

The Relationship between Awareness of the Impact of Fast Food, Sugar and Processed Food on Health with Food Intake

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Abstract: There are so many campaigns and advertisements on television on the danger of consuming too much fast food, sugar, and processed food. However, people still neglect and consume these foods in high amounts, especially the younger generation. Thus, the purpose of this study is to identify the relationship between the awareness of the youngster on the impact of fast food, sugar, and processed food on health with food intake. This study was conducted through Google form, which was distributed online, and the data are analyzed using Statistical Package for the Social Sciences (SPSS) in finding the correlation between awareness and their eating habit. A total of 167 students participated in answering the questionnaire with one section on demography and six sections comprising of thirty questions. It is found that there is a correlation between knowledge of fast food and attitude in consuming fast food, the correlation between knowledge on sugar and attitude in consuming sugar, and the correlation between knowledge of processed food and attitude in consuming process. Even though respondents realize the danger of consuming these foods, they still take in a high amount. This shows that they are aware of the danger but refuse to take care of their health.

Keywords: Awareness, Fast Food, Sugar, Processed Food

1. Introduction

Fast food, sugar, and processed food intake are no doubt can be harmful to the human body if taken in high amounts. It can lead to obesity and other cardiovascular problem. People love this kind of food because it can be served quickly as it is readily prepared and it is suitable for the office worker who is busy with work. Nowadays, the public is less aware of the dangers of taking fast food, processed food, and sugar intake in excessive amounts that will eventually lead to health problems and they refused to take of the importance of taking care of their food intake despite many awareness campaigns being implemented. The study by Dominguez and colleagues showed significantly increased odds of having gestational diabetes as fast food consumption frequency increased [1]. Even though there is a lot of campaign and articles from the internet on health issues and they realize even people who obsessed with

the gym or young people died of heart attack, people still are not aware or refuse to take of the importance of taking care of their food intake. Thus, this study is to survey whether people are aware of the dangers of taking too much sugar in fast food and how dangerous is obesity [2].

From the past research and studies, it is expected to get a high level of awareness upon the various effects of sugar, processed food, and fast food consumption specifically in youth as more youngster begin to check the food labelled before proceed to purchase it. The awareness of sugar and participant's daily sugar intake is expected to show that participants are consuming less sugar as they are aware of the side effect of consuming too much sugar and thus practice it in their daily life. The expected result between the awareness of fast food and participant's weekly fast-food intake should be in a positive relationship as the consumer is aware of the side effect of fast food. Fast food contains high calories and may affect the participants' daily calorie recommend intake. The relationship between the awareness of processed food and participants' weekly processed food intake also are expected to be positive. This study provides insight views on the level of awareness towards the side effect of consuming too much sugar, processed food, and fast food. It also provides us with the relationship between awareness and what they practice.

1.1 Purpose of the Study

This study only focused on the younger generation, which, consists of college students who eat at the cafeteria, as they are not allowed to cook at the hostels. Diploma students who just enter university after a secondary school was selected in this study. The research aims to identify whether there is a relationship between knowledge and people practices. This study was designed to examine the relations between the consumption of fast food, sugar, and processed food and the awareness of the impact of these foods. The objectives of this study are to test the following hypothesis:

- 1) There is a relationship between awareness of the impact of fast food on health with the food intake.
- 2) There is a relationship between awareness of the impact of sugar on health with the food intake.
- 3) There is a relationship between awareness of the impact of processed food on health with the food intake.

1.2 Fast Food

Fast food can be defined as "easily prepared processed food served in snack bars and restaurants as a quick meal or to be taken away" [3]. Studies showed that while fast foods are tasty they have poor nutritive value and high calories [1]. Fast foods are the key agents causing various disorders and diseases like obesity which is likely to cause heart diseases in the future [4]. Based on the national research, there were about 12% of the young people's calories came from fast food with older children ingesting more calories than younger children from consuming fast food back in the year 2011 to 2012 [1]. The findings of [4] clearly show that most of the students have moderate knowledge about the effects of fast food consumption and there was also a small number of students who know about the nutritional value of fast food [4].

