

Overview of Dietary Quality in Adolescents at State Junior High School 4 Depok, Sleman Regency, Yogyakarta

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ABSTRACT

Adolescents are categorized into nutritionally vulnerable ages. Dietary quality is one factor that influences nutritional status in adolescents. Poor dietary quality will have an impact on development that is not optimal and more susceptible to non-communicable diseases, such as obesity and diabetes Mellitus. This study aims to describe the dietary quality of adolescents at Junior High School 4 Depok, Sleman, Yogyakarta. This was a descriptive quantitative observational study with a cross-sectional design. The study site was state junior high school 4 Depok, Sleman, Yogyakarta, which is located in obesogenic sub-urban area, on May–June 2023. The were 90 respondents Junior High School students in 7th and 8th grades, who were determined using purposive sampling. The instrument used the Dietary Quality Index for Adolescents (DQI-A) form and 24-hour recall form. The results showed that most adolescents had poor dietary quality category (80%). The results of the Dietary Quality (DQ) category were 44.77% and 56.69%, the Dietary Diversity (DD) category were 66.67% and 55.56%, the Dietary Equilibrium (DE) category were 29.97% and 24.27% (respectively on weekday and weekend). The final DQI-A score showed that average weekdays were 45.17% and median weekends were 46.71%. In conclusion, adolescents at state junior high school 4 Depok Sleman Yogyakarta mostly have a poor category.

Keywords: *Dietary Quality, Adolescents, and School Children*

1. INTRODUCTION

Adolescents are an age category that falls into the nutritionally vulnerable category. Adolescents in Indonesia are currently experiencing three burdens of nutritional problems (triple burden of malnutrition) [1], based on the results of Basic Health Research in 2018 regarding the nutritional status of adolescents at the age of 13–15 according to the BMI/U index, it showed that the prevalence of adolescent nutritional status in Sleman Regency was in the overweight category of 9.42%, and in the obese category of 6.66 % [1].

The population census in Sleman Regency in 2020/2021 showed that the largest population in Sleman Regency was in Depok District. Based on the census of the population in Depok District according to the age group of 10–14 years, 80,876 people occupied the high category

based on age group in Sleman Regency [1], health profile data for Sleman Regency in 2019 showed that the prevalence of overweight has a higher tendency at the junior high school level, which is around 7–8% when compared to the high school level. The screening results showed that the nutritional status of obesity at the junior high school level increased by 0.22% [2].

State Junior High School 4 Depok Sleman was located in Depok District. Based on the results of field observations, there was a culinary environment around the location of the school. It was easy access to obtain food because of the many culinary places in the area, like restaurants and food stalls. Most foods for sale in the school environment are foods high in energy and fat, such as fried foods, chicken noodles, meatballs, *cilok*, and high-sodium snacks.

One of the factors influencing the nutritional status of adolescents is dietary quality. Dietary quality is the quality of food consumed by a person taking into account the amount of nutrients, diversity of food ingredients, and food balance by paying attention to the type of food consumed according to the category of food group, namely the category of high, medium, or low energy-dense nutrients [3], the poor quantity and quality of food consumption is one of the direct causes of nutritional problems [3], poor dietary quality will have an impact on development that is not optimal and more susceptible to non-communicable diseases such as obesity, diabetes mellitus, hypertension, cardiovascular disease, and cancer [4], this study aims to describe the dietary quality of adolescents at State Junior High School 4 Depok, Sleman, Yogyakarta.

2. METHOD

Type, Location, and Time of The Study

This was an observational quantitative descriptive study with a cross-sectional design. This study was conducted at State Junior High School 4 Depok Sleman Yogyakarta in May–June 2023. This study received permission from the Health Research Ethics Commission, Faculty of Health Sciences, University of Respati Yogyakarta on May 26 2023 with the Ethical Eligibility Letter number 080.3/FIKES/PL /V/2023.

Respondent

The target population was all students at State Junior High School 4 Depok Sleman Yogyakarta. The reachable population was students in 7th and 8th grades, totaling 258 respondents. The sample size in this study used an unpaired categorical analysis formula [5], 90 respondents met the following criteria: willing to be a respondent by signing an informed consent; wasn't fasting, and wasn't on a weight loss diet. The sampling technique in this study was purposive sampling.

Data Collection

The respondent was asked to fill out a 24-hour recall form twice (weekday and weekend). The instrument used in collecting dietary quality data was the Dietary Quality Index for Adolescents (DQI-A) form [6].

DQI-A is divided into three categories, namely Dietary Quality (DQ), Dietary Diversity (DD), and Dietary Equilibrium (DE). The percentages from three categories of DQ, DD, and DE were then averaged to get the total DQI-A score. Dietary quality was included in the “poor” category if the DQI-A score was < 51%, the “needs improvement” category if it was 51–80%, and the “good” category if the DQI-A score was >80% [7].

Processing and Analysis of Data

The data were processed through the stages of editing, scoring, coding, entry, and tabulating. Dietary quality data were tested for frequency and normality tests using the Kolmogorov-Smirnov test, to describe each variable using percentage (%), mean standard deviation (SD), and median (min-max). The data presented on table.

