

Original Research Article

DOMINANT FACTOR INFLUENCE OBESITY IN SCHOOL-AGE CHILDREN

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Abstract

Background: Obesity is a common problem in children today. There is an assumption that parents who say fat is a healthy child. The activities of children who only play games or watch television and unhealthy eating patterns cause obesity to increase.

Objectives: The purpose of this study was to analyze the dominant factors that influence obesity in school-age children in Pojokrejo Village, Kesamben, Jombang.

Methods: This study used a cross-sectional analytic design. The population of this study were all mothers and children aged 6-12 years in Pojokrejo Village, Kesamben District, Jombang Regency who were obese as many as 62 children. The sample in this study were 49 respondents who were taken by simple random sampling technique. Data collection using questionnaires and observation sheets. Data were analyzed using a linear regression statistical test.

Results: There is an influence of the child's age, mother's age, mother's education, parental income, occupation, diet and child activity on obesity in school-age children (sig 0.000). Of the seven factors, there is no factor that dominates obesity in school-age children.

Conclusion: Based from the factors that influence obesity, there are no factors that dominate obesity in school-age children.

Keywords: Dominant Factor, Obesity, School-age Children

INTRODUCTION

Obesity is a common problem in children today. Obesity or being overweight can have negative effects on health. According to the Republic of Indonesia Ministry of Health in 2017 Obesity is the accumulation of abnormal fat that can interfere with health. If obesity occurs during infancy, it is likely that obesity will persist into adulthood. Some people still have the notion that obese toddlers indicate healthy toddlers and not as a problem that needs

to be treated. (Indanah, Sukesih, Fairuzzah, & Khoiriyah, 2021). In Pojokrejo Village, it shows that there is still an assumption that parents who say that being fat is a healthy child, also supported by the activities of children who only play games or watch television and unhealthy eating patterns cause obesity to increase.

Overall, around 13% of the world's adult population is obese, consisting of 11% men and 15% women. Meanwhile, in children and

adolescents aged 5-19 years, more than 340 million are overweight and obese. Furthermore, in 2019 around 38.2 million children under the age of 5 years are estimated to be overweight or obese (WHO, 2020). Nationally based on data from Basic Health Research in 2018 the problem of overweight in school-age children in Indonesia is still relatively high, the national prevalence of overweight and obesity in children is 9.2%. The prevalence of overweight and obesity in children aged 5-12 years according to WHO, obesity causes 10.3% of all deaths in the world. (Pratiwi & Sapriyani, 2018) seen by gender, namely overweight in boys by 10.4% and obesity by 10.7%. Meanwhile, the prevalence of overweight in girls was 11.2% and obesity was 7.7%. Then when viewed based on place of residence, children who live in urban areas tend to be more obese than those who live in rural areas (Ministry of Health, 2018).

Based on data from the Jombang District Health Office in 2021 the number of obesity in toddlers and school-age children is 7,515 children. Based on data from the Jombang Kesamben Health Center, it was found that there were 115 cases of obesity in children. The results of a preliminary study conducted on children aged 6-12 years in Pojokrejo Village Kesamben Jombang by weighing the children's weight and also calculating body mass index (BMI) for 7 children aged 6-12 years obtained data from 4 out of 7 children (57%) body mass index in the obese category with an average BMI value of 33, while 3 out of 7 children (43%) showed a body mass index value in the normal high or overweight category with an average BMI value of 28.

The causes of obesity are diet, level of nutritional intake, level of physical activity carried out by individuals, as well as socioeconomic conditions and even several studies have found a relationship between insomnia or lack of sleep as a risk factor for obesity. Obesity has an impact on children's growth and development, especially aspects of psychosocial development. Obese children have the potential to experience various

diseases that cause death, including cardiovascular disease, diabetes mellitus, and others. Obesity in childhood also has short-term and long-term psychosocial consequences such as decreased self-confidence, eating disorders, and lower health in relation to quality of life. Obesity at an early age will be carried into adulthood, which has an impact on increasing the risk of degenerative diseases.

Efforts that can be made to prevent obesity include encouraging mothers to pay attention to food intake in children. Providing knowledge to mothers to provide balanced nutrition for children who cook it themselves, maintain a diet at school and outside of school, avoid consuming fast food. Explain to the mother to reduce giving snacks or also foods that contain lots of carbohydrates. Parents pay more attention to children's physical activity to prevent weight gain and to maintain body immunity (Mutia, 2022).

Objective(s): The purpose of this study was to analyze the dominant factors that influence obesity in school-age children in Pojokrejo Village, Kesamben, Jombang.

METHODS

Study Design

This study used a cross-sectional analytic design.

