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Establishing Healthy Eating Habits during Child Development to Reduce the Prevalence of Obesity

Nia Reviani[1,2*)], Yulina Eva Riany[3]

[1]Family Sciences Doctoral Program, Department of Family and Consumer Sciences, Faculty of Human Ecology, IPB University, Bogor, 16680, Indonesia
[2]Coordinating Ministry for Human Development and Cultural Affairs, Jakarta, 10110, Indonesia
[3]Department of Family and Consumer Sciences, Faculty of Human Ecology, IPB University, Bogor, 16680, Indonesia

*) Corresponding author: revianinia@gmail.com

Abstract

Obesity is becoming a major public health problem in the general population lately, affecting children and adults. The numbers of obesity could be diminished by performing healthy eating habits and lifestyles at a child's developmental age as they share the same risk factors and are intimately related. This paper is a literature review using various references from relevant journals to examine problems and find answers to existing problems. References were obtained through search engines, then selected based on their closeness to the topic raised in this study. Environments that have low access to healthy foods such as fresh fruit and vegetables are generally found in areas that have socioeconomic problems or in minority groups; on the contrary, areas or groups that have good access to fast food vendors are usually offering foods that contain high sugar and fat. Healthy eating habits can be formed by providing examples of healthy habits in children and increasing parents' attention to their eating patterns.

Keywords: children, eating habits, lifestyle, obesity, prevention

Abstrak

Obesitas menjadi masalah kesehatan utama dalam populasi saat ini, yang terjadi pada semua kalangan, baik anak-anak maupun dewasa. Angka obesitas dapat diturunkan dengan menerapkan kebiasaan makan dan gaya hidup yang baik sejak masa anak-anak, karena kebiasaan makan dan gaya hidup terkait erat dengan obesitas. Tulisan ini merupakan tinjauan sistematis yang menggunakan berbagai referensi dari berbagai jurnal relevan untuk mengkaji masalah dan mencari jawaban dari permasalahan yang ada. Referensi diperoleh melalui pencarian melalui mesin pencari, kemudian diseleksi berdasarkan keeratan dengan topik yang diangkat pada penelitian ini. Lingkungan yang memiliki akses rendah terhadap makanan sehat seperti buah dan sayur segar umumnya terdapat di wilayah yang memiliki masalah sosial ekonomi atau pada kelompok minoritas, sebaliknya wilayah atau kelompok yang memiliki akses baik ke penjual makanan cepat saji, biasanya merupakan makanan olahan yang memiliki kandungan gula dan lemak tinggi. Kebiasaan makan yang sehat pada anak-anak dapat dibentuk dengan memberikan contoh kebiasaan makan yang sehat pada anak-anak dan juga meningkatkan perhatian orang tua terhadap pola makan mereka.

Kata kunci: anak-anak, gaya hidup, obesitas, pola makan, prevalensi

Introduction

Obesity is a major risk factor for various degenerative diseases, such as cardiovascular disease and diabetes mellitus, which are important causes of death worldwide. Unfortunately, the prevalence of obesity continues to increase in various parts of the world, including Indonesia. The Basic Health Research (2018) data shows that compared to 2007, the prevalence of obesity in Indonesia in 2018 has increased by more than 50%, from 10.5% to 21.8% (Ministry of Health, 2019). Further data shows that obesity is a major risk factor that causes the majority of deaths and disabilities in Indonesia (Institute for Health Metrics and Evaluation, 2022); therefore, reducing the prevalence of obesity is an important activity that urgently needs to be done.

Through the theoretical approach of H.L. Blum, it can be concluded that various factors include environmental factors, health services, genetics, and behavior (Saraswati, et al., 2021). The researcher also emphasizes that family inheritance in the form of eating habits and lifestyle is an important factor in obesity. This conclusion is interesting evidence that obesity can occur due to the influence of unhealthy family diets and lifestyles, which are characterized by high consumption of foods with a high glycemic index (Ishaque, Ahmad, Zehra, & Amin, 2013), low consumption of fruits and vegetables and a sedentary lifestyle who are lazy (Ishaque et al., 2013; Bekhwani & Khan, 2022). In previous studies, a systematic review showed that unhealthy eating habits and lifestyles that develop in childhood are not only a cause of obesity in childhood but can also be a risk factor for obesity in adulthood (Ambrosini, 2013). Because adults' eating habits and lifestyles can be influenced by eating habits and lifestyles in childhood, it is suspected that the prevalence of obesity in adults can be reduced by developing healthy eating habits and lifestyles at a child's developmental age.

