

# The Prevalence of Fast-food Consumption among University Students in the Northern Area of Malaysia

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## Abstract

Fast food has become popular on a global scale. This study aims to investigate the prevalence of fast-food consumption among university students. A total of 364 students from Universiti Teknologi MARA, Perlis branch were recruited to participate in this study. Data collection was conducted with a modified version of the standard Nelson's questionnaire. In this study, the prevalence described by percentage shows that 32.7% of participants consume fast food 2-3 times per month. As for the type of food consumption, most participants preferred bakeries or doughnuts (64.6%), and most of them are female. The second rank was pizza/restaurant fast food type, Asian fast food, ice cream and burger shops. The last rank was the sandwich shop type of fast food. These prevalence results provided a descriptive analysis of the frequency of fast food consumption, specifically in this geographic area. It also provided statistics about the type of fast food being consumed by the participants. A comprehensive demographic background and fast food consumption behavior should be focus of the next study.

**Keywords:** Prevalence, Fast Food Consumption, University Students, Northern Area of Malaysia

## Introduction

Fast food is very popular these days and contains various ingredients that can disrupt the body's system. There are several definitions of fast food based on previous studies. Fast food is prepared with uniform ingredients through various processing and production methods (Benajiba, 2016). It can also be considered to be prepared and consumed quickly without paying attention to the meaning or quality of the food. A previous study found that 72.4% of 300 students at a university in Qom, Iran, consumed fast food at least once a month and 34% consumed it at least once a week (Mohammadbeigi et al., 2018). A study in Malaysia found that 81.1% of 2447 adolescents in Negeri Sembilan consumed fast food at least once a week (Awaluddin, 2018). Another finding states that the high prevalence of fast food consumption of 1.6 (mean) times per week over one year led to weight gain among preschool children in

New Hampshire, United States (Emond et al., 2020). The study by Mohammadbeigi et al (2018) reported that there was an association with overweight and obesity among university students who frequently consumed fast food sandwiches, fried chicken and pizza in the past month (Mohammadbeigi et al., 2018). Fast food can also harm brain well-being by destroying sections involved in memory tasks and lowering levels of brain-derived neurotrophic factors. Therefore, dementia and Alzheimer's disease are more likely to occur (Popkin, 2010). In conclusion, all studies show that the consumption of fast food has negative effects on human bodily functions. Fast food is trendy among university students and pre-school children. Consumption of fast food was uncontrollable among them and may be associated with adverse health status and increased body mass index, leading to obesity. An earlier study was conducted at Universiti Teknologi MARA. However, it focused on energy drinks and not fast food (Sharoni et al., 2021).

Fast food is characterised by large portion sizes, high levels of saturated fat and added sugars (Emond et al., 2020), high energy content, salt and sugar, and low levels of micronutrients and fibre (Feeley et al., 2009). From the characteristics of fast food, it appears that fast food is harmful to the human body and can lead to chronic diseases and an increase in body mass index. However, the previous study lacks information on the prevalence and impact of fast food consumption on body mass index. The previous study only focused on the effects of fast food consumption on body mass index among university students in Iran and children in the United States. Moreover, the study was conducted at Universiti Teknologi MARA, but it only focused on energy drinks and not fast food (Sharoni et al., 2021). Therefore, this study aims to:

- investigate the prevalence of fast food consumption on body mass index among students at Universiti Teknologi MARA in Malaysia.
- -investigate the effect of fast food consumption on the body mass index among Universiti Teknologi MARA students.