Setting

This research was conducted in Pojokrejo Village, Kesamben, Jombang.

Research Subject

The population of this study were all mothers and children aged 6-12 years in Pojokrejo Village, Kesamben District, Jombang Regency who were obese as many as 62 children. The sample in this study were 49 respondents who were taken by simple random sampling technique.

Instruments

The instruments in this study were questionnaires about parents' employment and

education, physical activity questionnaires using the Physical Activity Questionnaire for Children (PAQ-C) questionnaire adopted by Pranata in 2017, dietary questionnaires using Karinda's research instrument in 2018 and sheets observation of weight and height.

Data Analysis

To find out the dominant factors that influence obesity in school-age children, a statistical regression test was carried out using SPSS 26.

Ethical Consideration

In this study, no ethical test was carried out because no intervention was given to the respondents. Before starting the research, the researcher submitted a permit to Bakesbangpol Jombang. Researchers then collect by selecting respondents according to the criteria. Respondents who have been selected are given an explanation of the research objectives. Respondents who were willing to be asked to sign a consent form became respondents.

RESULTS

Distribution of the frequency of factors that influence obesity in school-age children showed in Table 1.

Table 1. Distribution of the frequency of factors that influence obesity in school-age children

Category	n	%
Child Age		
6 - 7	14	28.60
8 - 9	27	55.10
10 – 12	8	16.30
Total	49	100.00
Mother Age		
< 20 th	0	0.00
20–35 th	29	59.20
>35 th	20	40.80
Total	49	100.00
Parental Income		
< minimum wage	14	28.60
≥ minimum wage	35	71.40
Total	49	100.00
Mother Education		
Elementary School	2	4.10
Junior High School	17	34.70
Senior High School	28	57.10
Diploma III/Bachelor	2	4.10

Category	n	%
Total	49	100.00
Occupation		
Private	7	14.30
Self-employed	22	57.10
Civil servant / Army / Police	1	34.70
Housewife	19	4.10
Total	49	100.00
Diet		
Good	27	55.10
Defisient	22	44.90
Total	49	100.00
Child Activity		
High	22	44.90
Low	27	55.10
Total	49	100.00
Obesity		
Obesitas level 1	21	42.90
Obesitas level 2	22	44.90
Obesitas level 3	6	12.20
Total	49	100.00
Linear Reg. B = 36.012, t = 7.018, sig <0.01		

The results showed that most of the respondents had children aged 8-9 years totaling 27 respondents (55.1%), most of the mothers were 20-35 years old numbering 29 respondents (59.2%), most of the income ≥ UMK numbered 35 respondents (71.4%), most of the educational backgrounds of high school mothers were 28 respondents (57.1%), almost half of them were self-employed (opening a business, trading, selling) as many as 22 respondents (57.1%), most of them eating patterns in the good category as many as 27 respondents (55.1%), most of the respondents had low physical activity as many as 27 respondents (55.1%), and almost half of the respondents were included in the category of obesity level 2 as many as 22 respondents (40.7%)).

Based on the results of the linear regression statistical test using SPSS 26, it is known that B = 36.012, t = 7.018, sig. <0.01 factors of child age, mother's age, mother's education, parental income, occupation, diet and child activity affect obesity in school-age children. Of the seven factors, there is no factor that dominates obesity in school-age children.

DISCUSSION

Based on the results of the linear regression statistical test using SPSS 26, it is known that $B = 36.012$, $t = 7.018$, $\text{sig} < 0.01$, the factors of child's age, mother's age, mother's education, parental income, occupation, diet and child activity affect obesity in school-age children.

Based on table 1.1 it shows that most of the respondents had children aged 8-9 years with a total of 27 respondents (55.1%), most of the mothers aged 20-35 years with a total of 29 respondents (59.2%). According to Wawan (2010) stated that the more mature, the level of maturity and strength of a person will be more mature in thinking. School-age children have characteristics that involve a lot of activity, are easily attracted to new foods without paying attention to their nutritional content. They only see food from attractive packaging. The child has not been able to think whether the food he eats has good content for him.

The amount of fast food that is often consumed by children triggers the risk of obesity in school-age children. Mothers aged 20-35 years are mature enough to take good care of their children. aged 20-35 years are considered to have sufficient ability and knowledge so that mothers can consider the food to be given to children. Mothers have a tendency to meet the nutritional needs of children with good nutrition without being balanced with appropriate activities. This condition has an impact on increasing the child's excess weight.

