
**Factors Associated With The Incidence Of Toddler Obesity In The Outpatient
Department Of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi
Arabia**

Muslikhah¹⁾, Muhammad Jauhar²⁾, Umi Farida³⁾

^{1,2,3)} Undergraduate Nursing Study Program, Faculty of Health Sciences, Muhammadiyah University of Kudus

*Corresponding Author

E-mail: 152023030316@std.umku.ac.id

Abstract

Childhood obesity is a global health issue affecting individuals and communities, with serious disease risks such as diabetes and heart disease. This phenomenon is related to genetic, behavioral, environmental, and socioeconomic factors. In Saudi Arabia, the prevalence of childhood obesity reaches 82.49%, and in Riyadh, 32.5% of children under 12 years old are obese. Several contributing factors to childhood obesity include maternal knowledge about nutrition, paternal nutritional status, history of exclusive breastfeeding, and parenting styles. This study aims to identify factors associated with obesity in toddlers at the Outpatient Department of Pediatric Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh. This research is quantitative with an analytical survey design using a cross-sectional approach. The population studied consists of mothers with toddlers under 5 years old at the Outpatient Department of Pediatric Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, in January 2024, with an average of 50 toddlers per month. Samples were taken using total sampling, resulting in a total sample of 50 toddlers. This research was conducted in May 2024 using a questionnaire. Data analysis was performed univariately and bivariately using the chi-square test. The results show that the age group of 24-36 months is the largest, with 20 children (40%) of the total respondents. A total of 62% of toddlers are obese. There is a significant relationship between maternal knowledge ($p=0.003$), parental nutritional status ($p=0.008$), exclusive breastfeeding ($p=0.020$), and parenting style ($p=0.007$) with the incidence of obesity in toddlers. It is recommended that mothers and families improve their knowledge of nutrition and child health through appropriate education and outreach.

Keywords: Exclusive Breastfeeding, Toddlers, Obesity, Maternal Knowledge, Parenting Style

INTRODUCTION

Childhood obesity is a global phenomenon that is increasingly becoming a serious public health concern. This phenomenon not only poses a threat to individual health but also has broad impacts on all levels of society, families, and even at the national level. The high prevalence of childhood obesity indicates a complex and multifactorial health problem, involving genetic, behavioral, environmental, and socioeconomic factors. Childhood obesity is not only a physical health issue related to conditions such as diabetes, heart disease, and orthopedic problems, but also affects psychological aspects, including self-esteem and mental health. Children with obesity often face stigmatization and discrimination, which can impact their emotional well-being and social development. From a family perspective, childhood obesity can be an emotional and financial burden. Families may face challenges in providing healthy food and ensuring children engage in physical activity, especially in environments that do not support a healthy lifestyle. At the societal and national levels, childhood obesity increases the economic burden due to higher healthcare costs and lost future productivity.(Aljassim & Jradi, 2021).

Nutritional status is the condition of the body resulting from food consumption and nutrient utilization. The under-five age group (toddlerhood) is a crucial period in human growth and development due to its rapid rate. Growth and development in toddlerhood can be easily observed. In children under five, each child's growth and development follows a similar pattern, but at different rates.(Adriani & Wirjatmadi, 2016).

Obesity is an abnormal accumulation of fat that can be detrimental to health. If obesity occurs during infancy, it is likely to persist into adulthood. Some people still believe that obesity in toddlers is a sign of health and not a problem that requires treatment.(Supariasa, 2014).

In the world, more than 1.9 billion adults (39%) are overweight, and more than 650 million people (13%) are obese (10.8% of men and 14.9% of women) in 2022. The World Health Organization (WHO) reports that the prevalence of overweight and obesity in Saudi Arabia is 68.2% (women 69.2% and men 67.5%) and 33.7% (women 39.5% and men 29.5%), respectively.(Alsulami et al., 2023).

A recent large survey collected data from all regions of Saudi Arabia and revealed an obesity prevalence of 24.7%.(Alsulami et al., 2023)The incidence of obesity in children in Saudi Arabia is quite high. A study showed that the prevalence of overweight and obesity among Saudi children reached 82.49%, with overweight being more common in mothers (85.77%) than fathers (82.26%).(Aljassim & Jradi, 2021).