## Methodology

This survey was conducted among 364 students of Universiti Teknologi MARA (UiTM), Perlis, who were randomly selected and studying at UiTM Perlis. The sample size was calculated from the population of students at UiTM, Perlis, using the table of (Krejcie & Morgan, 1970). The study participants were selected using the simple random sampling method. A consent form, simple instructions and questionnaire were distributed to the 364 respondents studying in UiTM, Arau Branch through Google Forms, WhatsApp and face to face meetings with the respondents to distribute the Google Form by scanning the code QR. In addition, the Ethics Committee of UiTM approved the study protocol. Data collection was conducted using a modified version of Nelson's standard questionnaire (Nelson and Lytle, 2009). The reliability and validity of the questionnaire was assessed by them and found to be a reliable measure with adequate validity. Moreover, the content validity of the modified version of the questionnaire was changed due to the cultural and dietary differences of the Iranian population. In addition, the reliability of the questionnaire was assessed using Cronbach's alpha and estimated to be 0.733. The primary outcomes of the questionnaire were fast food consumption, type of fast food and frequency of consumption. The variables evaluated for fast food consumption were selected based on common items used in UiTM Perlis due to cultural and religious settings, such as different types of traditional fast food, sandwiches, pizza, Asian fast food bakeries or donut shops, ice cream and burger shop fast food. Data on obesity indices such as height and weight to calculate BMI were collected.

Students' weight and height were also measured through self-report. BMI was calculated using a standard formula.

## Results

Results are presented to describe the prevalence of fast food consumption among students at a university in the northern region of Peninsular Malaysia. The prevalence of fast food consumption was highest in the 2-3 times per month category (119; 32.7%). Thus, the prevalence of fast food consumption was high only in the 2-3 times per month category among the students of Universiti Teknologi MARA. The participants were male ( $n = 177$ ) and female ( $n = 187$ ). The mean age was  $M = 20.3 \pm 1.48$  and the body mass index (BMI) was  $M = 22.53 \pm 5.78$ .

Table 1

*Prevalence of fast-food consumption*

Variables	Frequency	Percentage (%)
<b>Frequency of fast food consumption</b>		
Never or rarely	67	18.4
One time per month	46	12.6
1-2 times per month	40	11
2-3 times per month	119	32.7
3-4 times per month	43	11.8
5-6 times per month	10	2.7
One time per day	16	4.4
Two times per day	15	4.1
Three times or more per day	8	2.2
Total	364	100
<b>Frequency of fast food consumption by males</b>		
Never or rarely	31	16.6
One time per month	22	11.8
1-2 times per month	25	13.4
2-3 times per month	54	28.9
3-4 times per month	23	13.4
5-6 times per month	6	3.2
One time per day	7	3.7
Two times per day	6	3.2
Three times or more per day	3	1.6
Total	177	48.6
<b>Frequency of fast food consumption by females</b>		
Never or rarely	36	19.3
One time per month	24	12.8
1-2 times per month	15	8
2-3 times per month	65	34.8

3-4 times per month	20	10.7
5-6 times per month	4	2.1
One time per day	9	4.8
Two times per day	9	4.8
Three times or more per day	5	2.7
Total	187	51.4

Table 2

*Descriptive analysis of the type of fast-food consumption based on gender*

Type of fast food consumption	Male (n)	Female (n)	Total	Percentage (%)
Sandwich / Sub shop fast food	82	91	173	47.5
Pizza parlour / Restaurant fast food	102	101	203	55.8
Asian fast food	97	101	198	54.4
Bakery / Donut shop fast food	110	125	235	64.6
Ice cream and burger shop fast food	94	94	188	51.6

Table 1 shows that 32.7% of the participants consumed fast food 2-3 times per month. In terms of gender, women consumed more than men (34.8% vs. 28.9%). Those who consumed three or more times a day accounted for only 2.2% of the 364 participants. In terms of type of consumption (Table 2), most participants (64.6%), most of whom were female, preferred bakery or donut type fast food. Pizza/restaurant fast food, Asian fast food, ice cream and burger shop fast food came second, and sandwich shop fast food came last.

## Discussion

This study shows that 81.6% of the respondents consume fast food at least once a month. In addition, this study also shows the following results: Sandwich or Sub Shop Fast Food (47%), Pizza (55.8%), Asian Fast Food (54.4%), Bakery and Donut Shop Fast Food (64.6%) and Ice Cream and Burger Shop Fast Food (51.1%). A study among students in Qom, Iran, found a prevalence rate of 72.4% for consuming fast food at least once in the current month and 34% for at least one type of fast food in the current week. This cross-sectional study was conducted on students from two different universities in Qom, with one hundred and fifty students from each university. Sandwiches (44.4%), pizza (39.7%) and fried chicken (13.8%) were the most popular fast food items (Mohammadbeigi et al., 2018). Previous study and this study showed high prevalence registered at least once a week. This study showed a high prevalence of sandwiches and pizza compared to the study in Iran. However, the other type of fast food from the study in Iran is not the same as in this study, so a comparison is not possible.

