Correlation Between Factors of Sedentary Behavior and Attitude Toward Nutritional Status in 4th and 5th Grade Students of State Elementary School, X Sub-District, East Jakarta

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Abstract: _Introduction: Obesity is not only caused by excessive carbohydrate, fat or protein intake but also lack of physical activity (Almatsier, 2003). Nationally, the problem of overweight in children aged 5-12 is still high. From 18.8% children aged 5-12, 10.8% of them is considered overweight and 8.8% is considered very fat (obese) . The lowest prevalence of fat is in East Nusa Tenggara (8.7%) and the highest is in DKI Jakarta (30.1%). Objective: To observe correlation between factors of sedentary behavior and attitude and nutritional status in 4th and 5th grade students of state elementary school, x sub-district, East Jakarta. Methods: This study employed cross sectional design using data obtained from interview and measurement. This study links the dependent variable (sedentary factor) and independent variables (attitude toward nutritional status) using a sample of 92 students in state elementary school, X sub-district, East Jakarta by employing total sampling method. The study was conducted in October 2018. Data analysis was carried out using univariate and bivariate analysis with chi square statistical tests. Results: From nutritional status based on Body Mass Index,86 respondents (93.5%) were categorized into abnormal nutritional status and 6 respondents (6.5%) were categorized into normal. The results of statistical analysis shows contributing variables to nutritional status, namely consuming snacks, physical activities, and good attitude. Conclusion: The most dominan factor in the correlation between correlation between factors of sedentary behavior and attitude and nutritional status in 4th and 5th grade students of state elementary school, X sub-district, East Jakarta, is consuming snacks._

Keywords : Nutritional Status, Sedentary Behavior and Attitude

1. Introduction

World Health Organization (WHO) considers overweight and obesity in the big five cause of death. At least 2.8 million people die annually due to overweight and obesity, which have a high mortality rate in the world compared to underweight. There are 42 million children suffering overweight and 35 million of them come from developing countries. It is also stated that the prevalence of obesity and nutritional status in boys aged 6-12 is higher than the prevalence in girls respectively by 10.7% and 7.7% (WHO, 2012).

Nationally, the problem of overweight in children aged 5-12 is still high. From 18.8% children aged 5-12, 10.8% of them is considered overweight and 8.8% is considered very fat (obese) . The lowest prevalence of fat is in East Nusa Tenggara (8.7%) and the highest is in DKI Jakarta (30.1%). Provinces with a very high prevalence of overweight above the national number are Central Kalimantan, East Java, Banten, East Kalimantan, Bali, West Kalimantan, North Sumatra, Riau Islands, Jambi, Papua, Bengkulu, Bangka Belitung, Lampung and DKI Jakarta (Riskesdas, 2013).

Apart from the problem raised from parental income and food consumption, physical activity in children contributes to the occurrence of obesity. Generally, games played by children are physical games requiring children to run, jump, or other movements, yet, those games were currently replaced by other kinds of games that lack physical exercise such as electronic games, computers, internet, or television.

Obesity is not only caused by excessive carbohydrate, fat or protein intake but also lack of physical activity (Almatsier, 2003).

From the data above it is clear that health problems in Indonesia are serious problem that should be addresed immediately. The purpose of this study was to determine the correlation between sedentary behavior and attitudes related with nutritional status in 4th and 5th grade students in State Elementary School, X sub-district, East Jakarta.

2. Research Methodology

1) Research Design
The research was a quantitative research employing cross sectional design conducted in State Elementary School in X Sub-district, East Jakarta in Oceteber 2018

2) Population and Sample
The population in this study was students in 4th and 5th grade students in elementary school in X Sub-district, East Jakarta. Inclusion criteria are the criteria met in this study, namely 4th and 5th grade students in elementary school, willing to be a subject of the research, able to communicate and write well. While the exclusion criteria in this study are not available when the study was conducted, not willing to take part in the study and those other than 4th and 5th grade students in elementary school.

The number of samples in this study were students 4 and 5 in State Elementary School in X Sub-district, East Jakarta.

The decision was based on the consideration of the supervisor and elementary school teacher. Students in grades 1-3 were not included in the study because of their tight schedule. Students of 6th grade were excluded due to their activity in preparing for final exams.

$$n = 2 \frac{[Z\acute{\alpha}+Z\beta]^2}{X_1-X_2}$$

Description :
N = Number of samples
Zά = Type I error 1.5% =1.96%
Zβ = Type II error ,80%=0.842
s = Standard Deviation = 3.85 (Novianingsih,2012)
(X_1-X_2) = Clinical Judgement (22,9- 21,05) (Novianingsih, 2012)

Based on the formula, the minimum number of samples used in the study is 68 respondents in state elementary schools. From the number of samples above, another 10 percent was added to reserve samples, that is 6.8 students. So the minimum number of samples in this study was 75 students (Sastroasmoro,2011).