In Riyadh, Saudi Arabia, obesity rates are increasing annually. In 2021, the city's population was 7,388,000, and 9.8% were obese. This number continues to rise annually, with 10.2% of Riyadh's population being obese in 2022, and 32.5% of those were children under 12.(Aljassim & Jradi, 2021).

Childhood obesity is a complex health problem influenced by various factors. According to existing sources, several key factors associated with childhood obesity include maternal knowledge, paternal nutritional status, history of exclusive breastfeeding, and parenting styles. Mothers with good knowledge of nutrition and health tend to provide healthier foods for their children and limit the consumption of high-calorie, low-nutrient foods. A mother's knowledge of the importance of physical activity also influences her child's habits and activity levels. Mothers who understand the importance of physical activity tend to encourage their children to exercise and reduce the amount of time they spend sitting or playing with gadgets.(Narendra, 2020).

Several factors contribute to childhood obesity. These factors include heredity/genetics; food intake; physical activity; dietary history, such as breastfeeding, birth weight, and parental obesity.(Ginting & Besral, 2020). Risk factors that can be identified for overweight and obesity in children include socioeconomic and demographic factors (education, occupation and income of parents, gender and family size), eating patterns and habits (consumption of fast food, frequent snacking, consumption of sweetened foods and drinks, breakfast habits, and eating out habits), physical activity and lifestyle (use of various means of transportation, and sedentary behavior such as watching TV, screen time and playing games on the computer), parenting patterns, and other factors (parental obesity, birth weight, duration of breastfeeding, sleep duration and child knowledge).

A father's nutritional status often reflects the diet and lifestyle adopted within the family. Fathers with poor nutritional status may have unhealthy eating habits, which their children may imitate. Obese fathers may also exhibit a genetic predisposition to obesity, which may be passed on to their children.(Alsulami et al., 2023)Risk factors associated with childhood obesity include having an unemployed father, an overweight/obese father, parental misperception of the child's weight status, birth by cesarean section, less than 30 minutes of active play time per day, frequent snacking, and screen use (television, computer, tablet, and mobile phone) for more than 2 hours per day outside of school.(Aljassim & Jradi, 2021).

Exclusive breastfeeding is associated with a lower risk of childhood obesity. Breast milk contains balanced nutrition and can help regulate a baby's appetite and metabolism. Exclusive breastfeeding also helps establish healthy eating patterns from an early age. (Triana et al., 2020).

Overly permissive parenting or insufficient nutritional supervision can lead children to frequently consume unhealthy foods such as fast food, sugary drinks, and high-calorie snacks. A lack of parental boundaries or control over children's eating habits, as well as a lack of encouragement for physical activity, can contribute to obesity.(Adriani & Wirjatmadi, 2016).

A mother's knowledge of health and nutrition is a factor that greatly influences a toddler's eating patterns. Research by(Nasution & Pebrianthy, 2019)revealed that the causal factors in preventing obesity in toddlers are influenced by education, sources of information and knowledge which together are the most dominant variables related to preventing obesity, OR value = 2.52.

Research result(Indanah et al., 2021)shows that there is a relationship between children's eating patterns, history of breastfeeding, obesity in fathers and children's stress levels with the incidence of obesity in children (p value < 0.05).

Obesity impacts children's growth and development, particularly their psychosocial development. Obese children are at risk of developing various diseases that can lead to death, including cardiovascular disease, diabetes mellitus, and others. Childhood obesity also has short-term and long-term psychosocial consequences, such as decreased self-confidence, eating disorders, and poorer health and quality of life. Obesity in early childhood can persist into adulthood, increasing the risk of degenerative diseases. The causes of obesity include diet, nutritional intake, physical activity, and socioeconomic conditions. Some studies have even linked insomnia or lack of sleep as a risk factor for obesity.(Narendra, 2020).