A study in Kuwait of 421 university students found that 5.8% of all respondents reported consuming fast food more than once a day, and 16.6% consumed it once a day. In addition, 13% of the students consumed it once a month (Shahban and Alkazemi, 2019). Based on this study, our participants consist of 364 female and male students. They consumed fast food once a month 12.6%, 2-3 times a month 32.7%, 1-2 times a week 11%, 3-4 times a week 11.8%, 5-6 times a week 2.7%, once a day 4.4%, twice a day 4.1% and three times a day 2.2%. This study showed a high prevalence of more than one time per day compared to previous studies. This study also showed a low prevalence of one time per day compared to the previous study.

In addition, this study showed that only a small number of students fell into the 'once a month' category compared to the previous study.

The study from Kuwait also shows that female students (16.8%) consume more fast food once a month than male students (4.4%). However, more male students (7.1%) consumed more once a week and once a year than female students (1.8%): male students (4.4%) and female students (1.1%). It is also reported that more male students (12.1%) do not consume fast food compared to female students (4.4%) (Shahban and Alkazemi, 2019). The present study shows that female students (12.8%) are more likely than male students (11.8%) to consume fast food once a month. It is also found that females (19.3%) do not consume fast food more than males (16.6%), which contradicts the previous study. The discussion of this study is based on only two pieces of evidence from previous studies.

According to a study in New Hampshire, United States, among preschool-aged children (Emond et al., 2020). This study showed some types of fast food that the children had consumed in fast food restaurants in the seven days before the study was conducted, namely coffee or donut, burger, pizza, chicken, sandwich, ice cream and taco. Of all the types of fast food mentioned in this study, only 2 types of fast food are preferred by the children, namely coffee or donut and burger (Emond et al., 2020). Another study conducted on university students in Iran found that the subjects preferred sandwich, pizza and fried chicken in the last month. At the same time, a reliability test was also conducted for the fast food questionnaire to ensure that the type of fast food corresponds to the cultural and religious realities in Iran. The reliability test showed that only 5 types of fast food had a higher reliability value, namely sandwich, pizza, fried chicken, fried potatoes and hotdog (Mohammadbeigi et al., 2018). The results of this study show that traditional fast food (McDonald's, Arby's, Wendy's and White Castle), pizza, Asian fast food, fast food from bakeries or donut shops and fast food from ice cream parlours and burger shops are consumed regularly, with the percentage of these fast foods exceeding 50%. This study also conducts a reliability test for the fast food questionnaire to ensure that the type of fast food corresponds to the cultural and religious realities of the UiTM students. The reliability test shows that only 6 types of fast food have a higher reliability value, namely traditional fast food (McDonald's, Arby's, Wendy's and White Castle), sandwich or sub shop fast food, pizza or restaurant fast food, Asian fast food, bakery or donut shop fast food and ice cream and burger shop fast food. The information from the New Hampshire study and this study are similar in the type of fast food, namely pizza and ice cream. In the study from Iran and this study, the type of fast food was similar, namely pizza. It can be concluded that the most popular type of fast food from the three studies was pizza.

## Conclusion

In summary, these prevalence results provide a descriptive analysis of the prevalence of fast food consumption specifically in this geographical area. They also provided statistics on the types of fast foods consumed by participants. A comprehensive demographic background and eating patterns, particularly in relation to fast food consumption, should be the focus of future work.

In addition, the results of this study provided a better understanding of the effects of fast food consumption on body mass index, which plays an important role in promoting a healthy body, especially for nutritionists, physicians, athletes and coaches. Understanding the effects of fast food consumption on body mass index has helped to increase the knowledge of nutritionists and doctors, control obesity in the population, reduce the number of patients with non-communicable diseases and increase the life expectancy of people by providing

people with the knowledge about this study, especially the negative effects of fast food consumption. At the same time, the study could also help increase the knowledge of coaches and athletes, which can help them improve athletic performance by limiting fast food intake to maintain the desire for a healthy body weight and body.

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