fast food outlet also depends on the mobility factors such as car and other public transport services. Caspi *et al.*, (2012) stated that though accessibility was a component, the availability of public services has been legally recognised as part of food access.

In this study there was no relationship between transportation problems with fast food consumption behaviour among Health science students at UiTM Puncak Alam. The reason can be as most of the fast food restaurant provides delivery services. Abdullah *et al.*, (2015), reported that most of the fast food franchise provides delivery services to the accommodation area of the students; thus, this kind of facilities made fast food easy to access. Since majority of respondents in this study have internet access so it is easier for them to make online order. Even though they don't have transport but still can ask for delivery services through apps like grab food, food panda and others.

Relationship between fast food consumption behaviour with Body Mass Index (BMI) among Health Sciences students at UiTM Puncak Alam.

The result showed that majority of Health Science students in Year 2 and 3 have an average normal BMI. Moreover, in this study, 36.0% of the respondents with normal BMI went to a fast food restaurant every month. Besides, respondents were among the group who frequently consume fast foods compared to other groups such as obese. From that, it indicates that there was no relation ($p=0.715$) between upper BMI and fast food consumption.

A study by Fournier *et al.*, (2016) which was done in Malaysia, also showed a similar result, where 9.8% and 9.5% of the participants are underweight and obese respectively, and another 58.7% have normal weight. Similarly, the results reported no relationship between BMI and frequency of eating out ($p=0.5037$).

These results seem to be contradicted by a study by Al-Otaibi & Basuny (2015), among female university students in Saudi Arabia. There was a relationship between BMI and the frequency of students visiting fast food franchises ($p=0.05$). About 56% of the students visit fast food twice or more per week are overweight /obese.

Another thing to consider is the sample population in both studies study. This study population is from Health and Sciences Faculty, which made them conscious of their own BMI and food consumption.

CONCLUSION

Availability of transportation influences respondents accesses to fresh foods. Fast food consumption behaviour of the students was influenced by several factors such as the taste of the food, and location of fast food restaurant. There was no relationship between transportation problem and fast food consumption behaviour, due to advance in technology food can be ordered online and can be delivered by the restaurant. Lastly, there was no significant relationship between fast food consumption behaviour and BMI since health science students were much aware about the effect of

obesity. Future research should focus more on the long-term effect of fast food consumption behaviour on students' academic performance and health related quality of life.

Conflict of Interest

The authors declare that there is no conflict of interests.

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