The impacts that occur if toddlers are obese include a tendency to develop type II diabetes mellitus, increased cholesterol levels resulting in increased blood pressure and can cause heart disease, sleep apnea, orthopedic disorders, asthma and liver disease. Children with obesity tend to experience increased blood pressure which affects the heart rate, and around 20-30% of obese children suffer from hypertension.(Triana et al., 2020).

Based on preliminary survey data at the Outpatient Department of Pediatrics at Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, Saudi Arabia, it was found that in December 2023, the number of toddlers who received treatment was 94 children. Among the 94 children, 27 were obese. The results of interviews with 10 mothers who have toddlers at the Outpatient Department of Pediatrics at Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, Saudi Arabia, showed that 7 mothers stated that they did not understand about foods that contain many nutrients needed by children. Mothers did not understand the appropriate amount, portion, type, frequency, and form of food to provide to their children. The mothers' knowledge regarding the nutritional status of their children was also still lacking, where mothers said that food was equated with adult food intake. 7 mothers also revealed that their fathers also had an obese nutritional status. In addition, 6 out of 10 mothers admitted that their children were not exclusively breastfed.

The novelty of this study lies in its geographic and cultural context. It was conducted in Riyadh, Saudi Arabia, providing a specific geographic and cultural context. This is important because cultural and environmental factors influence diet, physical activity, and health behaviors. Many studies focus on obesity in school-aged children or adolescents, while this study specifically targets the toddler age group, which is a critical phase in the formation of diet and physical activity patterns. This study integrates unique factors related to obesity in Saudi Arabia.

The implications of the research results for the development of nursing science and profession are that the research results can provide insight into specific obesity risk factors for toddlers in Saudi Arabia, which is useful for developing more effective prevention and intervention strategies.

Based on the existing problems, the researcher is interested in conducting research with the title "Factors Related to the Incidence of Obesity in Toddlers in the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia".

RESEARCH METHODS

This study was quantitative with an analytical survey design using a cross-sectional approach. The population studied were mothers with toddlers under 5 years old at the Outpatient Department of Pediatrics Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, in January 2024, with an average of 50 toddlers per month. The sample was taken by total sampling, resulting in a total sample of 50 toddlers. This study was conducted in May 2024 using a questionnaire. Data analysis was performed univariately and bivariately using the chi-square test.

RESULTS AND DISCUSSION

Univariate Analysis

Table 1. Respondent Characteristics Based on Age and Gender of Toddlers

No	Variables	f	%
1	Age		
	24-36 months	20	40
	37-48 months	17	34
	49-60 months	13	26
2	Toddler's gender		
	Man	25	50
	Woman	25	50
	Total	50	100

Table 1 presents the characteristics of toddler respondents by age and gender who visited the Outpatient Department of Pediatrics at Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia. The table shows that the 24-36 month age group was the largest, with 20 children, or 40% of the total respondents. Furthermore, the gender distribution of toddlers was balanced, with 25 boys (50%) and 25 girls (50%).

Table 2. Respondent Characteristics

No	Variables	f	%
1	Mother's knowledge		
	Not enough	28	56
	Good	22	44
2	Nutritional status of parents		
	Both are obese	10	20
	Obese father	4	8
	Obese mother	19	38
	No one is obese	17	34
3	History of exclusive breastfeeding		
	Not exclusive breastfeeding	25	50
	Exclusive Breastfeeding	25	50
4	Parenting		
	Permissive	15	30
	Neglect	9	18
	Authoritarian	15	30
	Democratic	11	22
5	Obesity in toddlers		
	Obesity	31	62
	Not obese	19	38
	Total	50	100

Table 2 shows the characteristics of toddler respondents at the Outpatient Department of Pediatrics at Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, Saudi Arabia, based on several variables. A total of 28 mothers (56%) had insufficient knowledge regarding nutrition and child health. In terms of parental nutritional status, 17 pairs (34%) were not obese. A history of exclusive breastfeeding showed that 25 toddlers (50%) did not receive exclusive breastfeeding. Regarding parental parenting styles, 15 toddlers (30%) received permissive and authoritarian parenting styles. The incidence of obesity in toddlers showed that 31 toddlers (62%) were obese.