1.3 Sugar

There is simple and complex sugar or can be called simple and complex carbohydrates. Simple carbohydrates are easy to digest as it can be absorbing in the small intestine but complex carbohydrates are a bit hard to digest because it must be broken down by enzymes before can be absorbed [5]. Simple sugar can be divided into two categories which are monosaccharide and disaccharide. Monosaccharides consist of glucose, galactose, and fructose while disaccharides consist of sucrose, lactose, and maltose [6]. According [7] consuming sugar will leave some negative effects on the human body such as suppression of the immune system, inflammation, and lack of matching insulin [7]. However, [2] state

that when sugar is consumed in a moderate amount it can help to promote healthy eating behavior and can maintain overall physical and behavioral health [2]. Regarding the awareness of sugar in high school students, the rate of correct answers regarding glucose as sugar, diabetes, and sugar, sugar in processed beverages, and digestion of sugar are below 50% [8]. The result is a bit worrying as young students do not have enough knowledge of sugar in products. The consumption of sugar should be taken seriously from all ages.

1.4 Processed Food

According to the U.S. Department of Agriculture (USDA), it states that processed food as any raw agricultural commodity subjected to washing, cleaning, milling, cutting, chopping, heating, pasteurizing, blanching, cooking, canning, freezing, drying, dehydrating, mixing, packaging, or other procedures that alter the food from its natural state. [9]. Overall, it can be said that processed food is a packaged food item containing many ingredients, perhaps even artificial colors, flavors, or other chemical additives. Processed food can be categorized by using a classification system called NOVA. NOVA has split foods into four categories which are unprocessed or minimally processed foods, processed culinary ingredients, processed food, and ultra-processed food [10]. Studies have found that processed foods have been linked to obesity, cancer, diabetes, and may even contribute to increased blood pressure [11]. Based on research conducted in Nigeria, 78% out of 50 respondents only have little knowledge about food addiction. The majority of the respondent also could not answer the function of each of the additive correctly except for glucose which is 66% of respondents can identify that it acts as a sweetener. In general, the respondents are lacking knowledge about food addiction especially on the role of common food additives [12].

2. Methodology

The methodology for this research describes all the necessary information that is required to obtain the results of the study such as includes research design, population and samples, parameter measurement, research instruments, and the data collection that has to do with this research.

2.1 Participants

The statistical population comprises male and female Diploma students (year one) who just enter Universiti Tun Hussein Onn Malaysia (UTHM), Pagoh Campus, Johor.

2.2 Materials

There are 4 sections in the questionnaire. The first section is on the demographic of the respondents. The other three sections have 10 questions each with a total of 30 items in the questionnaire. Students need to circle the appropriate scale based on their knowledge and attitude in consuming fast food, sugar and processed food. The scale is given as follow:

	1	2	3	4	5	
Totally	O	O	O	O	O	Totally
Disagree						Agree

An example of the questions is given in **Table 1**.

Table 1: Examples of questionnaire item

Item	Section 1: Consumption of Sugar	Scale
1.	You take sugary food often in a month	1 2 3 4 5 Totally O O O O O Totally Disagree Agree
Item	Section 2: Awareness The Impact of Sugar on Health	Scale
1.	You know that sugar can cause diabetes.	1 2 3 4 5 Totally O O O O O Totally Disagree Agree
Item	Section 3: Consumption of Fast Food	Scale
1.	You take fast food often in a month	1 2 3 4 5 Totally O O O O O Totally Disagree Agree
Item	Section 4: Awareness The Impact of Fast Food on Health	Scale
1.	You know that fast food can cause heart disease.	1 2 3 4 5 Totally O O O O O Totally Disagree Agree
Item	Section 5: Consumption of Processed Food	Scale
1.	You take processed food often in a month	1 2 3 4 5 Totally O O O O O Totally Disagree Agree
Item	Section 6: Awareness The Impact of Processed Food on Health	Scale
1.	You know that processed food can cause diabetes.	1 2 3 4 5 Totally O O O O O Totally Disagree Agree

