

Sedentary Activity with Overweight and Obesity in Children at Kabupaten Aceh Barat

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Abstract: Nutrition problems in Indonesia are already classified as multiple nutritional problems, not just nutritional deficiency problems, but the prevalence of overweight and obesity also increases. In 2010 the prevalence of overweight and obesity in Aceh province was 11.2 percent and in 2013 was 14.8 percent resulting in an increase of 3.6 percent. One of the causes of obesity is physical activity or sedentary activity. This study wanted to analyze the factors physical activity or sedentary activity that cause overweight and obesity in children at Kabupaten Aceh Barat. This study was an observational analytic study with cross sectional design aimed at assessing relationship of sedentary activity on obesity-related weight status in children at Kabupaten Aceh Barat. The sample size is 289 students. Determination of child obesity status using Body Mass Index based on Age (IMT/U), that is overweight and obesity if $IMT/U > 1.0$ SD. The sedentary activity data were obtained through questionnaire. There are 51.90% of 289 respondents who had overweight and obesity. There is a significant relationship between sedentary activity with overweight and obesity status with a p value < 0.001 and an OR value of 3.71. There is a significant relationship between sedentary activity with overweight and obesity.

Keywords: Children, Obesity, Sedentary activity

Introduction

Nationally, the obesity problem in children aged 5-12 years is still high at 18.8 percent, consisting of 10.8 percent fat and 8.8 percent very fat. In 2010 the prevalence of overweight and obesity in Aceh province was 11.2 percent and in 2013 was 14.8 percent (8.9 percent fat and 5.9 percent very fat) resulting in an increase of 3.6 percent. Of the 23 districts in Aceh, Kabupaten Aceh Barat had a higher very fat prevalence over provincial rates (Kemenkes, 2010).

Factors that affect the incidence of obesity include daily living habits, such as diet, physical activity, and sleep patterns and will trigger some disease, physical and psychological problems, and social isolation in children. Socioeconomic status is identical with education and family income. According to the results of research by Humaroh (2013), it is stated that the average heavy physical activity in non-obese children is higher than in obese children. Moreover, at this age children spend more time on activities at school with a variety of activities at school that are quite dense, resulting in an increase in appetite. Children who eat a lot but are less active, the energy that is produced and enters the body is far more than what is expended for doing activities.

Sedentary behavior is the behavior of sitting or lying down on a daily basis both at work (working at the computer, reading, etc.), at home (watching TV, playing games, etc.), on trips / transportation (bus, train, motorbike), but not including sleep time. American research on sedentary behavior using cut off points < 3 hours, 3-5.9 hours, ≥ 6 hours, shows that a moderate reduction in activity to < 3 hours per day can increase life expectancy by 2 years (Katzmarzyk & Lee, 2012). Watching television every day for 2 hours is significantly associated with an increased likelihood of becoming overweight (Khader et al., 2009)

Methods

Analytical Survey research methods with Cross Sectional Design. This study wanted to analyze the factors physical activity or sedentary activity that cause overweight and obesity in children at Kabupaten Aceh Barat. This study was an observational analytic study with cross sectional design aimed at assessing relationship of sedentary activity on obesity-related weight status in children at Kabupaten Aceh Barat. The sample size is 289 students. Determination of child obesity status using Body Mass Index based on Age (IMT/U), that is overweight and obesity if $IMT/U > 1.0 SD$. The sedentary activity data were obtained through questionnaire.

Result

Based on the univariate analysis, it was found that the proportion of children who were overweight and obese was 150 (51.90%) and those who were not obese were 139 (48.10%). The proportion of children's age does not differ much, namely 54.33% for children aged 7-9 years and 45.67% for children aged 10-12 years. Likewise with the univariate results of the respondent's gender. From the results of univariate analysis, it was found that the proportion of the sex of children was almost the same, namely 49.83% for boys and 50.17% for girls. More than half of the respondents have parents who are highly educated, with a high level of maternal education of 70.93% and high education of fathers of 72.32 percent.

Based on the univariate analysis, it was found children who had sedentary activity for more than 8.5 hours had 3.71 times greater risk of overweight and obesity than those who had sedentary activity less than 8.5 hours. Children who had light activity for more than 4 hours had 1.62 times greater risk of overweight and obesity than children who had light activity less than 4 hours. Based on bivariate result there is no significant relationship between moderate and heavy activity with overweight and obesity with p-value of 0.951 and 0.581 respectively.

Table 1. Characteristics of research subjects

Variabel	N	%
Nutritional status		
<i>Overweight</i> and obesity	150	51,90
Not <i>Overweight</i> and obesity	139	48,10
Age		
7-9 years	157	54,33
10-12 years	132	45,67
Gender		
boy	144	49,83
Girl	145	50,17
Income of Parents		
high	151	52,25
low	138	47,75

Table 2. Factor Sedentary activity with overweight and obesity

Variabel	<i>Overweight dan Obesitas</i> (n=150)	Normal (n=139)	Total (n=289)	p	OR	95% CI
Aktivitas Sedentari						
>8,5 jam	96(68,09)	45(31,91)	141(100,00)	<0,001*	3,71	2,21-6,23
<8,5 jam	54(36,49)	94(63,51)	148(100,00)			

Discussion

In sedentary activities such as watching TV, playing video games, computers / cellphones / laptops / tablets, reading, sitting / eating and others, it can be seen that the respondents who have sedentary activities of more than 8.5 hours per day are 64.00% (96 respondents) who obese status. The results of the bivariate analysis showed that there was a significant relationship between temporary activity and obesity status. The same statement is also seen in Musadat's (2010) study which states that there is a real relationship between physical activity and obesity in children. This is in line with the research of Kusumajaya (2007) which states that the incidence of obesity is more in respondents whose exercise habits are less than once every 3 weeks. This can also be seen in this study where respondents only often exercise during sports hours at school, rarely exercise outside of school. Similarly, research by Zhang et al., (2016) in China stated that children who do more sedentary activities are 1.24 times more likely to become obese.

Many studies have shown the same results. Previous research conducted by Arundhana (2013) has proven that obese children tend to have more moderate and light activity duration than non-obese children. Children who are overweight tend to have more sedentary activity (Anderson et al., 2008). Low physical activity but excessive energy intake can increase obesity (Crespo et al., 2001), although the percentage of excess energy intake in this study is less than the results of previous studies. In this study states that there is a relationship between moderate and light physical activity with the incidence of obesity in children. Temporary behavior poses a risk to energy reduction (Khader et al., 2009).

In contrast to this study, based on research by Mustaq (2011), there is no relationship between physical activity and obesity, namely that obese respondents have lower physical activity compared to obesity. Likewise, the results of Humaroh's (2013) study which stated that the average heavy physical activity in non-obese children was higher than in obese children. The results of this study are strongly supported by data from Riskesdas (2013) which states that the percentage of physical activity of school-age children in West Aceh is classified as less active, namely 71.1% and is above the average percentage of Indonesia, seen in high sedentary activity.

Conclusions

There are 51.90% of 289 respondents who had overweight and obesity. There is a significant relationship between sedentary activity with overweight and obesity status with a p value <0.001 and an OR value of 3.71. There is a significant relationship between sedentary activity with overweight and obesity

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