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## THE CORRELATION BETWEEN CONSUMING FAST FOOD AND OBESITY OF PRIMARY SCHOOL-AGED CHILDREN IN SD AL-AZHAR MEDAN

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### Abstract

*Fast food is high calorie foods and is preferred by children, especially in the primary level. Extensive consumption of fast food can lead to obesity. In Indonesia the prevalence of obesity in primary school-aged children increases from 5.0 % to 16.0% this increase is due to the habit of consuming fast food. To determine the correlation of fastfood consumption with obesity on primary school-aged children. This research is analytic applying case control study design. The data of weight and height are collected by anthropometric measurements using Body Mass Index (BMI), within distributing questionnaires for nutritional status and physical activity while the fastfood consumption will be held by Food Frequency Questionnaires (FFQ) method. Hypotheses were analyzed by Chi-Square test results. The Chi-Square test results showed that there was a correlation between the frequency of fast food and the incidents of obesity (0.05). The result of the Chi-Square test showed that there was a correlation between the portion of fast food and the incident of obesity (0.05). There is a frequency correlation often consume fast food to the incident of obesity p value 0.01. There is correlation between large portions of fast food consumption to the incident of obesity with p value 0.001.*

**Keywords:** Nutritional status, physical activity, fast food consumption, obesity

### Abstrak

Makanan cepat saji merupakan makanan berkalori tinggi dan disukai oleh anak-anak, terutama di tingkat sekolah dasar. Konsumsi makanan cepat saji yang berlebihan dapat menyebabkan obesitas. Di Indonesia prevalensi obesitas pada anak usia sekolah dasar meningkat dari 5,0% menjadi 16,0% peningkatan ini disebabkan oleh kebiasaan mengkonsumsi makanan cepat saji. Untuk mengetahui hubungan konsumsi fast food dengan obesitas pada anak usia sekolah dasar. Penelitian ini merupakan penelitian analitik dengan desain studi kasus kontrol. Pengumpulan data berat badan dan tinggi badan dilakukan dengan pengukuran antropometri menggunakan Body Mass Index (BMI), dengan penyebaran kuesioner status gizi dan aktivitas fisik sedangkan konsumsi fastfood dilakukan dengan metode Food Frequency Questionnaires (FFQ). Hipotesis dianalisis dengan hasil uji Chi-Square. Hasil uji Chi-Square menunjukkan ada hubungan antara frekuensi fast food dengan kejadian obesitas (0,05). Hasil uji Chi-Square menunjukkan ada hubungan antara porsi fast food dengan kejadian obesitas (0,05). Ada hubungan frekuensi sering mengkonsumsi

fast food dengan kejadian obesitas p value 0,01. Ada hubungan antara porsi besar konsumsi fast food dengan kejadian obesitas dengan p value 0,001.

**Kata kunci:** *Status gizi, aktivitas fisik, konsumsi fast food, obesitas.*

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## Introduction

The progress in the field of science and economics has created an environment with a sedentary lifestyle and dietary habit of consuming food with good taste and high calorie. Excess energy intake is stored in fat tissue, over time will lead to obesity (Dwi, 2012).

Obesity occurs due to many factors. The main factor is the imbalance of energy intake with energy output. In Indonesia, the impact of technological and socio-economic developments is a change in dietary habit from traditional dietary habit to western dietary habit such as fast food which contains lots of calories, fat and cholesterol (Dwi, 2012)

According to the World Health Organization (2014), overweight and obesity are defined as abnormalities or excessive fat which risks to health. WHO categorizes obesity into four:

1. <5 percentile categorized as underweight,
2. Among 5 to 85 percentiles categorized as normal,
3. Ranges of values  $\geq 85$  to  $\leq 95$  percentile are categorized as overweight,
4.  $\leq 95$  percentile categorized as obese (WHO & CDC 2000).

## Methods

This study was analytic applying case control design which was conducted by comparing case group and control group (Notoadmojo, 2010). The researcher analyzed the correlation of fast food consumption with obesity of primary school-aged children at SD Al-Azhar Medan. This study was conducted from August to November 2018 in SD Al-Azhar Medan. The population was 400 students in range 6-12 years old in SD Al-Azhar Medan for academic year 2018 / 2019. The technic sampling was conducted by using cluster sampling which fulfilled the criterion inclusion and exclusion provided by the researcher. The sample consisted of case group and control group. Case group was the children with obesity due to consuming fast food while control group was the children no obese.

## Results And Discussion

This study was conducted in Al-Azhar Primary School Medan. Al-Azhar Primary School Medan is one of the International Schools with Islamic Vision, that is located at Jalan Pintu Air IV No. 189, Kwala Bekala, Medan Johor.

Data obtained based on questionnaires taken from 88 respondents of first to sixth grade students in SD Al-Azhar Medan by using cluster sampling.