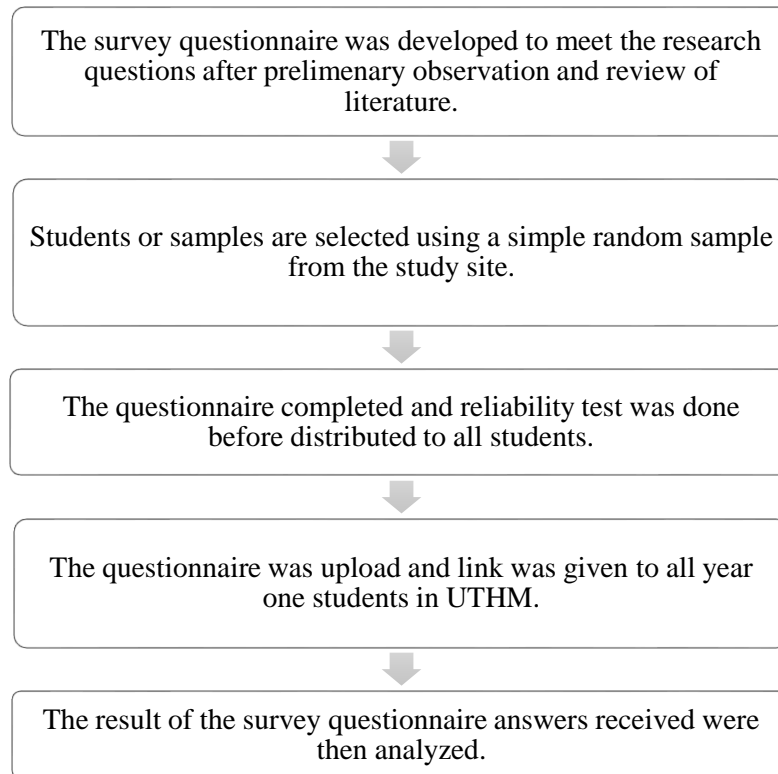
Before the questionnaire was given to the diploma students, the reliability test was done. The result of Cronbach's alpha analysis in this study is 0.748 with 30 items. Thus, we can conclude that the data are consistent and reliable. **Table 2** shows the analysis of data reliability using Cronbach's alpha

Table 2: Reliability test of the questionnaire - Cronbach alpha

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.748	.747	30

2.3 Measures

The data collection procedure of this research is shown in **Figure 1**.

**Figure 1: Data collection procedure**

3. Results and Discussion

The results and discussion section presents data and analysis of the relationship between knowledge and attitude which is analyzed using Pearson's correlation method in SPSS software.

3.1 Results

Tables 3 and **4** describe the demographic profile of the respondents. There were 121 males (72,5%) and 46 females 46 (27.5%) with a total of 167 diploma students participated in this study as shown in **Table 3**. Thus, more than half of the respondents were male students.

Table 3 Demographic Profile of Respondent – Gender

		Frequency, n	Percentage, %
Gender	Male	121	72.5
	Female	46	27.5
Total		167	100.0

Table 4 Demographic Profile of Respondent – Course

Course Code	Frequency, n	Percentage, %
DAA	24	14.4
DAE	19	11.4
DAK	19	11.4
DAM	76	45.5
DAU	29	17.4
Total	167	100.0

From the total of 167 students participated in this study, the students came from a various course which is Diploma in Civil Engineering (DAA), Diploma in Electrical Engineering (DAE), Diploma in Chemical Engineering (DAK), Diploma in Mechanical Engineering (DAM) and Diploma in Applied Science (DAU). Concerning course, majority of the participants was Mechanical Engineering students with 76 (45.5%) students, followed by Applied Science student with 29 (17.4 %) students as shown in **Table 4**.

Table 5 Correlation coefficient between awareness and food intake

Component	P	R
Awareness		
Fast Food	.000	.286
Sugar	.001	.265
Processed Food	.000	.380

To determine the relationship between awareness and food intake, Pearson correlation coefficients was done as shown in **Table 5**. There is a weak relationship between knowledge in fast food and attitude in consuming fast food and the correlation is positive and significant at a significance level of .01 ($r = 0.286$). The relationship between knowledge in sugar and attitude in consuming sugar is also weak and the correlation is positive and significant at a significance level of .01 ($r = 0.265$). The weak relationship between knowledge of processed food and attitude when consuming processed food and the correlation is positive and significant at a significance level of .01 ($r = 0.380$).

3.2 Discussions

The research aims to identify whether there is a relationship between knowledge and people's eating habit. This study was designed to examine the relations between their awareness of the impact of consumption of fast food, sugar, and processed food with their food intake.

In this research, students aware of the impact of fast food, sugar, and processed food. This finding is similar to the findings of [4] where most of the students have moderate knowledge about the effects of fast food consumption and there was also a small number of students who know about the nutritional value of fast food [4]. However, this finding is not consistent with the finding from the study done by [13]. From their study, regarding the awareness of sugar in high school students, the rate of correct answers regarding glucose as sugar, diabetes, and sugar, sugar in processed beverages, and digestion of sugar are below 50%. In another research conducted in Nigeria, 78% out of 50 respondents have little knowledge about food addictive. The majority of the respondent also could not answer the function of each of the addictive correctly except for glucose and the respondents are lacking knowledge about food addictive especially on the role of common food additives [12].

