Study on Relationship of Socio Demographic, Knowledge, Attitude and Practice on Fast Food Intake Among University of Cyberjaya Medical Students

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Abstract

Background and objectives: Fast food is defined as food which can be cooked quickly or is ready made to eat. Fast food restaurants have been mushrooming in all around the world even though fast food has been well known to have high amount of lipid, salt, sugar and food additives. Therefore, the present study aims to investigate the relationship between fast food consumption in terms of socio demographic, knowledge, attitude and practice among medical students of University of Cyberjaya.

Methods: A cross sectional study was carried out in Faculty of Medicine students from University of Cyberjaya (UoC) using an online form using convenience sampling method. Data was analyzed using JASP software.

Results: Overall, out of 393 respondents, the majority of them were female (66.9%), single (99.2%), Malay (53.4%) and Malaysian (96.7%). Almost half of the respondents take fast food 0 to 5 times per month (53.9%) and most frequently have it together with friends (43.8%). All of the respondents have a high level of knowledge on fast food and 91.6% of the respondents have a positive attitude for fast food. Our study also found that there is a significant association between knowledge score and attitude score about fast food and intake pattern ($p < 0.001$, $p = 0.008$ respectively). We also found that race and estimated parent's/caretaker/own monthly income have significant association with frequency of fast food intake ($p = 0.003$, $p = 0.002$ respectively). Besides, our study identified the significant factors that attract university students towards fast food is fast food being the first thought that comes into student's minds and speed of fast food preparation is fast ($p < 0.001$, $p < 0.001$ respectively).

Conclusion: The study result showed that the predominant factor that influences the university students to choose fast food at the very first line is their socio demographic factors.

Keywords: Fast food, medical students, socio demographic factors

Introduction

Fast food is defined as food which can be cooked quickly or is ready made to eat. These fast foods are such as hamburgers, pizza, Kentucky Fried Chicken (KFC) and many more. Fast food restaurants have

been mushrooming all around the world even though fast food has been well known to have high amount of lipids, salt, sugar and food additives. There were marked changes in dietary habits in Malaysian during the 20th century due to its rapid economic growth causing the fast-food industry to be expanding rapidly since then. The Department of Statistics Malaysia discovered that in the early 21st century, there were less than 1700 fast food restaurants in Malaysia in 2010 but it has increased to almost 3000 outlets within 5 years.

It is well documented that fast food intake among adolescents in Malaysia is very high and it is affected by socio demographic factors. A study by Cheong, et al. (2021) shows that there is a difference in fast food intake among different races in which Malay adolescents (15.1%) take fast food more frequently compared with Indian (10.7%) and Chinese adolescents (7.3%). Besides, place of living also plays a part in determining regularity of fast food intake as adolescents who live in the Northern zone have lower fast food intake as opposed to those who stay in other zones. A study from French, et al. (2021) asserts that fast food intake among students was influenced by parental employment status and student's likelihood of working for pay.

There is also research showing that university students' knowledge on fast food is high. This can be seen as they agree that high intake of fast food is harmful because it contains high amount of calories [10]. University students who eat fast food frequently also tend to take less fruits, vegetables and [4]. This study also reported that both female and male students who visit fast food restaurants more than 3 times per week care less regarding their health wellbeing compared to those who consume fast food less frequently. Meat-based fast food suit most of the adolescents' taste buds causing them to favour fast food as suggested in the study of Cheong, et al. (2021). These studies strongly reflect that students who frequently eat fast food have lower nutritional quality diets than who do not frequently eat fast food.

University students show a positive attitude towards fast food intake. There are many studies which identified several factors which attract university students to consume fast food frequently. One of the studies found out that delicious fast food taste, attractive and creative presentation, large meal packages which can be enough to satisfy one's hunger, attractive environment and clean surroundings of fast food outlets are the attracting factors for public university students to choose fast food [10]. Another study reveals students choose to consume fast food due to student employment, unavailability of healthy food at home and television advertisement [4].

Previous studies have shown that adolescents who take fast food frequently were those who enjoy taking high calorie meals with low fiber intake. This type of dietary habit if practiced by adolescents, in the long run, will increase the likelihood of being obese and many other types of chronic diseases. Hence, it is important to identify the pattern of fast-food intake among adolescents who are university students in Malaysia.