3) Dependent and Independent Variable

The dependent variable in this study is sedentary behavior, while the independent variable in this study is the attitude towards nutritional status in State Elementary School in X Sub-district, East Jakarta. This research was conducted in October 2018 at State Elementary School in X Sub-district, East Jakarta.

4) Research Instruments

This study was based on data collected using questionnaire and interview as well as measurements that correlate the dependent and independent variables.

5) Data Analysis

Univariate and bivariate analysis was carried out using computer software to observe the general overview and correlation between the dependent and independent variables. Bivariate analysis was performed using Chi Square analysis..

3. Results

3.1 Regional Overview

The average number of students in each class is 33 students. Extracurricular activities in State Elementary School in X Sub-district, East Jakartaare quite numerous. School health unit have not monitored student's health as well as run other programs optimally. The results of research conducted in State Elementary School in X Sub-district, East Jakarta, 2018 shows that 86 respondents (93.5%) are categorized as overweight in Body Mass Index based on nutritional status, while only 6 respondents (6.5%) are categorized as normal in Body Mass Index based on nutritional status.

3.2 Analysis Univariate

The following tables present the results of univariate analysis, which includes questionnaire, watching television, snacking habit, physical activities, length of sleep, and respondent's attitude inState Elementary School in X Sub-district, East Jakarta, 2018.

3.2.1 Frequency Distribution of Nutritional Status

Table 2: Distribution of Respondents' Nutritional Status in Students of State Elementary School in X Sub-district, East Jakarta, 2018

Nutritional Status	No. of Respondents (n)	No. of Respondents in Percentage (%)
Abnormal Nutritional Statusfrom >1 SD to>2 SD	86	93,5
Normal Nutritional Status from -2 SD to 1 SD	6	6,5
Total	92	100

Source: Secondary Data

Table 1 presents that 86 respondents (93.5%) are categorized in abnormal nutritional status and 6 respondents (6.5%) are categorized in nomal nutritional status.

3.2.2 Frequency Distribution of Watching Television

Table 2: Distribution of Repondents based on Watching Television in Students of State Elementary School in X Sub-district, East Jakarta, 2018

Watching Television	No. of Respondents (n)	No. of Respondents in Percentage (%)
Poor	55	59,8
Good	37	40,2
Total	92	100,0

Table 2 presents that 55 respondents (59.8%) are categorized in poor nutritional status and 37 respondents (40.2%) are categorized in good nutritional status based on their snacking habit.

3.2.3 Frequency Distribution of Respondent's Snacking Habit

Table 3: Distribution of Repondents based on Respondent's Snacking Habit in Students of State Elementary School in X Sub-district, East Jakarta, 2018

Snacking Habit	No. of Respondents (n)	No. of Respondents in Percentage (%)
Poor	62	67,4
Good	30	32,6
Total	92	100,0

Table 3 presents that 62 respondents (67.4%) are categorized in poor nutritional status and 30 respondents (32.6%) are categorized in good nutritional status based on their snacking habit

3.2.4 Frequency Distribution of Respondent's Physical Activities

Table 4: Distribution of Repondents based on Respondent's Physical Activities in Students of State Elementary School in X Sub-district, East Jakarta, 2018.

Physical Activitiy	No. of Respondents (n)	No. of Respondents in Percentage (%)
Poor	57	62,0
Good	35	38,0
Total	92	100,0

Table 4 presents that 57 respondents (62.0%) are categorized in poor nutritional status and 35 respondents (38.0%) are categorized in good nutritional status based on their physical activities.

3.2.5 Frequency Distribution of Attitude

Table 5: Distribution of Repondents based on Attitude in Students of State Elementary School in X Sub-district, East Jakarta, 2018

Attitude of Students of State Elementary School	No. of Respondents (n)	No. of Respondents in Percentage (%)
Poor	41	44,6
Good	51	55,4
Total	92	100,0

Table 5 presents that 41 respondents (44.6%) are categorized in poor nutritional status and 51 respondents (55.4%) are categorized in good nutritional status based on their attitude.

3.3 Bivariate Anlysis

Bivariate analysis was conducted to observe correlation between the independent variables (watching television, snacking, physical activity, and attitude of respondents) and the dependent variable (nutritional status in children).

Table 6: Results of Bivariate Analysis.

Variable	OR	P
Watching TV	6,667 (1,00-44,0)	0,084
Snacking	38,0 (4.0-359)	0,000
Physical Activities	17,1 (2,7 -106,9)	0,003
Attitude	22,5 (3,4 – 145,7)	0,002

4. Discussion

Nutritional status is the physiological state of the body as a result of food consumption and use of nutrients in the body. Nutritional status can be categorized into poor, fair, good and excessive (Almatsier, 2009). To measure nutritional status in children and adolescents, anthropometric measurements based on BB/U, TB/U and BB/TB or BMI/U are employed. Each has advantages and disadvantages in its measurement.