Based on Table 1 it shows that the majority of mothers have a high school educational background as many as 28 respondents (57.1%). The level of education of parents can also indirectly affect the occurrence of obesity in children. The level of education is directly related to parents' understanding and knowledge of nutritional needs or good and healthy eating habits for children. A low level of education will affect poor eating behavior and inadequate nutritional intake in children

and vice versa at a low or basic level of education (Suhendro, 2016).

The respondent's educational background influences the respondent's information and knowledge about the causes of health problems. Respondents who have a higher educational background have enough information to be able to provide care for their children, especially in terms of providing nutrition to children, although sometimes with higher education they are also busy working so that sometimes they cannot provide proper supervision of growth and development. child development. Respondents with secondary and low educational backgrounds have poor information and insight, especially regarding the fulfillment of nutrition in toddler mothers, so they do not supervise the nutrition consumed by children and even parents tend to allow children to consume food as they like without paying attention to nutritional content. of the food.

Based on Table 1, it shows that almost half of the respondent's mothers are self-employed (opening a business, trading, selling) as many as 26 respondents (48.1%). Economics is a factor that influences children's eating patterns. Children with high family income, the child's nutritional intake will be fulfilled properly, but sometimes children can also consume fast food or fast food which also plays a role in increasing the occurrence of obesity. The increase in income encourages people to choose foods of higher quality. The selection of food ingredients began to shift towards the use of more refined foods. Materials that have undergone purification often have lost some of their nutritional content, especially fiber, which the body really needs (Suhendro, 2016).

Respondents who work as self-employed respondents can be said to have sufficient income and are able to meet the nutritional needs of their children, so mothers allow children to buy food according to children's tastes without limiting and also paying attention to children's nutritional content. This situation affects the eating habits of children who tend to consume foods that are high in fat and calories.

Besides that, the mother's work also keeps them busy at work so that parents, especially mothers, do not understand and monitor the food they consume whether it contains good nutrition or not.

Based on Table 1, it shows that the majority of respondents have a good eating pattern, with 27 respondents (55.1%). The results of this study are in accordance with Sriwahyuni's research (2021), the results of a bivariate analysis show that there is a relationship between a fast food diet and the incidence of obesity in children with a value of $p=0.031 < \alpha=0.05$. The conclusion in this study is that a fast food diet can increase body weight if it is consumed more than 2 times a week. Suggestions to pay attention to fast food eating patterns consumed by children which can cause obesity. The diet that triggers the occurrence of overweight and obesity is consuming large portions of food (more than needed), high energy, high fat, high simple carbohydrates and low fiber (Ministry of Health RI, 2016).

According to Sulistyoningih (2011) the eating pattern that is formed is very closely related to one's eating habits. In general, the factors that influence the formation of eating patterns are economic, socio-cultural, religious, educational, and environmental factors. Consuming high-calorie foods such as fast food, baked goods, and snacks contributes to weight gain. Foods high in fat are usually high in calories. Soft drinks, snacks, candy, and desserts can also cause weight gain. Foods and drinks like this usually have a high calorie and sugar or salt content.

The wrong diet will have a negative impact even though the food is healthy food. The body needs a minimum of nutrients consisting of carbohydrates, proteins, fats, vitamins and minerals. Each food contains certain nutrients that differ in levels from other foods. The body requires a series of nutrients in certain levels.

Based on the cross-tabulation between eating patterns and the age of the children, it was found that most of the children aged 8-9 years were 27 respondents (55.1%) and of the 27 respondents, most of their eating patterns

were in the good category, 17 respondents (63%). Almatsier (2012) explained that diet can be interpreted as a habit of staying in relation to food consumption, namely based on the type of food: staple food, protein sources, vegetables, fruit, and based on frequency: daily, weekly, ever, and never. In terms of the choice of food and when to eat humans are influenced by age, personal tastes, habits, culture and socio-economic

School-age children need calories that are quite high because the activities they do include activities that are quite dense which are also supported by the needs of the development period. Besides that, parental supervision also affects children's eating habits and frequency, parents try to make sure their children bring food from home so they can control their children's eating patterns properly.

The results of this study are in accordance with Widiyawati's research (2019) which showed that respondents who had light physical activity were (34.3%), moderate (57.4%), and heavy (11.1%). Respondents who were obese (35.2%) and not obese (64.8%). The statistical test results obtained a value of $p = 0.000$ so it can be concluded that there is a relationship between physical activity and the incidence of obesity in school children at SD Mardi Rahayu Ungaran, Semarang Regency. According to Pranata (2017) physical activity is the movement of the body due to the activity of the skeletal muscles which results in energy expenditure. Physical activity consists of activities during work, sleep and at leisure (formal and non-formal activities). Everyone does physical activity to survive. The amount of variation between individuals depends on individual lifestyle and other factors. To maintain health, it is necessary to have a balance between food and energy sources that must be spent only to remove these remains.