Eating habits or patterns include the type of food eaten, the amount of food, the schedule for eating, and the processing of food ingredients. Consumption of a balanced diet is a technique of regulating the amount and type of food in the form of a daily food arrangement that contains balanced nutrition as a building and regulating substance in the body (Ministry of Health RI, 2018). It is said to be an unhealthy diet if the food is low in fiber and high in fat, and it can lead to an increase in body weight. Based on research from Riskesdas in 2013, 93.5% of the Indonesian population aged more than ten years consumed less fiber in the form of vegetables and fruit. Meanwhile, 47.4% of the population still consumes fatty foods 1 - 6 times a week (Siregar, 2019).

The closest environment for children is their family and playmates, influenced by the surrounding community, the media, and the food available. What supports the emergence of behavior, especially in consuming fast food or fast food, is the busyness of parents, especially in this case, mothers who do not have time to prepare food at home. Hence, they prefer to buy food outside, the social environment, and economic conditions that support the amount of pocket money and the level of activity outside and inside the home. The presentation of fast food or fast food that is fast and practical does not require a long time to serve, and the taste that various groups favor is a condition that supports adults and children to consume it frequently. The variety and complexity of children's environments continue to increase throughout their lives (Cuellar, Jones, & Sterrett, 2015). Parents, as the closest person in the family, prepare and introduce food to their children, so they become role models who influence their children's eating habits, lifestyles, and eating behaviors (Brown & Ogden, 2004).

Eating habits are formed during childhood and maintained into old age (Montano et al., 2015). Although children's eating habits and weight are difficult to change directly, parental feeding has the potential to be a target intervention to prevent unhealthy eating patterns and overweight in children (Finnane, Jansen, Mallan, & Daniels, 2017). This paper aims to prevent obesity in adults by establishing healthy eating habits during the child's developmental period to reduce the prevalence of degenerative diseases in later life due to excess weight.

Methods

This research is a review of correlational literature studies to determine the correlation of two variables by utilizing the results of previous correlation studies so that it is possible for researchers to draw conclusions from these studies. The variables in this study were eating habits as the dependent variable and obesity (overweight) as the independent variable. Eating habits are human behavior towards a food such as attitudes, beliefs, choices in consuming food that are obtained repeatedly (Khumaidi, 1989). Obesity is a condition of being overweight due to accumulation of fat.

The research design for literature studies is to collect a number of articles, books, or journals that are on search engines on the basis of an outline topic and are selected based on the theory relevant to the problem being researched as reference material in discussing research results. The method used is critical appraisal which is the basis of the theory regarding the differences, similarities, and shortcomings of the literature used. This literature review uses various references published in various relevant journals to examine problems and at the same time seek answers to existing problems. In this article, we analyze eating habits and lifestyle which are the main risk factors for obesity. Table 1 shows the previous studies used in this research.

Table 1. The studies used in the literature review research

No	Study (article)	Article title	Results
1	Sallis, Prochaskan, & Taylor (2000)	A review of correlates of physical activity of children and adolescents	Physical activity variables relate to the sex of the child, parents' weight status, physical activity preferences, healthy diet and others. The variables of physical activity in adolescents are related to gender, ethnicity, age, support from parents and other people, and sports opportunities.
2	Popkin (2005)	Using research on the obesity pandemic as a guide to a unified vision of nutrition	The results showed that many factors can affect activity including obesity at every level (individual, family, clinical, community, and macro).
3	Brownson et al. (2005)	Declining rates of physical activity in the United States: what are contributors?	The review results show important patterns and lasting trends of changes in physical activity levels. Economic and technological factors can affect a person's physical activity. Physical activity behavior is also influenced by gender, race, or socioeconomic status.

Table 1. The studies used in the literature review research (*continue*)

