Relationship Between Eating Patterns And Sleep Patterns With The Incidence Of Obesity In School-Age Children At Petra Christian Elementary School, Kediri

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ARTICLE INFO

Article history:
Received: 10th April 2016
Revised: 22nd May 2016
Accepted: 20th June 2016

Keywords:
Obesity incident
Feed pattern
Sleep pattern

ABSTRACT

Obesity is a condition o mass body indeks (BMI) of the gender. Obesity on children hood could make a deaseslike diabetic type 2. Beside that, could take a risk for being obesity in adult and it has couse metabolic glucose effects and degeneratif deaseas like heart deaseas and vesicular obstructions. The desingn of the research was observational with quantitative cross sectional approached. Respondents was taking with purpose sampilng technique. The population in this research were all sudents in Kristen Petra primary school are 466 respondents. Independent variable in this research was feed pattern and sleep partern and dependent variable was obesity incident. The rusult being analyzed by ordinal regression test wit α=0,05. The result of this research showed most of respondent has feed pattern good category that 22 respondents (61,2%), some respondent has sleep patter in enough category that 25 respondents (69,4%). Most of respondent with obesity incident get included in normally category that 22 respondents (61,1%). The analyse results showed that 0,000<α=0,05 then ho was a relationship beetween feed and sleep patterns to obesity incidents of childrenin Kristen Petra Primary school Kediri. Based on the results above, the conclussion of this research is there is relationship of feed and sheep pattern to obesity incident. It is because imegular feed pattern and sleep pattern of children could give bad effect for their grown time.

I. Introduction

Obesity is a condition where a child's body mass index (BMI) is above the 95th percentile on the child growth chart according to gender. Childhood obesity can increase the incidence of type 2 diabetes mellitus (DM). In addition, it is also at risk of becoming obese as an adult and has the potential to cause glucose metabolism disorders and degenerative diseases such as heart disease, blood vessel blockages and others. In addition, obesity in children aged 7-12 years can also reduce intelligence levels because children's activity and creativity decrease and tend to be lazy due to excess weight6.

This is exacerbated by the habit of consuming unhealthy snacks with high calorie content without sufficient consumption of vegetables and fruits as a source of fiber. Children aged 7-12 years are a group that is vulnerable to overnutrition. Therefore, children in this age range need attention from the perspective of changing daily eating patterns because the food that is usually consumed since childhood will form subsequent eating habits.

The incidence of obesity has increased 2 (two) times in children aged 2-5 years and 12-19 years, even increasing three (3) times in children aged 7-12 years. In Indonesia, the cause of obesity prevalence in children aged 7-15 years increased from 5% in 2001 to 16% in 2008. Another obesity factor is the lack of physical activity, both daily activities and structured physical exercise. Physical activity carried out from childhood to old age will affect lifelong health. Obesity in childhood will increase the risk of obesity in adulthood.

The prevalence of childhood obesity has increased in various countries, including Indonesia. The high prevalence of childhood obesity is caused by the growth of urbanization and changes in a person's lifestyle including energy intake. According to WHO, one in 10 (ten) children in the world are obese.

The prevalence of obesity increases from year to year, both in developed and developing countries. Based on SUSENAS, the prevalence of obesity (>120% of the WHO/NCHS standard median) in toddlers has increased both in urban and rural areas. In urban areas in 2000, it was 4.6% of males and 5.9% of females, increasing to 6.3% of males and 8% of females in 2002 and in rural areas in 2003 it was 2.3% of males and 3.8% of females, increasing to 3.9% of males and 4.7% of females in 2004.

The national prevalence of general obesity in the population aged ≤ 15 years is 10%, as many as 12 provinces have a prevalence of general obesity in the population aged ≥ 15 years above the national prevalence, namely Bangka Belitung, Riau Islands, DKI Jakarta, West Java, East Java, East Kalimantan, North Sulawesi, Central Sulawesi, Gorontalo, North Maluku, West Papua, and Papua.

The central prevalence in the population aged ≤ 15 years is 18.8%. A total of 17 provinces have a prevalence of central obesity in the population aged ≥ 15 years above the national prevalence, namely North Sumatra, Bangkulu, Bangka Belitung, Riau Regency, DKI Jakarta, West Java, East Java, Banten, Bali, East Kalimantan, North Sulawesi, Central Sulawesi, Central Sulawesi, Gorontalo, North Maluku, and Papua (Riskesdas 2007).