The low physical activity of children thereby reducing the activities carried out by children, the reduced interest of children in playing outside the home after school because they prefer to watch television or play games which causes light activity to be higher than

moderate activity. In a week, children only do sports activities about 1-2 times even though these activities if done properly can reduce body fat and prevent the incidence of obesity in school children. In addition, the types of daily activities that most children do are playing gadgets and watching TV while lying down with a duration of more than 6 hours, this is certainly not good to do continuously. Parents tend to accustom children to activities that are less useful. Lots of parents nowadays prefer to give a gadget to children rather than children crying or disturbing parents' busy lives, even though at school age children still don't deserve to get it. Strangely, this sometimes becomes a competition for parents or guardians so that the social status of children is not underestimated. When children start to become addicted to gadgets, children rarely do activities outside the home and are busy playing with gadgets.

Based on Table 1 it shows that the majority of children aged 8-9 years are 27 respondents (55.1%). Of the 27 respondents, it was found that most of them had low activity as many as 15 respondents (55.6%) and 12 respondents (44.4%) had high activity. According to Wawan (2010) stated that the more mature, the level of maturity and strength of a person will be more mature in thinking. In terms of public trust, people who are not yet mature are trusted by people who are not yet mature. This will come from experience and maturity of the soul. Children aged 6-12 years cannot think about the importance of doing physical activity so they are lazy to do it and children often sit watching television and playing online games, children who are less physically active then these children can develop obesity

Based on Table 1 it shows that almost half of the respondent's mothers work as entrepreneurs (opening a business, trading, selling) as many as 22 respondents (57.1%) of the 22 respondents most of the children's activities are classified as low activities as many as 13 respondents (59.1%) and 9 respondents (40.1%) classified as having high activity. According to Wawan (2010) work is not a source of pleasure, but more a way of

earning a living which is boring, repetitive and has many challenges. While work is generally a time-consuming activity. Working for mothers will have an influence on family life. Parents (fathers and mothers) who work will have less time to monitor their children, especially in carrying out daily activities so that children are lazy to do activities such as jogging, cycling, playing roller skates, with children being lazy in doing physical activities. children may be obese.

Based on Table 1 it shows that almost half of the respondents are included in the category of obesity level 2 as many as 22 respondents (44.9%). Obesity is a measure of the discrepancy between body weight and height. Because of this, a person's measurement of whether he is too fat or too thin cannot be justified individually but must first go through the body mass index (BMI) calculation process (Puspasari, 2010). Damayanti (2008) explains obesity is a condition where there is an accumulation of excess body fat so that the body weight is far above normal limits. Khomsan (2009) Obesity is a reflection of an imbalance in energy consumption and expenditure, the causes of which are exogenetic and endogenous. Exogenetic causes, for example, the tendency to overeat, especially high-calorie foods without being balanced by sufficient physical activity so that the energy surplus is stored as body fat.

Obesity in respondents occurs because of the habits or daily behavior of children which can be said to be unfavorable or unhealthy, including children who rarely do activities such as sports, children still consume fast food or fast food and parents also still pay less attention to the nutritional content of food consumed by their children and giving children gadgets or cellphones so that children do not disturb the busyness of parents. This situation is the cause of obesity which is increasing from year to year.

Based on the results of the linear regression statistical test using SPSS 26 of the factors that influence obesity, there are no factors that dominate the occurrence of obesity in school-age children. Based on the research

results, all factors have their respective influences. But nothing is the dominant factor influencing obesity in school-age children. This is because of the factors that mutually support the occurrence of obesity in school-age children. Mothers with good education and good economic conditions will be able to meet the nutritional needs of their children. Provision of nutrition that exceeds the needs of children and is supported by types of food that pay little attention to balanced nutrition, such as fast food, is a trigger for obesity in school-age children. School-age children are in a period of active movement but there are also children who prefer to be silent. Low activity, poor diet, nutritional intake without considering nutritional value are the causes of obesity in school-age children. This mutual influence between factors makes the absence of a dominant factor affecting obesity in school-age children

CONCLUSION

Factors of the child's age, mother's age, mother's education, parental income, occupation, diet and child activity influence obesity in school-age children. Of the seven factors, there is no factor that dominates obesity in school-age children.

SUGGESTIONS

Parents pay more attention to the nutrition of school-age children by considering factors that can increase the risk of obesity. Future researchers can re-examine with other facts about the dominant factors that influence obesity in school-age children.

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DECLARATION OF CONFLICTING INTEREST

There is no conflict of interest.