Table 3. Relationship between maternal knowledge and the incidence of obesity in toddlers in the outpatient department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

Mother's knowledge	Obesity in Toddlers						P value
	Obesity		Not obese		Total		
	n	%	n	%	n	%	
Not enough	23	82.1	5	17.9	28	100	0.003
Good	8	36.4	14	63.6	22	100	
Total	31	62	19	38	50	100	

Table 3 presents the relationship between maternal knowledge and the incidence of obesity in toddlers at the Outpatient Department of Pediatrics Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, Saudi Arabia. The data shows that of the 28 mothers with poor knowledge, 23 toddlers (82.1%) were obese, while only 5 toddlers (17.9%) were not obese. On the other hand, of the 22 mothers with good knowledge, only 8 toddlers (36.4%) were obese, while 14 toddlers (63.6%) were not obese. The analysis results showed a p-value of 0.003, indicating a significant relationship between maternal knowledge and the incidence of obesity in toddlers.

Table 4. Relationship between Parental Nutritional Status and the Incidence of Obesity in Toddlers at the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

Mother's knowledge	Obesity in Toddlers						P value
	Obesity		Not obese		Total		
	n	%	n	%	n	%	
Both are obese	10	100	0	0	10	100	0.008
Obese father	1	25	3	75	4	100	
Obese mother	13	68.4	6	31.6	19	100	
No one is obese	7	41.2	10	58.8	17	100	
Total	31	62	19	38	50	100	

Table 4 presents the relationship between parental nutritional status and the incidence of obesity in toddlers at the Outpatient Department of Pediatrics at Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia. The data show that of the 10 pairs of parents where both parents were obese, all toddlers (100%) were also obese. In the group where only the father was obese, there was 1 toddler (25%) who was obese and 3 toddlers (75%) who were not obese. In the group where only the mother was obese, 13 toddlers (68.4%) were obese, while 6 toddlers (31.6%) were not obese. Among the pairs of parents where neither parent was obese, 7 toddlers (41.2%) were obese and 10 toddlers (58.8%) were not obese. Overall, there were 31 toddlers (62%) who were obese and 19 toddlers (38%) who were not obese. The p-value obtained was 0.008, indicating a significant relationship between parental nutritional status and the incidence of obesity in toddlers.

Table 5. Relationship between the History of Exclusive Breastfeeding and the Incidence of Obesity in Toddlers in the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

History of Exclusive Breastfeeding	Obesity in Toddlers						P value
	Obesity		Not obese		Total		
	n	%	n	%	n	%	
Not exclusive breastfeeding	20	80	5	20	25	100	0.020
exclusive breastfeeding	11	44	14	56	25	100	
Total	31	62	19	38	50	100	

Table 5 shows the relationship between the history of exclusive breastfeeding and the incidence of obesity in toddlers at the Outpatient Department of Pediatrics Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, Saudi Arabia. From the data presented, it can be seen that of the 25 toddlers who

did not receive exclusive breastfeeding, 20 toddlers (80%) were obese, while only 5 toddlers (20%) were not obese. On the other hand, of the 25 toddlers who received exclusive breastfeeding, 11 toddlers (44%) were obese, while 14 toddlers (56%) were not obese. Overall, there were 31 toddlers (62%) who were obese and 19 toddlers (38%) who were not obese. The results of the analysis showed a p-value of 0.020, which indicates a significant relationship between the history of exclusive breastfeeding and the incidence of obesity in toddlers.