No	Study (article)	Article title	Results
4	Dunton et al. (2009)	Physical environmental correlates of childhood obesity: a systematic reviewer	The results of the literature review show that the socioeconomic status of the family influences obesity. This is related to population density and a person's BMI.
5	Ng, & Popkin (2012)	Time use and physical activity: a shift away from movement across the globe	The results of a literature review show that the trend of decreasing physical activity is largely driven by reduced movement at work, at home, and when traveling. Lifestyle is closely related to physical activity. This could be related to weight gain and risks to cardiometabolic health.
6	Maitland et al. (2013)	A place for play? The influence of the home physical environment on children's physical activity and sedentary behavior	The results of the literature review show that the home environment is an important influence on sedentary behavior and children's physical activity. In addition, controlling the home environment is able to control children's behavior.
7	Kaushal, & Rhodes (2014)	The home physical environment and its relationship with physical activity and sedentary behavior: a systematic review	The results of a literature review show that the physical environment at home by limiting television viewing has proven effective for children. In addition, restrictions on television use are also associated with sedentary behavior, especially in girls. Limiting television use is done to control children's behavior.
8	Hanani, Badrah, & Noviasty (2021)	Diet, physical activity, and genetics influence the incidence of obesity in adolescents	The results showed that diet and genetics can influence the incidence of obesity in adolescents. This is because the current lifestyle tends to cause nutritional status above normal, so that adolescents become fat or obese.

Findings

The Relationship between Physical Activity and Eating Habit

Based on the literature studies that have been reviewed, it was found that the increase in the prevalence of obesity occurs due to a decrease in physical activity and unhealthy eating habits. A decrease in physical activity and an increase in a lazy lifestyle do not only occur in developed countries but also in countries that have not or are still developing (Popkin, 2005; Brownson et al., 2005; Ng et al., 2012). In addition, there are two influencing factors, namely environmental factors and proximal factors. Environmental factors have an important effect on decreasing levels of physical activity and eating habits, the effects of which depend on socioeconomic level, ethnicity and geographic location (Dunton et al., 2009; Hill et al., 2014). Proximal factors have more influence on the sedentary lifestyle in childhood and activity levels throughout life (Sallis et al., 2000; Maitland et al., 2013; Kaausal and Rhodes, 2014).

The Relationship between Eating Habit, Physical Activity, Genetic and Obesity

Based on the literature studies that have been reviewed, it was found that adolescents and adults are prone to obesity, a significant relationship between dietary patterns and the incidence of obesity in adolescents where the diet in this study was obtained from the intake of macronutrients consisting of energy intake, carbohydrates, protein, and fat (Chandra 2016; Mokolensang, et al., 2016; Restuastuti, et al., 2016). Intake of macronutrients, fast food with excessive frequency of needs and habits of teenagers not having breakfast by switching to eating large portions during the day will have an impact on obesity in adolescents (Wulandari, 2016). This shows that if food intake is consumed more than the specified amount per day, it will affect fat deposits in the body. In Table 2, the results of the research by Hanani, Badrah, and Noviasty (2021) show that out of a total of 55 respondents who were obese, there were 9 people (8.2%) who had a risky eating pattern with a rare frequency, while of the 55 respondents who were not obese, there were 32 people (29.1%) who had risky eating patterns with rare frequency.

In addition, there were 55 respondents who were obese consisting of 42 people (38.2%) who had light physical activity, while of the 55 respondents who were not obese there were 12 people (10.9%) who had moderate activity. Meanwhile, physical activity is a risk factor for obesity. There were 55 respondents who were obese consisting of 26 people (23.6%) who had a genetic risk, while of the 55 respondents who were not obese there were 50 people (45.5%) who did not have a genetic risk.

Table 2. The relationship between eating habit, physical activity, genetic and obesity

Variable	Incidence of obesity				P value	OR (CI: 95%) Bottom-up
	Obesity		Not obese			
	n	%	n	%		
Eating habits						
Often	9	8.2	23	20.9	0.003	0.272
Rarely	46	41.8	32	29.1		0.111 – 0.665
Amount	55	50	55	50		
Physical activity						
Simply	13	11.0	12	10.9	0.820	1.1009
light	42	38.2	43	39.1		(0.424 – 2.707)
Amount	55	50	55	50		
Genetic						
Yes	26	23.6	5	4.5	0.000	0.112
No	29	26.4	50	45.5		(0.039 – 0.322)
Amount	55	50	55	50		

Source: (Hanani, Badrah, & Noviasty, 2021)

The Relationship between Eating Habit, Energy Intake, Physical Activity, Sleep Duration, and Obesity

Based on previous studies in Table 3, it shows that there is a relationship between diet and the incidence of obesity. Respondents whose eating habits were frequent were more obese (42.9%) than those who were not obese, namely with a percentage of 19.6%, while those with infrequent eating patterns, more were not obese, with a percentage

(80.4%) compared to those who are obese (57.15%). Even though the diet was not frequent, there were still 16 respondents who were obese. This is because the incidence of obesity is not only related to eating patterns, but there are other factors that are high and insufficient sleep duration.