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AUTHOR CONTRIBUTION

Author 1:

Master of plan, collecting data

Author 2:

Arrange the content and write the article

REFERENCES

- Almatsier, dkk. 2012. *Gizi Seimbang Dalam Daur Kesehatan*. Jakarta: Gramedia Pustaka.
- Arikunto. 2014. *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: Rineka Cipta
- Damayanti, 2016. *Cara Pintar Mengatasi Kegemukan. Edisi Pertama*. Yogyakarta: Curvaksara
- Donsu, J. D. T. 2016. *Metodologi Penelitian*. Jakarta: Pusaka Baru Press
- Faridi dan Hidayati. 2016. Analisis Faktor Risiko Kejadian Obesitas Sentral Pada Ibu Rumah Tangga Di Perumahan Griya Labuan Asri Desa Sukamaju Kecamatan Labuan Kabupaten Pandeglang Banten. Prosiding Kolokium Doktor dan Seminar Hasil Penelitian Hibah Tahun 2016
- Gozali, T. O., & Saraswati, M. R. 2017. Hubungan Obesitas Pada Orangtua Dengan Terjadinya Obesitas Pada Anak Remaja SMA Di Kota Denpasar, Provinsi Bali. *Jurnal Penyakit Dalam Udayana*, 1(1)
- Hardani, Helmina Andriani, Jumari Ustiaty, Evi Fatmi Utami, R. R. I. 2020. *Buku Metode Penelitian Kualitatif dan Kuantitatif*. Pertama, Issue March). Yogyakarta: CV Pustaka Ilmu Group
- Harlan, J., & Johan, R. S. 2018. Metodologi Penelitian Kesehatan. In *Pusdik SDM Kesehatan (pertama)*. Universitas Gunadarma Press.
- Indanah, Sukesih, Fairuzzah, & Khoiriyah. (2021). Obesitas pada balita. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 12(2).

- Kantachuvessiri, a., airivichayakul, c., et al., 2015. Factor associated with obesity among workers in a metropolitan waterworks authority. *Southeast asian j trop med public health*, 36.(4).
- Kemntrian Kesehatan. RI. 2017. *Pedoman Pencegahan dan Penanggulangan Kegemukan dan Obesitas pada Anak Sekolah*. Jakarta.
- Kurdanti, W., Suryani, I., Syamsiatun, N. H., Siwi, L. P., Adityanti, M. M., Mustikaningsih, D., & Sholihah, K. I. 2015. Faktor-faktor yang mempengaruhi kejadian obesitas pada remaja. *Jurnal Gizi Klinik Indonesia*, 11(4), 179.
- Misnadiarly, 2009. *Obesitas sebagai Faktor Resiko Beberapa Penyakit*. Jakarta: Obor Populer.
- Mistry, S. and Puthussery, S. 2015. Risk factors of overweight and obesity in childhood and adolescence in South Asian countries: a systematic review of the evidence. *Public Health*, 129(3).
- Mutia J. Jumiayati dan K. Kusdanlinah. 2022. Pola Makan Dan Aktivitas Fisik Terhadap Kejadian Obesitas Remaja Pada Masa Pandemi Covid-19. *Jurnal Of Nutrition College*. VII 11 No. 1.
- Nursalam. 2020. *Metodologi Penelitian Ilmu Keperawatan Pendekatan Praktis* (Edisi 5). Salemba Medika.
- Puspasari Amaryllia. 2010. *Fat Book Rich Thin Fat Life*. Jakarta: PT Elex Media Komputindo.
- Sri Wahyuni. 2021. *Pola Makan Terhadap Kejadian Obesitas Pada Anak*. *Jurnal Asuhan Ibu dan Anak* Vol. 6 No. 2.
- Suhendro, 2016. Fast Food Sebagai Faktor Resiko Terjadinya Obesitas Pada Remaja Siswa-Siswi SMU di Kota Tangerang Propinsi Banten. *Tesis Magister Ilmu-ilmu Kesehatan Masyarakat Minat Utama Gizi dan Kesehatan, Pasca Sarjana Universitas Gadjah Mada*.
- Surahman, Mochammad Rahmat, S. Su. 2016. *Metodologi Penelitian*. badan Pengembangan Dan Pemberdayaan Sumber Daya Manusia Kesehatan Kemenkes RI.
- Suriani. 2019. Faktor-Faktor Yang Berhubungan Dengan Kegemukan Pada Balita di Kelurahan Warnasari Kecamatan Citangkil Kota Cilegon. *Faletehan Health Journal*, 6 (1) (2019) 1-10.
- WHO. (2020). *Obesity and Overweight*. WHO Fact Sheet.

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