Therefore, our study targets to investigate the relationship between fast food consumption with socio demographic, knowledge, attitude and practice among medical students of University of Cyberjaya. The outcomes and findings of this study are hoped to be sufficient to contribute data in the effort of encouraging healthy dietary habits among university students.

Objectives of the study

The objectives of the study are to:

- Identify the socio demographic, knowledge, attitude and practices related to fast food intake among University of Cyberjaya medical students.

- Correlate knowledge about fast food health risk and intake pattern.
- Determine the relationship between socio demographic factors and fast food intake pattern among University of Cyberjaya medical students.
- Identify the factors that attract university students towards fast food.

Hypotheses

Ho: There will be no significant association between socio demographic, knowledge, attitude and practice on fast food intake

Ha: There will be significant association between socio demographic, knowledge, attitude and practice on fast food intake

Methodology

This research was carried out as a cross sectional study using university students in Malaysia as reference population. The sample population was medical students from Faculty of Medicine in University of Cyberjaya. The inclusion criteria were all current students of University of Cyberjaya from Faculty of Medicine (FOM) aged more than 18 years old, both Malaysian and non-Malaysian students, the exclusion criteria was students who did not understand English. The non-response criterion was participants who failed or refused to complete questionnaire are non-response. A total of 393 participants were needed for the study to give significant results. Convenience sampling method was used.

Data collection, research tool, parameters of interest:

Data was collected through an online questionnaire through Google form. Respondents were required to open their email or Whatsapp and press the link provided to assess the Google form. Then, respondents were required to answer all of the questions in the questionnaire honestly and completely which took about 10 minutes and press the "Submit" button to submit their response.

Our questionnaire was adopted and modified from previous literature [10]. There were different parts and each part was further divided into subsections.

First part: Consents form for this study

Second part: Socio demographic information: This includes questions regarding respondents' place of stay, age, gender, race, highest education level, marital status, current year of studies, nationalities, and estimated parent's/caretaker/own monthly income.

Third part: Fast food intake: This included questions regarding duration of last visit to fast food outlet and frequency of visiting fast food restaurant in a month.

Fourth part: Participants' knowledge on fast food: This included questions regarding fast food nutritive value (salt, fat, calories, and sugar) and complications of high fast food intake (stroke, diabetes mellitus, heart disease, obesity). It was scored based on Likert scale ranging from 1 to 5 in which 1 denotes strongly disagree, 2 denotes disagree, 3 denotes neither agree nor disagree, 4 denotes agree and 5 denotes strongly agree. Respondents' level of knowledge was categorized into high level or low level of knowledge. This was done by adding all 9 statements and converting it into percentage. The percentage of 70% and above would indicate respondents having high knowledge about fast food, while a percentage lower than 70% would indicate low level of knowledge about fast food [12].

Fifth part: Participants' attitude on fast food: This included questions regarding fast food restaurants' environment, food portions and locations. Respondents' attitude towards fast food was categorized into positive attitude and negative attitude. This was done by adding all 8 statements and converting it into percentage. The percentage of 70% and above would indicate respondents having a positive attitude towards fast food, while a percentage lower than 70% would indicate a negative attitude towards fast food [12]. It was scored based on Likert scale ranging from 1 to 5 in which 1 denotes strongly disagree, 2 denotes disagree, 3 denotes neither agree nor disagree, 4 denotes agree and 5 denotes strongly agree.

Data analysis:

Data was analyzed through JASP version 14 software. Descriptive analysis was done for us to determine socio demographic factors, knowledge, attitude and practice among UoC's Faculty of Medicine students in their respective years.

To reduce recall bias, we arranged the questions in chronological order. This was done by asking respondents when was their last visit first before asking them what was the frequency of visiting fast food restaurants in the past one month. Besides, we used a short time interval between events under study, which was one month, to reduce recall bias. We also included questions such as who they usually have fast food with and which fast food restaurant they usually visit. This was because this experience may have a memorable experience causing them to remember it which could reduce recall bias.