Table 6. Relationship between Parenting Patterns and the Incidence of Obesity in Toddlers at the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

Parenting Patterns	Obesity in Toddlers						P value
	Obesity		Not obese		Total		
	n	%	n	%	n	%	
Permissive	14	93.3	1	6.7	15	100	0.007
Neglect	5	55.6	4	44.4	9	100	
Authoritarian	9	60	6	40	15	100	
Democratic	3	27.3	8	72.7	11	100	
Total	31	62	19	38	50	100	

Table 6 presents the relationship between parenting styles and the incidence of obesity in toddlers at the Outpatient Department of Pediatrics Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, Saudi Arabia. The data show that of the 15 toddlers raised in a permissive parenting style, 14 (93.3%) were obese, while only 1 (6.7%) was not obese. For the neglectful parenting style, 5 (55.6%) were obese and 4 (44.4%) were not obese out of a total of 9 toddlers. In the authoritarian parenting style group, 9 (60%) were obese, while 6 (40%) were not obese. Meanwhile, in the democratic parenting style, only 3 (27.3%) were obese, while 8 (72.7%) were not obese out of a total of 11 toddlers. Overall, there were 31 (62%) toddlers who were obese and 19 (38%) were not obese. The p-value obtained was 0.007, indicating a significant association between parenting styles and obesity in toddlers. This finding indicates that more permissive parenting styles tend to increase the risk of obesity in children, while democratic parenting styles have a greater potential to prevent obesity.

Discussion

The Relationship Between Mother's Knowledge and the Incidence of Obesity in Toddlers in the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

Research results show a relationship between maternal knowledge and the incidence of obesity in toddlers. A mother's knowledge of health and nutrition is a factor that significantly influences toddlers' eating patterns. Research by(Nasution & Pebrianthy, 2019)revealed that the causal factors in preventing obesity in toddlers are influenced by education, sources of information and knowledge which together are the most dominant variables related to preventing obesity, OR value = 2.52.

According to researchSuriani (2019)Mothers' knowledge of high-calorie foods is still low, and they allow their children to consume ready-to-eat foods that are low in nutrients, given that they are often prepared by frying. Knowledge of health and nutrition is a significant factor in influencing eating patterns.

Adequate education and information resources are key factors in obesity prevention. Therefore, it is crucial for public health programs to focus on improving maternal nutrition and health knowledge as a strategic step to reduce obesity rates in toddlers. Ongoing education can help mothers make better decisions about their children's diet and active lifestyles, positively impacting their children's long-term health.(Narendra, 2020).

Maternal knowledge influences childhood obesity because mothers, as primary caregivers, play a central role in determining their children's diet and physical activity patterns. Mothers who are knowledgeable about nutrition and health are better able to choose balanced and nutritious foods, such as fruits, vegetables, and quality protein sources, while limiting foods high in calories, saturated fat,

and sugar. These decisions influence not only children's calorie intake but also the quality of nutrition they receive, which is crucial for healthy growth and development.(Nasution & Pebrianthy, 2019).

Mothers with good knowledge of nutrition and health tend to provide healthier foods for their children and limit their consumption of high-calorie, low-nutrient foods. A mother's knowledge of the importance of physical activity also influences her child's habits and activity levels. Mothers who understand the importance of physical activity tend to encourage their children to exercise and reduce the amount of time they spend sitting or playing with gadgets. (Narendra, 2020).

According to the researchers' analysis, this study shows that maternal knowledge has a significant impact on the incidence of obesity in toddlers. The high proportion of obese toddlers among mothers with less knowledge emphasizes the importance of education about nutrition and healthy eating patterns. Mothers' ignorance or lack of understanding about nutrition can lead to unhealthy food choices, which contributes to an increased risk of obesity. Mothers with good knowledge tend to be better able to choose nutritious foods and educate their children about the importance of healthy eating patterns.

Analysis of the results of this study shows that increasing maternal knowledge not only impacts food choices but also children's physical activity habits. Mothers who understand the benefits of physical activity are more likely to encourage their children to engage in healthy activities, such as outdoor play and exercise, and to reduce excessive gadget use. This aligns with findings that healthy behaviors based on sound knowledge are more effective in preventing childhood obesity.

The Relationship between Parental Nutritional Status and the Incidence of Obesity in Toddlers at the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

The results of the study showed that the nutritional status of parents is related to the incidence of obesity in toddlers.