The causes of obesity are considered 'multicausal' and very multidimensional because they not only occur in high socio-economic groups, but also often occur in middle to lower socio-economic groups. Obesity is influenced by environmental factors compared to genetic factors. If obesity occurs in children before the age of 7-12 years, then the risk of obesity can occur when they grow up. Obese children usually come from families who are also obese. Nutritional problems are often experienced by groups at risk of malnutrition who require adequate nutrients for growth. The group of children to early adolescents (around 10-14 years) is an age group at risk of experiencing nutritional problems, both malnutrition and overnutrition1

Based on the law of thermodynamics, obesity is caused by a positive energy balance, as a result of an imbalance between energy intake and energy output, resulting in excess energy stored in the form of fat tissue. Most of these energy balance disorders are caused by exogenous/nutritional factors (primary obesity) while endogenous factors (secondary obesity) due to hormonal disorders, syndromes or genetic effects are only about 10%. The cause of obesity is not yet known for certain. Obesity is a multifactorial disease that is thought to be mostly caused by the interaction between genetic factors and environmental factors, including activity, lifestyle, socio-economic and nutritional, namely eating behavior and giving solid foods too early to babies.

From the description above, the researcher is interested in conducting a study entitled "The Relationship between Eating Patterns and Sleep Patterns with the Incidence of Obesity in School-Aged Children Aged 7-12 Years at Petra Christian Elementary School, Kediri."

II. Methods

This type of research is observational with a quantitative cross-sectional approach. The population in this study were all students at SD Petra Kediri as many as 466 students. The sample in this study was some of the students of SD Petra Kediri as many as 36 respondents. The sampling technique in this study was Accidental Sampling.

In this study, the type of data used is primary data to determine the relationship between eating patterns and sleeping patterns with obesity in school-age children at Petra Christian Elementary School, Kediri. The research instrument used is a questionnaire.

Data processing is done by editing, namely by re-checking the observer data. Coding is done by giving a code to each characteristic. The next process is data analysis. Data analysis is done using the Ordinal Regression analysis test $\alpha = 0.05$ and using a computer to assess the relationship between eating patterns and sleep patterns with the incidence of obesity in school-age children at Petra Kediri Christian Elementary School.

III. Results and Discussion

1. Characteristics of Subject

The characteristics of the subjects in this study include age and gender. The description of the characteristics of the subjects is as in table 1.

Table 1. Eating Patterns of School-Age Children at Petra Christian Elementary School, Kediri, December 10 – 16, 2014

No.	Dietary habit	F	%
1	Bad	10	27.8
2	Good	26	72.2
Total		36	100

Source: Data Analysis Results

Table 1 shows that most respondents have a good eating pattern, namely 26 respondents (72.2%) and almost half of the respondents are still bad, namely 10 respondents (27.8%) of the total 36 respondents.

Table 2. Sleep Patterns in School-Age Children at Petra Christian Elementary School, Kediri, December 10 – 16, 2014

No.	Sleep Patterns	F	%
1	Not enough	10	27.8
2	Enough	26	72.2
Total		36	100

Source: Data Analysis Results

Table 2 shows that more than half of the respondents have a sleep pattern in the sufficient category, namely 26 respondents (72.2%) and almost half of the respondents are still lacking, namely 10 respondents (27.8%) of the total 36 respondents.

2. Bivariate Analysis

In this study there is one hypothesis, namely "there is a relationship between eating patterns and sleeping patterns with the incidence of obesity in school-age children. This hypothesis is the original or alternative hypothesis (H1), then the hypothesis is changed to the null hypothesis (H0), to "there is no relationship between eating patterns and sleeping patterns and the incidence of obesity in school-age children.

To test this hypothesis, the Ordinal Regression test technique between groups (independent samples West) is used. And the calculation results obtained include, statistical tables and summaries of ordinal regression tests.

The results of data analysis on sleep patterns show that the p value = 0.182> α = 0.05 so that H1 is rejected and H0 is accepted, thus there is no relationship between sleep patterns and the incidence of obesity in school-age children at Petra Christian Elementary School, Kediri. While the results of data analysis on eating patterns show that the p value = 0.000 <α = 0.05 so that H0 is rejected and H1 is accepted, thus there is a relationship between eating patterns and the incidence of obesity in school-age children at Petra Christian Elementary School, Kediri. Based on the pseudo R-square nagelkerke value, a value of 0.524 is obtained, which means the closeness of the relationship is in the moderate category.

Dietary patterns are a description of the types, quantities, and composition of food ingredients eaten every day by one person which is a characteristic of a particular community group6. Dietary patterns are a way or effort in regulating the quantity and types of food with a certain purpose such as

maintaining health, nutritional status, preventing or helping to cure diseases2. In the big Indonesian dictionary, pattern is defined as a system, way of working or effort to do something3. Some factors that influence a person's diet include cultural factors, religion/belief, socioeconomic status, personal preference, hunger, appetite, satiety and health.