Result

Our study obtained a total of 393 respondents from medical students of University of Cyberjaya with a 42.4% response rate.

Table 1: Socio demographic characteristics of the respondents

Respondents characteristics	Number (n)	Percentage (%)
Currently reside		
Sepang	241	61.3
Lembah Klang	36	9.2
Putrajaya	11	2.8
W.P. Kuala Lumpur	24	6.1
Other:	81	20.6
Age		
19-21 years old	134	39.1
22-24 years old	215	54.7
25-27 years old	40	10.2
28-30 years old	4	1.0

Gender		
Male	130	33.1
Female	263	66.9
Race		
Malay	210	53.4
Chinese	50	12.7
Indian	125	31.8
Bumiputra	1	0.3
Others	7	1.8
Highest education level		
Secondary education	7	1.8
Foundation, Matriculation, STPM, Undergraduate	380	96.7
Post-graduate	6	1.5
Marital status		
Single	390	99.2
Married	3	0.8
Divorced/widowed	0	0.0
Current year of studies		
1st year	77	19.6
2nd year	79	20.1
3rd year	116	29.5
4th year	69	17.6
5th year	52	13.2
Nationalities		
Malaysian	380	96.7

International	13	3.3
Estimated parent's/caretaker/own monthly income		
Below RM 2,000	18	4.6
RM 2,001-4,000	52	13.2
RM 4,001-6,000	108	27.5
RM 6,001-8,000	129	32.8
RM 8,001-10,000	50	12.7
Above RM 10,000	36	9.2

Our study obtained a total of 393 respondents from medical students of University of Cyberjaya. Most of the respondents resided in Sepang (61.3%) and were Malaysians (96.7%). Majority aged between 22 and 24 years old (54.7%). Female respondents occupied more than half (66.9%) of our overall respondents. Besides, 96.7% of our respondents were foundation, matriculation, STPM and undergraduate students, single (99.2%) and were third year medical students (29.5%). The estimated parent's/caretaker/own monthly income were RM 6,001-8,000 (32.8%).

Table 2: Fast food intake of respondents in this study

	Number (n)	**Percentage (%)**
When is your last visit to the fast food restaurant?		
Less than a week	75	19.1
1-2 weeks ago	63	16.0
3-4 weeks ago	134	34.1
Over 4 weeks	121	30.8
Frequency of visiting fast food restaurants in the past one month?		
0-5 times	212	53.9
6-10 times	115	29.3
11-15 times	51	13.0
More than 15 times	12	3.8
Who do you usually fast food with?		

Friends	172	43.8
Alone	141	35.9
Family	79	20.1
Others	1	0.3

In our study, the majority of our respondents last visited a fast food restaurant 3 to 4 weeks ago (34.1%). Nearly half of the respondents (53.9%) had a frequency of fast food intake per month of 0 to 5 times. Our study also found that most of the medical students of University of Cyberjaya go to fast food restaurants with their friends (43.8%) followed by going there alone (35.9%).

Table 3: Knowledge on fast food of respondents in this study

	Number (n)	Percentage
Fast food contains a high amount of salt.		
Strongly agree	287	73.0
Agree	104	26.5
Neither agree nor disagree	2	0.5
Strongly disagree	0	0.0
Disagree	0	0.0
Fast food contains a high amount of fat.		
Strongly agree	304	77.3
Agree	88	22.4
Neither agree nor disagree	1	0.3
Strongly disagree	0	0.0
Disagree	0	0.0
Fast food contains a high amount of calories.		
Strongly agree	293	74.5
Agree	99	25.2
Neither agree nor disagree	1	0.3
Strongly disagree	0	0.0

Disagree	0	0.0
Fast food is not good for health.		
Strongly agree	292	73.3
Agree	96	24.4
Neither agree nor disagree	4	1.0
Disagree	1	0.3
Strongly disagree	0	0.0
Carbonated drinks in fast food contain a high amount of sugar.		
Strongly agree	308	78.4
Agree	84	21.4
Neither agree nor disagree	1	0.3
Strongly disagree	0	0.0
Disagree	0	0.0
High intake of fast food poses a risk to develop obesity.		
Strongly agree	308	78.4
Agree	85	21.6
Strongly disagree	0	0.0
Disagree	0	0.0
Neither agree nor disagree	0	0.0
High intake of fast food poses a risk to develop diabetes mellitus.		
Strongly agree	306	77.9
Agree	86	21.9
Neither agree nor disagree	1	0.2
Strongly disagree	0	0.0
Disagree	0	0.0
High intake of fast food poses a risk to develop stroke.		