In addition to genetic factors, the family environment, including diet and physical activity habits, also plays a significant role in the development of obesity. Children raised in environments where their parents not only consume high-calorie foods but also exhibit sedentary behavior are more likely to develop obesity. The importance of heredity in the development of obesity cannot be overstated, as aspects such as metabolism and body composition are strongly influenced by genes. The involvement of the enzyme lipoprotein lipase (LPL) in fat metabolism adds another dimension to how obesity is inherited in families.(Handayani & Kusumastuty, 2022).

Parental obesity influences childhood obesity because parents are the primary behavioral role models in their children's lives. Children tend to imitate their parents' eating habits and physical activity. When parents have unhealthy eating habits, such as consuming fast food or foods high in sugar and fat, and lack physical activity, their children tend to adopt the same behavioral patterns. Furthermore, obese parents may be more susceptible to a lack of knowledge about healthy nutrition, resulting in them not providing the nutritious foods necessary for optimal growth and development.(Handayani & Kusumastuty, 2022).

Research result(Indanah et al., 2021)stated that obesity tends to occur in children who have obese fathers, with 72.4% of fathers having obese children.Rosidah & Kunnati (2019)Research shows that most toddlers have a genetic predisposition to obesity (66.7%). Children of parents with normal weight have a 10% risk of obesity. If one parent is obese, the risk increases to 40–50%. And if both parents are obese, the risk of obesity increases to 70–80%.

According to the researchers' analysis, the results showed a significant relationship between parental nutritional status and the incidence of obesity in toddlers, with data indicating that children of both obese parents had a very high prevalence of obesity. This finding is consistent with previous research showing that genetic factors have a significant impact on the tendency for obesity in children. If both parents are obese, the child's risk of developing it increases dramatically, indicating a genetic component underlying this tendency.

The Relationship between Exclusive Breastfeeding History and the Incidence of Obesity in Toddlers at the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

The results of the study showed that exclusive breastfeeding is related to the incidence of obesity in toddlers.

Research shows that introducing complementary foods before the appropriate age can disrupt a baby's natural eating patterns and increase the risk of excess calories. Furthermore, longer breastfeeding duration, beyond 12 months, significantly reduces the risk of obesity in children. Therefore, it is important for parents and health professionals to understand and support exclusive breastfeeding for the first six months of life and the gradual introduction of complementary foods thereafter. Education about breastfeeding and healthy eating habits early in life can contribute to the prevention of obesity in the future. Further research is needed to explore the relationship between the duration of exclusive breastfeeding and other risk factors that may influence obesity in toddlers.(Ginting & Besral, 2020).

Ginting & Besral (2020)In his research on the duration of breastfeeding and the risk of obesity in children, he stated that breastfeeding can reduce the risk of obesity if breastfeeding is given for >12 months.-24 months. Furthermore, the age at which children begin receiving complementary foods is also a factor that can contribute to obesity in children.

Research bySuciati & Istiari (2020)Studies have shown a significant difference between exclusive and non-exclusive breastfeeding and the incidence of childhood obesity. Exclusive breastfeeding reduces the risk of being overweight/obese later in life.

According to the researchers' analysis, the results showed that toddlers who were not exclusively breastfed had a higher risk of obesity compared to those who were. This demonstrates the importance of fulfilling children's right to exclusive breastfeeding, which has been shown to have a positive impact on long-term health. Exclusive breastfeeding not only provides optimal nutrition for a child's growth and development but can also help regulate metabolism and prevent excessive weight gain. Breast milk contains easily digestible nutrients and has a protective effect against obesity due to its ability to promote the development of healthy gut flora. When babies begin receiving complementary foods too early or are fed high-calorie formulas, they are at risk of developing unhealthy eating habits, which can contribute to obesity later in life.

The Relationship between Parenting Styles and the Incidence of Obesity in Toddlers at the Outpatient Department of Pediatrics, Dr. Sulaiman Alhabib Medical Center, Alnarjes, Riyadh, Saudi Arabia

The study results show that parenting styles are associated with obesity in toddlers. This is in line with child development theory, which states that a lack of parental supervision can prevent children from learning to recognize boundaries in their eating and physical activity patterns. Neglectful parenting also has a negative impact on obesity, albeit to a lesser extent. In this pattern, a lack of parental attention and support can result in children not getting enough nutrition or engaging in beneficial physical activities. Meanwhile, authoritarian and democratic parenting styles show better outcomes for childhood obesity, with democratic parenting proving most effective in preventing obesity. This suggests that good communication and a balance between boundaries and freedom are crucial in supporting the development of healthy habits in children.(Triana et al., 2020).