In this study, students are aware of the bad effect of fast food, sugar, and processed food. However, awareness does not stop them from consuming this food in a large amount. These findings are consistent with the study done by [14]. In their study, the students were aware of the risks associated with fast food consumption on health; however, their eating habits did not indicate they practiced what they knew could be harmful to their health, especially when they were socializing with friends [15].

4. Conclusion

In conclusion, even though the students realize the effect of fast food, sugar, and processed food on their health, the attitude toward these foods do not reflect their awareness. Students do need to be given more knowledge of the bad effect of these foods on their health. With this knowledge, they can change their lifestyle and make healthy choices regarding fast food, sugar, and processed food. In the future, a study can be made to point out the reason for people's addiction to fast food, sugar, and processed food.

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References

- [1] J. A. Fulkerson, "Fast food in the diet: Implications and solutions for families," *Physiol. Behav.*, vol. 193, pp. 252–256, Sep. 2018, doi: 10.1016/J.PHYSBEH.2018.04.005.
- [2] C. R. Freeman, A. Zehra, V. Ramirez, C. E. Wiers, N. D. Volkow, and G. J. Wang, "Impact of sugar on the body, brain, and behavior," *Front. Biosci. - Landmark*, vol. 23, no. 12, pp. 2255–2266, 2018, doi: 10.2741/4704.
- [3] J. Ahmed, F. Alnasir, A. Jaradat, A. J. Al Marabbeh, and R. R. Hamadeh, "Association of Overweight and Obesity with High Fast Food Consumption by Gulf Cooperation Council Medical Students," *Ecol. Food Nutr.*, vol. 58, no. 5, pp. 495–510, 2019, doi: 10.1080/03670244.2019.1613986.
- [4] T. Khongrangjem *et al.*, "A study to assess the knowledge and practice of fast food consumption among Pre-University students in Udipi Taluk, Karnataka, India," *Clin. Epidemiol. Glob. Heal.*, vol. 6, no. 4, pp. 172–175, 2018, doi: 10.1016/j.cegh.2017.11.003.
- [5] M. Zaitoun, M. Ghanem, and S. Harphoush, "Sugars : Types and their functional properties in food and human health," *Int. J. Public Heal. Res.*, vol. 6(4), no. October 2018, pp. 93–99, 2019.
- [6] L. Panawala, "Difference Between Simple and Complex Carbohydrates," Oct. 2017.
- [7] V. Misra, A. k. Shrivastava, S. P. Shukla, and M. I. Ansari, "Effect of sugar intake towards human health," *Saudi J. Med.*, vol. 1, no. 2, pp. 29–36, 2016, doi: 10.21276/sjm.2016.1.2.2.
- [8] N. Joo, S.-K. Kim, and J. Yoon, "High School Students' Sugar Intake Behaviors and Consumption of Sugary Processed Food Based on the Level of Sugar-related Nutrition Knowledge in Seoul Area," *Korean J. Community Nutr.*, vol. 22, no. 1, p. 1, 2017, doi: 10.5720/kjcn.2017.22.1.1.
- [9] J. M. Jones and R. A. Clemens, "Processed and ultraprocessed foods defined-an alice in wonderland question?," *Cereal Foods World*, vol. 62, no. 3, pp. 120–122, 2017, doi: 10.1094/CFW-62-3-0120.
- [10] C. M. Weaver *et al.*, "Processed foods: Contributions to nutrition," *Am. J. Clin. Nutr.*, vol. 99, no. 6, pp. 1525–1542, 2014, doi: 10.3945/ajcn.114.089284.
- [11] J. M. Fagan, "Consumption of Processed Foods Negatively Impacts Your Health," no. 5.
- [12] S. F. Ismail, B.B., Fuchs, R., Mohammad, "Consumer awareness of the use of additives in

- processed foods,” *Ann. Food Sci. Technol.*, vol. 18, no. June, pp. 316–323, 2017.
- [13] M. Tierney, A. M. Gallagher, E. S. Giotis, and K. Pentieva, “An online survey on consumer knowledge and understanding of added sugars,” *Nutrients*, vol. 9, no. 1, pp. 1–13, 2017, doi: 10.3390/nu9010037.
- [14] S. Abraham, M. Martinez, G. and J. Smith. College student's perception of risk factors related to fast food consumption and their eating habits. *Journal of Nutrition and Human Health* (2018) Volume 2, Issue 1, pp. 18 – 21, 2018.
- [15] M. and A. M. Hegde. Are we Aware of what we are, we are what we Eat- An Epidemiological Survey. *Int J Clin Pediatr Dent.* 1(1): 13–16. 2008. doi: 10.5005/jp-journals-10005-1003