Strongly agree	303	77.1
Agree	90	22.9
Strongly disagree	0	0.0
Disagree	0	0.0
Neither agree nor disagree	0	0.0
High intake of fast food poses a risk to develop heart disease.		
Strongly agree	305	77.6
Agree	88	22.4
Strongly disagree	0	0.0
Disagree	0	0.0
Neither agree nor disagree	0	0.0

Our study showed that about more than 70% of our respondents strongly agree that fast food contains high amounts of salt, fat, calories and sugar. Also more than 70% of our respondents strongly agree that high intake of fast food will cause stroke, diabetes mellitus, heart disease and obesity.

Table 4: Attitude on fast food of respondents in this study

	Number (n)	**Percentage**
Whenever I think of visiting a restaurant, the fast food restaurant first comes to my mind.		
Strongly agree	29	7.4
Agree	169	43.0
Neither agree nor disagree	117	29.8
Disagree	71	18.1
Strongly disagree	7	1.8
Fast food restaurants provide a wide variety of choices.		
Strongly agree	66	16.8
Agree	267	67.9
Neither agree nor disagree	48	12.2
Disagree	9	2.3

Strongly disagree	3	0.8

Fast food restaurants provide a clean and attractive environment.		
Strongly agree	121	30.8
Agree	244	62.1
Neither agree nor disagree	20	5.1
Disagree	5	1.3
Strongly disagree	3	0.8
Fast food restaurant's food portions are large enough to satisfy my hunger.		
Strongly agree	90	22.9
Agree	246	62.6
Neither agree nor disagree	37	12.0
Disagree	9	2.3
Strongly disagree	1	0.3
Fast food is delicious.		
Strongly agree	155	39.4
Agree	226	57.5
Neither agree nor disagree	12	3.1
Strongly disagree	0	0.0
Disagree	0	0.0
Fast food restaurants are easily available.		
Strongly agree	120	30.5
Agree	255	64.9
Neither agree nor disagree	18	4.6
Strongly disagree	0	0.0
Disagree	0	0.0
Fast food restaurants sell food at an affordable and reasonable price.		

Strongly agree	54	13.7
Agree	141	35.9
Neither agree nor disagree	117	29.8
Disagree	78	19.8
Strongly disagree	3	0.8
Fast food restaurants prepares food very quickly.		
Strongly agree	148	37.7
Agree	218	55.5
Neither agree nor disagree	23	5.9
Disagree	4	1.0
Strongly disagree	0	0.0

43.0% of our respondents agree that fast food restaurants will first come into their mind when they think of visiting a restaurant. More than half of our respondents also agree that fast food restaurants have a wide variety of choices, clean and attractive environments and are easily available. They also agree that fast food is delicious, large enough to satisfy hunger and is able to be served quickly. However, compared to other factors, there is less percentage of respondents who agree that fast food is sold at an affordable price.

Our study also found that there is a significant association between knowledge score about fast food and intake pattern with a p-value of <0.001. There is also a significant association between attitude score on fast food with the intake pattern of fast food ($p = 0.008$).

By running our results in JASP, we are able to identify the relationship between socio demographic factors and fast food intake patterns among University of Cyberjaya medical students. The results show that race and estimated parent's/caretaker/own monthly income have significant association with frequency of fast food intake ($p = 0.003$, $p = 0.002$ respectively). Otherwise, residency ($p = 0.3$), age ($p = 0.7$), gender ($p = 0.2$), highest education level ($p = 0.2$), marital status ($p = 0.2$), current year of study ($p = 0.7$) and nationality ($p = 0.2$) have no significant association with frequency of fast food intake in our respondents.