Research shows that when mothers are obese, their children's risk of obesity also increases. This may be due to genetic factors, but it is also related to the family's dietary and lifestyle habits. Obese mothers tend to have a poor understanding of good nutrition and may be less likely to encourage physical activity in their children. This explains why the influence of parental obesity, especially maternal obesity, has a greater impact on the incidence of obesity in children, as they tend to imitate their parents' eating and lifestyle behaviors. Thus, permissive parenting, which allows children freedom in food choices and lacks supervision of physical activity, and parental obesity, especially maternal obesity, may contribute to an increased risk of obesity in toddlers.(Muri'ah, 2020).

Several previous studies have shown a link between parenting styles and the incidence of obesity in toddlers. Research by (Triana et al., 2020) In their study, they found that overly permissive or under-supervised parenting was associated with unhealthy food intake and low physical activity in children, which contributed to the risk of obesity. This research emphasizes the importance of parental supervision in shaping children's eating and physical activity habits.

Study (Pratiwi & Hamdiyah, 2019) showed a result of 0.000 ($p > 0.05$) meaning that there is a relationship between parenting patterns of food intake and obesity. Data analysis for parenting patterns of fast food consumption and obesity showed a result of 0.002 ($p < 0.05$) meaning that there is a relationship between parenting patterns of fast food consumption and obesity.

Permissive parenting (where parents are overly indulgent) is associated with higher rates of childhood obesity. This study suggests that a balance between parental supervision and support is key to preventing childhood obesity. A lack of restrictions in parenting and limited supervision of children's food choices and physical activity can increase the risk of obesity. Parenting that supports good self-regulation in children is associated with a healthy weight. This study suggests that teaching children how to regulate their own food intake in a supportive environment can reduce the risk of obesity. Parenting that involves good supervision, emotional support, the application of appropriate limits, and the promotion of self-regulation appears to be effective in preventing childhood obesity. (Pratiwi & Hamdiyah, 2019).

According to the researchers' analysis, the results showed a significant relationship between parenting styles and obesity in toddlers, with permissive parenting being most associated with high obesity rates. This parenting style, characterized by a lack of control and limits on children, allows them excessive freedom in food and activity choices, potentially increasing calorie consumption and reducing physical activity.

CONCLUSIONS

This study shows that the incidence of obesity in toddlers at the Outpatient Department of Pediatrics Dr. Sulaiman Alhabib Medical Center Alnarjes, Riyadh, is relatively high, reaching 62% of all respondents. The analysis results prove that maternal knowledge, parental nutritional status, history of exclusive breastfeeding, and parental parenting patterns have a significant relationship with the incidence of obesity in toddlers. Toddlers are at higher risk of obesity if the mother has low nutritional knowledge, parents are obese, do not receive exclusive breastfeeding, and are raised with a permissive parenting style. However, this study has limitations due to its cross-sectional design that cannot explain causal relationships, a relatively small sample size and only comes from one health care facility that limits the generalizability of the results, and the use of questionnaires that have the potential to cause information bias from respondents.

The findings of this study provide practical implications that efforts to prevent obesity in toddlers need to be carried out comprehensively through improving nutritional education for parents, promoting exclusive breastfeeding, establishing parenting patterns that support healthy lifestyles, and implementing regular family nutritional status screenings in health care facilities. Nurses, along with other health workers, have a crucial role in providing counseling on diet management, physical activity, and monitoring child growth as part of promotive and preventive programs. Future research is recommended to use a longitudinal or cohort design to obtain a stronger picture of causal relationships, involving a larger sample size and a wider research area, and adding other variables such as physical activity, food consumption patterns, duration of device use, socioeconomic status, and genetic factors to obtain a more comprehensive understanding of the determinants of obesity in toddlers.

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