3. RESULTS AND DISCUSSION

Table 1 shows that the total number of respondents used in this study was 90 respondents, with the majority of students being female, namely 50 students. As many as 43.3% of the respondents were 13 years old, the largest number of students as respondents were in class VIII B, and most of the respondents' daily allowance range was IDR >5000–10,000 with a percentage of 44.4%, whereas an average respondent's pocket money of IDR 12,687.

Table 2 shows that the results of dietary quality using DQI-A on weekdays have an average of 45.17%, and on weekends it shows a median of 46.71%. According to the study on European adolescents, DQI-A scores were categorized into 4 quartiles, namely quartile 1st: <36.7%; 2nd quartile: 36.7%-51.0%; 3rd quartile: 51.1%-61.1%; and 4th quartile: >61.2%. Based on the results of this study, the average DQI-A score on weekdays was 45.17% and the median on weekends was 46.71%, belonging to the 2nd quartile category [8], this dietary quality score was classified as higher than the study among Indonesian schoolgoing adolescent girls in West Java who obtained a DQI-A score of 44.4% [9], and the study among adolescent in Jakarta which obtained a DQI-A score of 40.34% [3], however, the results of the dietary quality score in this study were lower than the study in Bogor City in the pandemic of Covid-19 who obtained a DQI-A score of 52.6% [10].

Table 1. Respondent Characteristics

Respondent Characteristics	N = 90	Percentages (%)
Gender		
Male	40	44.4
Female	50	55.6
Age		
12 Years Old	8	8.9
13 Years Old	39	43.3
14 Years Old	34	37.8
15 Years Old	9	10
Class		
Vii C	23	25.55
Vii D	23	25.55
Viii A	20	22.2
Viii B	24	26.7
Range Of Pocket Money Per Day	12	13.3
Idr 0 – 5,000		
Idr > 5000 – 10,000	40	44.4
Idr > 10,000 – 15,000	9	10
Idr > 15,000 – 20,000	25	27.8
Idr > 20,000	4	4.4

Based on Table 2, the weekday and weekend scores of DQ and DD components are not much different from the results of research from the study in Bogor City during the pandemic of Covid-19, which obtained an average result of 56.5% for DQ and 52.5% for DD. However, the DE component score has quite a lot of difference from that study which obtained an average yield of 49%. So, the average final score on the DQI-A in this study was lower than the study in Bogor City in the pandemic of Covid-19 [10].

Table 2. Dqi-A Score

Dqi-A Indicator	Mean ± Sd	Median (Min – Max)
Dq		
Weekday	44,77 ± 16,2	
Weekend		56,69 (0 – 83,33)
Dd		
Weekday		66,67 (33,33 – 100)
Weekend		55,56 (22,22 – 88,89)
De		
Weekday		29,79 (0 – 55,56)
Weekend		24,27 (0 – 55,56)
Dqi-A	45,17 ± 10,4	

Dqi-A Indicator	Mean ± Sd	Median (Min – Max)
Weekend		46,71 (45,1 – 68,52)

The results showed that the average DQI-A score on weekdays was 45.17% and the median on weekends was 46.71%. This shows that there is no significant difference in food consumption on school days and holidays, so it can be seen that the average dietary quality of respondents in this study belongs to the poor category. The study showed that choosing a 24-hour recall time should include one weekday and one weekend to reduce the average error in respondents' food intake [11], adjusting to the literature above, even though in this study there was no significant difference between weekday and weekend dietary consumption, the weekend selection must still be considered to minimize the error in estimating the nutrients consumed because usually many respondents spend their weekends consuming foods that tend to be unhealthy (cheating day).

Table 3. Dietary Quality

Dietary Quality	Frequency	Percentages (%)
Poor	72	80
Needs Improvement	18	20
Total	90	100

Shows that the dietary quality of adolescents at State Junior High School 4 Depok Sleman Yogyakarta mostly has a poor category, as many as 72 students (80%). The results showed that adolescents who had poor dietary quality were adolescents who did not consume enough water, vegetables, fruits, and milk, and consumed too much potatoes/grains and meat/fish/substitutes. This is in line with a study adequacy of adolescent diets was very high. This is influenced by the diet of adolescents who like among adolescents in a south-Mediterranean country, showed that the energy to eat sweet foods, fast food, and snacks, and rarely eat fruits and vegetables. This is caused by the level of preference for fast food types being higher than vegetables and fruits [12].

The quality of consumption is not only influenced by the quantity but also influenced by the diversity and balance consumed. A study shows that adolescent food consumption tends to have an unequal consumption ratio between

carbohydrates, protein, vegetables, fruits, and foods that contain high calories with a high density [13].

Most of the respondents were 13 years old, namely 39 students (43.3%). Age can affect a person's food consumption patterns. According to a study in the UK, it showed that there was a significant relationship between age and food consumption patterns. The higher the age, the higher the food intake [14].

Most of the respondents have a pocket money range of IDR >5000–10,000, namely 40 students (44.4%), with an average respondent's pocket money of IDR 12,687. According to the study, it states that the availability of pocket money will affect dietary consumption patterns. The greater the pocket money, the more and more often adolescents consume fast food. The more often adolescents consume fast food, the more it can have an impact on their dietary quality [15].

4. CONCLUSION

The dietary quality of adolescents at State Junior High School 4 Depok Sleman Yogyakarta is mostly in the poor category. It is suggested for future researchers to add other variables to determine other factors that affect dietary quality in adolescents such as nutritional status, food availability, socioeconomic, and physical activity.

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