Besides, our study identified the significant factors that attract university students towards fast food is fast food being the first thought that comes into student's minds and speed of fast food preparation is fast ($p <0.001$, $p <0.001$ respectively). Otherwise, variety of menu ($p = 0.051$), environment ($p = 0.570$), portion of food ($p = 0.062$), taste of fast food ($p = 0.203$), convenience of fast food restaurant ($p = 0.402$) and price of fast food ($p = 0.097$) show no significant association to frequency of fast food intake in medical students of University of Cyberjaya.

Discussion

Manaharan, et al. (2023) emphasizes the importance of studying medical students' dietary habits as they will be the future healthcare providers who will be viewed as role models by the community. Hence their dietary behavior will have some impact on their future patients and public.

Cyberjaya is a rapidly developing city with a growing number of food establishments, including fast food restaurants. There are multiple fast food restaurants which are a stone's throw away from University of Cyberjaya namely McDonald, KFC and Burger King. This could have caused these three fast food restaurants to be the three most frequently visited by medical students studying here. Jekanowski, et al. (2001) stated that convenience and availability of fast food outlets have caused increased intake of fast food as consumers will not need to travel far to get a meal.

Similar to previous studies, our study found that the frequency of fast food eating was shown to be substantially correlated with race ($p = 0.003$) [11]. Cheong, et al. (2021) also explains that race influences fast food consumption is due to differences in parenting styles which can be seen in different races and ethnics as well as the influence of fast food advertisement on different races.

Besides, our study also showed that frequency of fast food intake has a significant association with the projected parent/caretaker/own monthly income ($p = 0.002$). This is parallel with the previous study done [13]. This is consistent with the results from the previous study [5]. Our study showed that those from middle income families (60.3%) eat fast food more often compared to the lower and high income group (17.3%, 21.9%). This implies that fast food consumption patterns among medical students are influenced by their ability to pay for these meals and income level.

Our study did not show significant association between frequency of fast food intake with residency, age, highest educational level and marital status which is contrary to previous study conducted by AlTamimi, et al. (2022) that has shown significant associations but is parallel to the result from Mohd Hatta, et al. (2022).

Most of the participants exhibited a high degree of knowledge and awareness regarding the health hazards linked to consuming fast food. They accurately noted that fast food might result in negative health consequences like obesity, diabetes mellitus, heart disease, and stroke because it is heavy in calories, fat, salt, and sugar. This is in line with the result done by Fatikhani, et al. (2019). Syarifah (2015) explains that it is due to intrinsic and extrinsic factors within the study population such as peer's influence and advertisement. With this in mind, others factors should also be taken into consideration in the efforts to control the fast food intake in the population.

The study proved a significant association between students' frequency of fast food intake and the speed at which fast food is prepared as well as the likelihood that students will think about fast food first. These results are like the previous study done and this implies that impulsivity and convenience may be major factors influencing medical students' consumption of fast food. Fast food may seem like a convenient choice for medical students who have limited time for meal preparation due to their busy schedules and rigorous workloads [1]. Furthermore, students' preferences may be influenced and fast food may be more likely to come to mind when thinking about dining options due to its widespread marketing and advertising.

Our study found that the variety of choices in the menu, portion of food served, price, taste, availability and clean and attractive environment are not significantly associated with the frequency of fast food intake among medical students in University of Cyberjaya, which is unlike the findings from Saad, et al. (2021).

Limitation and recommendation

The sample selected for our study was chosen and focused only on the University of Cyberjaya students from the faculty of medicine. Thus, this study is restricted to only medical students and not to the other department students as well as others outside this designation. We hope that a study involving all groups of students regardless of department or course of study and also medical personnel to be included in the future to get a clearer result regarding the association between socio demographic, knowledge, attitude and practice on fast food among the chosen population.

Conclusion

It is crystal clear that frequent consumption of fast food can affect healthy and better quality of our life. In our study, the results that we gained revealed that the predominant factor that influences the university students to choose fast food at the very first line is their socio demographic factors. Our study also showed a considerable degree of awareness among students regarding the impact of fast food to their health as a long term consequence. Students also knew the trigger factors that make them attracted towards fast food. Hence, students must avoid major possible trigger factors to reduce the consumption of fast food to lead a healthier lifestyle.

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