Other results show that respondents who have more energy intake are obese, while respondents who have sufficient energy intake do not experience more, namely 56 respondents, compared to those who are obese, namely 27 respondents. In respondents who have sufficient energy intake there are 27 respondents who are obese, this is caused by other factors. In addition, unbalanced physical activity will cause the body to become overweight because the condition of obesity is related to diet, energy intake that enters the body (Simatupang, 2008; Widiantini, 2014).

Table 3. The relationship between eating habit, energy intake, physical activity, sleep duration, and obesity

Variable	Incidence of obesity				P value	OR CI: 95%
	Obesity		Not obese			
	n	%	n	%		
Eating habits						
Often	12	42.9	11	19.6	0.047	3.068
Not often	16	57.1	45	80.4		(1.132 – 8.319)
Energy intake						
More	1	3.6	0	0	0.333	
Simply	27	96.4	56	100		
Physical activity						
Medium	26	92.9	17	30.4	0.0001	29.8224
High	2	7.1	39	69.6		(6.350 – 140.080)
Sleep duration						
Less	17	60.7	16	30.4	0.009	3.864
Simply	11	39.3	40	69.6		(1.487 – 10.037)
Total	28	100	56	100		

Source: (Kurniawati, Fakhriadi, & Yulidasari, 2016)

Other results show that respondents who have more energy intake are obese, while respondents who have sufficient energy intake do not experience more, namely 56 respondents, compared to those who are obese, namely 27 respondents. In respondents who have sufficient energy intake there are 27 respondents who are obese, this is caused by other factors. In addition, unbalanced physical activity will cause the body to become overweight because the condition of obesity is related to eating habits, energy intake that enters the body (Simatupang, 2008; Widiantini, 2014).

In physical activity with the incidence of obesity, it was found that respondents who had moderate physical activity were more dominantly obese, namely 26 respondents compared to those who were not obese, namely 17 respondents. Meanwhile, respondents who had high physical activity were not obese, namely 39 respondents, compared to those who were obese, namely 2 respondents. In respondents who have high physical activity, there are 2 respondents who are obese.

The Relationship of Eating Habit with Obesity Incidence

Based on the literature that has been reviewed, in Table 3 shows that out of 31 respondents it is known that 77.4% have a high eating pattern and the rest of the respondents have a low eating pattern (22.6%). This also proves that the older the respondent's age, the higher the respondent's interest in consuming food, especially fast food which has high calories, causing obesity in the respondent.

Table 3. Student eating habit and obesity in students at Trubhuwana Tunggadewi University Malang

Eating habit	f	(%)	Obesity	f	(%)
Low	7	22.6	Obesity I	29	93.5
Normal	0	0	Obesity II	2	6.5
High	24	77.4			
Total	31	100	Total	31	100

Source: (Evan, Wiyono, & Candrawati, 2017)

Discussion

Obesity is a condition characterized by the accumulation of fat in the body. The cause of obesity is multifactorial, which means a variety of factors cause it. Genetics, diet, lifestyle, lack of activity, and lack of awareness in adolescents, if not improved, will affect the quality of society in the future. Factors such as environment, genetics, psychology, health, and medication. Although genetic factors influence obesity (Maes et al., 1997), they are not commonly considered the main cause of the current high prevalence of obesity. The incidence of obesity is closely related to diet (Istiqomah & Herdiani, 2020). Instead, changes in physical activity and eating habits are more likely to explain the phenomenon of high rates of increase in obesity prevalence (Popkin, 2005). Decreased physical activity and increased sedentary lifestyles occur in developed countries and less developed or developing countries (Brownson et al., 2005; Ng et al., 2012). Similarly, dietary changes, such as increased consumption of fast and energy-dense foods, have significantly impacted the prevalence of obesity (Kearney, 2010; Rosenheck, 2008).

Environmental factors affect reducing physical activity levels and dietary habits (Dunton et al., 2009), which depend on socioeconomic level, ethnicity, and geographic location (Hill et al., 2014). Environmental influences in relation to physical activity can be divided into proximal (home) and distal (neighbors) environments and social factors. Proximal factors influence lazy lifestyles in childhood and activity levels throughout life (Sallis et al., 2000; Maitland et al., 2013; Kaushal & Rhodes, 2014). Some important distal environmental factors include city layout, access to healthy food, access to exercise, and the social environment of neighbors.

Urban layout influences physical activity, especially with regard to walking facilities and walking activity levels. Neighborhoods are considered to have good walking facilities if there are walking or cycling routes to work or other important facilities such

as shopping centers, parks, schools, and entertainment centers. Creatore et al. (2016) found that areas with good walking facilities did not experience an increase in obesity prevalence over some time, and an increase in prevalence was found in areas with poor walking facilities.