Table 4.2 The distribution of respondents based on the students' characteristics

Characteristic (Sex)	Cases (n = 44)		Control (n = 44)	
	Freq	%	Freq	%
Male	19	43,18%	21	47,72%
Female	25	56,82%	23	52,28%
<b>Age</b>				
6 – 8	2	4,55 %	4	9,1 %
9 – 10	18	40,91 %	23	52,27 %
11 – 12	24	54,54 %	17	38,63 %

From Table 4.2 it can be seen that the incidents of obesity for female was more than the incidents obesity for male in range of 11-12 years old. This data was in accordance with the research of Khairina and Kartika (2018) which showed the percentage of the incidents of obesity for female (55.5%) was more than the incidents obesity for male in range of 11-12 years old. It was related with the physical activity which female do more physical activity than male (Hidayati and Pibriyanti, 2018).

The kinds of food consuming by the primary school-aged students in SD AL-Azhar Medan can be seen from table 4.3

Table 4.3 The distribution of kind of fast food frequency related with obesity of school-aged children in SD Al-Azhar Medan

Kinds of food	Cases		Control	
	Total	Percentage	Total	Percentage
Doughnuts	21	42%	29	58%
Spaghetti	21	63,6%	12	36,4%
French Fries	20	47,6%	22	52,4%
Nugget	18	36,7%	31	63,3%
Instant Noodle	18	43,9%	23	56,1%
Fried Chicken	16	33,3%	32	66,7%
Sausages	14	34,1%	27	65,9%
Pizza	12	70,6%	5	29,4%
Hamburger	8	38,1%	13	61,9%

Table 4.3 showed that the most consuming fast food taken from the respondents of cases group was spaghetti with the total numbers 21 children (63.6%). The result was not in accordance with the study conducted by Allo (2013) showed the most consuming fast food was pizza (49%). The level of frequency consuming a certain kind of fast food based on flavor, food appearance, and its color.

The frequency of food consuming by the primary school-aged students in SD AL-Azhar Medan can be seen from table 4.4

Table 4.4 The distribution of fast food frequency related with obesity of school-aged children in SD Al-Azhar Medan

Frequency	Cases	Control
Frequent	18	30
Rare	26	14
Total	44	44

Table 4.4 showed that the frequency of consuming fast food of control group was more frequent than obesity group. Based on the result of questionnaire, the control group more consuming fast food was just for 2-4 times in a week while the obesity group was less than case group, the frequency was 6 times in a week. The result was in accordance with the research of (Syarifah et.al 2015) stated that a man who consumed fast food has 3 times more risk obesity than those who did not consume. The high frequency of consumption fast food for each person is different.

Portion of fast food of primary school-aged children in SD Al-Azhar Medan can be seen in table 4.5

Table 4.5 The distribution of fast food portion of primary school-aged children in SD Al-Azhar Medan

Frequency	Case		Control	
	Total	Percentage	Total	Percentage
Large	13	29,5 %	1	2,3 %
Small	31	70,5 %	43	97,7 %
Total	44	100%	44	100%

Based on the table 4.5 showed the obesity group has larger portion of food than control group. The result was in accordance with the results of Lisa & Marion (2002) stated that there is a parallel correlation large portion of food and energy availability, energy intake, and the prevalence of being overweight or obese. However, there are several external factors influence this indicator such as low energy expenditure.

Table 4.6 The correlation of frequency consuming fast food and obesity

Variable	Obesity (+)	Obesity (-)	P value
Frequent	18	30	0,01*
Infrequent	26	14	

Chi-Square test results show there are frequencies of fast food with the incidence of obesity (0.05). This result was in accordance with the study of Octaviani et.al (2012) stated that high frequencies in consuming fast food can increase the accumulation of calories in the body causing obesity. In this study, the frequency of fast food in the non-

obese group was greater than the obese group. This is probably due to the determination of the frequency category that is too far in range between frequent and rare consumption where the frequent consumption was  $\geq 2$  times / week and rare consumption was  $\leq 1$  times / week.

The correlation of the portion of fast food to obesity can be seen in the table 4.7

Table 4.7 The correlation of fast food portion with the obesity

Frequency	Case	Control	P Value
Large	13	1	<0,001
Small	31	43	
Total	44	44	

Chi-Square test results show there was a correlation between the portion of fast food and the incidence of obesity (0.05). These results are in accordance with the study of Lisa and Marion (2002) who say that there is a positive correlation between large portions of food with energy availability, energy intake, and prevalence of overweight or obesity. However, there were a number of external factors influencing this indicator, for instance little energy expenditure. It caused the occurrence of calorie imbalances in the body which is the calories go excess of calories released in the form of energy and this excess is accumulated in body fat in a certain period of time ([Damopolii, 2013](#)).

## Conclusion

The characteristic of primary school-aged children in SD Al-Azhar Medan based on sex which is female is more than men in range 11-12 years old. The type of fast food and beverage that cause obesity based on the frequency is spaghetti (63.6%). There is a correlation between the frequency of consuming fast food and the incidence of obesity with the p-value 0.01. There is a correlation between large portions of fast food consumption to the incidence of obesity with p value 0.001.

Suggestion to the students, teachers, and parents is to give an understanding of the science nutrition and consumption of healthy and nutritious foods. It is hoped that the further study can be used as a reading material regarding the correlation between fast food and the incidence of obesity.

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