Anthropometric measurement used to observe recent nutritional status is BMI/U. Today, as a developing country, Indonesia has multiple nutritional status problems, including poor nutrition and excessive nutrition. The results of the research conducted in state elementary school in X Sub-district, East Jakarta, in 2018, shows that more than half of the respondents are categorized into excessive nutritional status based on Body Mass Index, specifically 86 respondents (93.5%) with abnormal nutritional status and 6 respondents (6.5%) with normal nutritional status.

Watching television is the cause of excessive nutrition. However, this research does not provide an assessment of what activities carried out by an individual. Measurement of sedentary behavior generally uses questionnaires, while measurement using questionnaires generally has low validity (Atkin et al, 2012) because the questionnaire focuses on measuring the behavior of watching television while sedentary behavior is not only seen from the behavior of watching television.

The results of research shows that more than half of respondents are categorized into excessive nutritional status based on Body Mass Index, observed on 80 students (95.2%) who are categorized into poor nutritional status and watch television more often compared to 6 students (75.0%) who rarely watch television and categorized into good nutritional status. Statistical test resulted in p-value = 0.084, which can be concluded that there is no significant relationship between watching television with nutritional status.

Snacking too often might lead to obesity. Snacks are generally rich in energy but low in nutrition. Obesity in children occurs because of an imbalance between the energy consumed with the energy expended, meaning that the child consume large portions of food but lacks physical activity. Snack supplies at home will encourage someone to consume them even though they are not hungry.

The results of research shows that 76 students (98.7%) are categorized into excessive nutritional status based on Body Mass Index. These respondents were observed to have poor nutritional status and have the habit of consuming snacks more often than those who rarely eat snacks, 10 students (66.7%) who have good nutritional status.

Statistical test resulted in p-value = 0.000, which means that there is a significant relationship between snack foods with nutritional status. In addition, an OR score of 38.0 means that students who often consumes snacks have 38-time of categorizing into poor nutritional status compared to students who rarely eat snacks.

The results of this study are in line with a research conducted by Noviani(2016) at SDN SonosewuBantul Yogyakarta, which shows that a correlation between snacks and nutritional status is observed in 46% of 10-year old children.

Physical activity is an activity that expends energy or uses energy for various activities such as walking, running, aerobics, cycling, gardening and other work that is usually done routinely on a daily basis (USDA.gov, 2006). Sedentary behavior is part of physical activity from the perspective of energy consumption, so it has several characteristics.

Based on the nutritional status based on Body Mass Index, the results of this research shows that more than half of respondents are categorized into 77 students (97.5%) with poor nutritional status have conducted good physical activity and 9 students (69.2%) with good activities and good nutritional status.

Statistical test resulted in p-value = 0.003, which can be concluded that there is a significant correlation between physical activity with excessive nutritional status. In addition, an OR score of 17.1 means that students who have good physical activity have a 17-time higher risk of having nutritional status compared to students who rarely do activities. The results of this study are consistent with a study conducted by Muhammad Abdul (2017) which shows positive and significant correlation between physical activity and nutritional status.

Attitude as a trait or long-term disposition has explored some personality characteristics that contribute to food selection. Attitudes can also be seen as long-term or short, unstable (easily changeable) tendencies that may be changed.

Based on the analysis, 79 students (97.5%) who have nutritional status have bad attitudes compared to students (63.6%) who have good attitudes Statistical test resulted in p-value = 0.002, which can be concluded that there is a significant correelation between good attitude and nutritional status. In addition, an OR score of 22.5 means that students who eat snacks often have 22.5-time higher risk of having excessive nutritional status compared to students who rarely eat snacks.

There is a positive correlation between parents' knowledge and attitudes on balanced nutrition with the nutritional status of children aged under five, indicated by cross table data, which presents that from 30 respondents who have high knowledge, 29 respondents or 96.7% have toddlers with normal weight, while from attitudes which were observed on 26 respondents, 26 respondents or 100% with good attitude have toddlers with normal weight. The results of this study are consistent with the research conducted by RellaDwiSetiawan (2010) which suggested that there is a positive correlation between knowledge and attitudes of parents about balanced nutrition with the nutritional status of children under five.

5. Conclusion and Recommendation

5.1 Conclusion

1) Based on the study conducted in students of state elementary school in X sub-district, East Jakarta in 2018, the result shows that 86 respondents (93.5%) are categorized as respondents with high nutritional BMI and 6 respondents (6.5%) are categorized in normal nutritional status.
2) There was no statistical correlation between duration of watching TV, duration of sleeping and nutritional status in students of state elementary school in X sub-district, East Jakarta in 2018.
3) There was a correlation between consuming snacks, physical activity, as well as attitude and nutritional status in students of state elementary school in X sub-district, East Jakarta in 2018.

5.2 Recommendation

To minimize risk factors for nutritional status in students of state elementary school in X sub-district, East Jakarta, more health promotion on ideal weight and balanced diet should be conducted by school and related institutions. Health promotion should also include recommendations to exercise regularly and consume fibrous food like fruits and vegetables.

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7. Research Contribution

Informing contributions of each researcher listed in the manuscript

8. Conflict of Interest

Statement regarding conflict of interest in the paper

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