Children do not understand the nutrients contained in food and the function of nutrients in the body. Someone who does not understand the principle of the function of nutrients contained in food will have difficulty in choosing foods needed by the body. Then this will cause deficiencies that will affect nutritional status7. Children should know what types of food to consume, many children prefer those that are high in calories and low in vitamins and minerals, of course this can continue to cause the body to become fat. It is difficult for children to change these eating habits10.

This condition is supported by the age of the child. Based on the analysis results, it is known that the respondents are mostly 10 years old with a diet that is included in the good category, namely 6 respondents (16.6%). This means that the older the age of school children, the better the awareness of body shape. Therefore, there are efforts to regulate diet. It is proven that the older the age of school children, the better their diet and vice versa.

Another factor that supports diet is gender. Based on the analysis results, it is known that most respondents are female with diets in the good category, namely 13 respondents (36.1%). This shows that girls are very concerned with their physical appearance. Therefore, more girls have good diets. Generally, girls are more sensitive to body shape. If there is even a little obesity, they will try to regulate their diet or rather limit their food intake.

Sleep is a regular, repetitive and easily reversible (awakened) state of the organism characterized by a relatively immobile and “less responsive” body state (the body's response threshold increases) compared to waking time4. In general, normal sleep patterns begin with a sleepy stage. During this sleepy period, external stimuli can still be easily received and make you wake up or regain consciousness. If the sleep process continues, then consciousness decreases and a stage often referred to as the chicken sleep stage arises. The next stage is the last stage, namely the deep sleep stage. Now experts have succeeded in finding two sleep patterns, namely the normal sleep pattern (Non REM) and the paradoxical sleep pattern (REM). Rest and sleep are basic needs needed by everyone5. A number of compounds act as neurotransmitters and are involved in the sleep process. Norepinephrine, acetylcholine, followed by dopamine, serotonin and histamine are involved in the inhibition of GaBa (gamma aminobutyric acid (Wirakusumah, 2003). Many factors influence this sleep pattern, including child development factors, psychological stress, motivation to sleep or wake up, cultural factors (Ruth F, Constance J. Himle, 2006).

During sleep all body functions are filled and renewed again. Rest does not only include sleep, but also relaxation, changes in activities, eliminating all work pressures or other problems (Dian, 2006). According to Aman (2005), sleep is very important for the human body for brain tissue and the function of human organs because it can restore energy and affect the body's metabolism. In addition, it can also stimulate assimilation power because sleeping too long can actually cause unhealthy things because the body absorbs or assimilates metabolic waste which results in the body becoming weak and unenthusiastic when waking up so that sleep functions to restore energy for daily activities, improve conditions that are sick, the body stores energy during sleep and a decrease in basal metabolic rate stores the body's energy reserves.

Based on the results of the study, it is known that most respondents have a sleep pattern in the sufficient category. This is because school-age children are still in the development stage with the characteristic of many activities such as playing and various activities at school. When carrying out these activities, children only feel happy, never feeling tired. At night, children will generally fall asleep soundly. Therefore, the standard sleep needs of school-age children of around 11 hours/day can be met.

This condition is certainly also supported by the child's psychological stress. Generally, school age is in a happy period without the burden of life that must be borne. Therefore, school age children are almost never stressed. This condition will greatly help optimal sleep patterns. A calm mind without stress will make a person psychologically calm, so it greatly helps their sleep patterns.

Obesity is excess fat in the body, which is generally stored in subcutaneous tissue (under the skin), around the organs and sometimes extends into the organ tissue8. Obesity is a condition that shows an imbalance between height and weight due to fat tissue in the body so that excess weight

occurs beyond the ideal size (Sumanto, 2009). The occurrence of obesity is more determined by eating too much, too little activity or physical exercise, or both8. Many factors influence obesity such as genetic factors, hormones, drugs, food intake, physical activity9. Indirect factors are knowledge about nutrition, eating arrangements (overeating, snacking habits, liking to eat in a hurry or choosing and processing food incorrectly (Ruth F, Constance J. Himle, 2006).

IV. Conclusion

There is a relationship between eating patterns and the incidence of obesity in school-age children at Petra Christian Elementary School, Kediri (Ordinal Regression, $p = 0.000 < 0.05$, then Ho is rejected). And there is no relationship between sleeping patterns and the incidence of obesity in school-age children at Petra Christian Elementary School, Kediri (Ordinal Regression, p value = $0.182 < 0.05$, then Ho is rejected).

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