Environmental influences on diet are mainly related to local food availability and access to healthy foods. For example, neighborhoods with low access to healthy foods such as fresh fruits and vegetables are generally found in areas with socioeconomic problems or in minority groups (Hendrickson, Smith, C., & Eikenberry, 2006; Walker, Keane, & Burke 2010; Jiao et al., 2012). Conversely, these areas or groups have good access to fast food vendors that offer a variety of processed foods that are high in sugar and fat.

School access to healthy food also influences the prevalence of obesity in children and adolescents. A study in the Netherlands showed that unhealthy food choices (such as fried foods, and sugary drinks) are more often located closer to schools than healthy foods (Timmermans et al., 2018). From the research conducted by Chandra (2016), it was found that 98% of adolescents were obese due to diet. Therefore, diet is the most important risk factor for obesity. In the study, it is said that the diet of the adolescent population has a habit of consuming foods high in carbohydrates, fats, and sugar and a habit of consuming fast food. Nutritional or dietary problems that often occur in adults are imbalances between nutrient consumption and the recommended nutritional adequacy. Adolescents in Bitung City often consume foods high in carbohydrates, such as rice and tubers, and fats derived from fried foods, which are the favorite foods of most teenagers and adults. Consumption of fast food also affects the accumulation of body fat because the number of calories served in these foods each time they are consumed exceeds the daily calorie adequacy rate.

The results of the data analysis show no significant influence between physical activity and the incidence of obesity (Hanani, Badrah, & Noviasty, 2021). This is in line with research conducted by Abraham, who also stated that there was no significant relationship between physical activity and the incidence of obesity (Abraham, 2017). Therefore, lack of physical activity is indeed one of the factors causing obesity or obesity. However, other factors can also affect such as unbalanced energy levels and fat consumption. This is supported by research conducted by Pertiwi, which states that there are children who have high physical activity but are obese, and vice versa with children who have low physical activity but tend to have normal body weight. This is because several other factors influence the occurrence of obesity, such as gender, parents who have a history of obesity, father's education and mother's education, parents' income, meal frequency, snacks, and consuming fast food and soft drinks.

This study contradicts Widiantini and Tafal (2014), which states that there is a relationship between physical activity and the risk of obesity, namely, the heavier the physical activity, the lower the risk of obesity. This is supported by research conducted by Candra, Wahyuni, and Sutriningsih, namely physical activity, which causes the process of burning energy, so that the more physical activity, the more energy is used.

Physical activity can burn fat and calories according to the physical activity performed. If a person does a physical activity with inactive calories, the fat and calorie ratio in the body will accumulate without the process of catabolism or burning. Conversely, obesity can also affect physical activity. High body mass will make a person lazy to do activities and prefer to sleep, sit, rest, and eat (Candra, Wahyuni, & Sutriningsih, 2016).

Child development is a fundamental part of human development mainly because the brain architecture is formed in the first year due to genetic interactions and the influence of the environment in which the child lives (Mustard, 2009; Shonkoff et al., 2012). The promote child wellness, and it is important to understand children's idiosyncrasies and a comfortable environment for their growth. Caregivers' understanding of children's characteristics and needs as a result of their developmental process will promote more holistic development as daily care is the main space for promoting child development (Mello et al., 2014).

The age from birth to 5 years old is a sensitive period for development (Knudsen, 2004). Neuropsychological research shows that children's rapid brain growth during this period makes them susceptible to environmental factors, whether positive or negative (Minh et al., 2017). Social and environmental experiences in early life are believed to cause psychological changes that have a protective or disruptive influence on children's learning, behavior, health, and well-being. Poverty in the first three years of life is closely related to brain growth, and children's brain volume varies depending on their socioeconomic status (Hanson et al., 2013). Individuals who experience poverty in childhood also have a greater risk of obesity than those who have never experienced poverty (Lai et al., 2019).

Childhood maltreatment is associated with various substance use problems. Individuals who experience childhood maltreatment are at risk of early exposure to alcohol and are more likely to become heavy drinkers as adults (Dube et al., 2006; Shin et al., 2013). Girls with a history of sexual abuse are five times more likely to become substance abusers than girls who have not experienced social abuse (Shin et al., 2010). Alcohol consumption is known to be associated with an increased risk of obesity.

Lack of knowledge can lead to unhealthy habits, and campaigns on healthy eating have not successfully overcome these habits (Gatherer, Parfit, Porter, & Vessey, 1979). Changing eating habits in children can be done by presenting a group of examples (peer modeling) who are expected to provide examples of good eating habits. Birch (1980) has used this method to change children's preferences for vegetables. In his study, gave lunch for four consecutive days to children who liked peas along with children who liked carrots. At the end of the study, there was a shift in the children's preference for the type of vegetable preferred, and this change was observed until several weeks after the study. Birch's (1980) results show that children's eating habits can be changed by showing examples of how others eat. This change can also be achieved by modeling how others eat through videos (Lowe et al., 1998).

Parents play an important role in the formation of children's eating habits. Children whom their parents supervise will choose a wider variety of foods than those who are

unsupervised (Klesges et al., 1991). Rewarding children from parents for their choice of healthy foods can also influence children's eating habits (Birch et al., 1980). However, this pattern can reduce a child's liking for certain foods if the child is promised something if they eat the food. For example, children are promised that they can play in an interesting place if they drink juice. This method can encourage children to consume juice but their level of liking for juice decreases (Lepper et al., 1982). Decreased liking may cause children to be reluctant to choose the food if they do not get a reward.

Strict parental control over children's eating habits does not always positively impact their eating habits. For example, restricting children from eating certain foods may make restricted or prohibited foods more attractive to children. As a result, in the absence of parents, children will prefer restricted or prohibited foods (Fisher & Birch, 1999).

The habit of eating dinner with the family has an impact on children's good eating habits, such as regularly eating, having breakfast, and showing good behavioral attitudes when eating and having a diet that tends to be balanced (Lee et al., 2014). The research group also found that the frequency of eating a variety of foods such as whole grains, protein foods, fruits, vegetables, and dairy products was higher in children who frequently had family dinners compared to those who rarely had them. Based on this, Lee et al. (2014) suggested education to promote family dinners by emphasizing the benefits and importance of family dinners.

Modern lifestyles in the current era tend to affect nutritional status above normal because foods that are currently popular are foods lacking fiber, such as fast food, junk food (hamburgers, french fries, pizza, instant noodles, processed starch found in many instant drinks), and little consumption of fiber such as vegetables so that from the age of children can already be said to be overweight or obese. In addition, a sedentary lifestyle or lifestyle or less movement or more sitting in front of the television or computer, and consuming snacks and sweet foods (Pertiwi, 2009). This is because many children consume food but lack physical activity so the energy that enters the body is much more hoarded than used by the body to further be used as energy for activity and growth. Furthermore, excess energy from foods high in carbohydrates, sugar, and fat will be stored in adipose tissue, also known as fat.

Fast food is also very influential in the form of consuming fast food because many from various circles think that eating fast food can raise their social status, increase their prestige, and certainly not be left behind with the flow of globality among their peers and with the promotion of fast food, affecting the habit of consuming fast food.

Conclusion and Recommendation

Conclusion

Being overweight is a major risk factor for various degenerative diseases whose prevalence continues to increase in various parts of the world, including Indonesia. Eating habits are an important risk factor for adult obesity that is established during childhood. Therefore, it is suspected that the prevalence of obesity in adults can be reduced by

developing healthy eating habits at the age of child development. Lack of knowledge and poor parenting can adversely affect children's eating habits. Healthy eating habits in children can be formed by modeling healthy eating habits in children and also increasing parental attention to their diet. Parents reward children for healthy food choices, but an increase can also decrease the level of liking. Eating dinner together can shape healthy eating habits in children, such as consuming various foods, fruits and vegetables, and high protein.

The analysis results in this study indicate a significant influence between diet and the incidence of obesity in the Segiri Health Center work area. This follows the theory of Thasim, Syam, and Najamuddin, which states that an excessive diet can contribute to obesity. Obesity occurs if a person consumes calories in excess of the number of calories burned. In essence, the body needs calorie intake for survival and physical activity, but to maintain body weight, there needs to be a balance between energy in and energy out. Therefore, an imbalance between energy in and energy out will lead to overweight and obesity.

Recommendation

Based on the research findings, future research recommendations include how to approach parents' good eating habits in children and good lifestyle patterns. Recommendations for policymakers in the food sector, of course, are to research the level of use of preservatives such as sodium benzoate in various kinds of fast food that are currently popular among children, such as nuggets, sausages, instant noodles, and so on, because one of the risks of obesity is closely related to sodium consumption per day.

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