REVISTA DE NUTRIÇÃO
*Brazilian Journal of Nutrition*

ORIGINAL
*ORIGINAL*

**Nutritional Assessment**
***Avaliação Nutricional***

**Editor**
Luciana Bertoldi Nucci

**Conflict of interest**
The authors declare they have no conflict of interests.

**Received**
January 25, 2023

**Final version**
May 29, 2023

**Approved**
September 4, 2023

# Assessment of eating habits of preschool children and parent attitudes

## *Avaliação dos hábitos alimentares de pré-escolar e atitudes dos pais*

Feyzanur Erdem[1], Seçil Arıca[1]

[1] Health Science University, Prof. Dr. Cemil Tascioglu City Hospital, Family Medicine Department. Istanbul, Turkey. Correspondence to: F ERDEM. E-mail: <drfeyzanurerdem@gmail.com>.

**How to cite this article:** Erdem F, Arıca S. Assessment of eating habits of preschool children and parent attitudes. Rev Nutr. 2023;36:e230003. https://doi.org/10.1590/1678-9865202336e230003

## ABSTRACT

### Objective
The purpose of this study is to investigate preschoolers' eating behaviors and parents' attitudes.

### Methods
This descriptive observational study employed a convenience sampling method to investigate the eating behavior of preschool children aged 3-6 years. Data was collected through a Personal and Parent Information Form and the Children's Eating Behavior Inventory. The study included 206 participants, and the findings provide insights into parental attitudes toward feeding and children's eating behaviors in 3-6 age group.

### Results
The study sample included 206 parents of children between the ages of 3 and 6, with the majority of children having a normal weight. Parents' responses to the survey questions revealed significant correlations between children's weight percentiles and parental education level, maternal body mass index level, and income level. Positive eating behaviors in children were positively correlated with parental age and education level, income level, child age, and child percentile level, while negative eating behaviors were negatively correlated with parental age, educational status, income level, and positively correlated with maternal body mass index level. Gender differences were observed, with male children exhibiting lower mean scores in negative eating behaviors, maternal views and behaviors, child food preparation behavior, and negative meal situations compared to female children.

### Conclusion
We found that parental education level and income level were correlated with children's positive eating behavior, while they were negatively associated with negative eating behavior. Negative eating behavior and food preparation behavior were lower in boys than in girls.

**Keywords**: Feeding Behavior. Obesity. Child, Preschool.

## RESUMO

***Objetivo***

*Este estudo observacional descritivo teve como objetivo investigar os comportamentos alimentares de crianças em idade pré-escolar e as atitudes dos pais.*

***Métodos***

*Foi utilizado um método de amostragem por conveniência para coletar dados sobre o comportamento alimentar de crianças com idades entre 3 e 6 anos. Foram aplicados um Formulário de Informações Pessoais e de Pais e o Inventário de Comportamento Alimentar Infantil, e a análise estatística foi realizada utilizando o programa IBM®SPSS® 16.0. O estudo contou com a participação de 206 pais fornecendo informações sobre as atitudes dos pais em relação à alimentação e os comportamentos alimentares das crianças na faixa etária de 3 a 6 anos.*

***Resultados***

*A amostra do estudo incluiu 206 pais de crianças com idades entre 3 e 6 anos, sendo a maioria das crianças com peso normal. As respostas dos pais às perguntas da pesquisa revelaram correlações significativas entre os percentis de peso das crianças e o nível educacional dos pais, índice de massa corporal materno e nível de renda. Comportamentos alimentares positivos nas crianças foram positivamente correlacionados com a idade e nível educacional dos pais, nível de renda, idade da criança e percentil de peso da criança, enquanto comportamentos alimentares negativos foram negativamente correlacionados com a idade dos pais, nível educacional, nível de renda e positivamente correlacionados com o índice de massa corporal materno. Foram observadas diferenças de gênero, com as crianças do sexo masculino apresentando pontuações médias mais baixas em comportamentos alimentares negativos, visões e comportamentos maternos, comportamento de preparação de alimentos infantis e situações negativas durante as refeições em comparação com as crianças do sexo feminino.*

***Conclusão***

*Demonstra-se que o nível educacional e o nível de renda dos pais estão relacionados ao comportamento alimentar positivo das crianças, enquanto estão inversamente associados ao comportamento alimentar negativo. Comportamentos alimentares negativos e comportamentos de preparação de alimentos foram menores em meninos em comparação com meninas.*


***Palavras-chave***: *Comportamento alimentar. Obesidade. Pré-escolar.*

## INTRODUCTION

Children's optimal growth and development is dependent on the provision of a nurturing environment, particularly during their formative years, specifically the first six years of life. Caregivers and parents, in particular, play a full-time role in influencing a child's behavior during this crucial period, which can have enduring effects on their lifelong development [1,2].

Eating behavior is highly complex and affected by a variety of factors including physical environment, social environment and individual characteristics [1,3-6]. Parents and caregivers have a significant impact on shaping children's eating behavior, particularly during toddlerhood and preschool age [1]. They shape eating behaviors by providing access to foods and through their own eating styles, behavior during mealtimes, and child feeding practices [1,4-6]. In a recent review, it was found that parents who adopt a moderate restriction approach, gradually decreasing and limiting unhealthy food items while offering positive messages and encouraging a variety of foods, may promote healthier dietary habits in their children. In contrast, overly restrictive feeding practices have been linked to overeating, particularly among preschool children [4].

It is very common for parents and caregivers of preschool children to be overly concerned about their children's weight and eating habits. This can be driven by a variety of factors, such as parents' own weight and body image concerns, societal pressures related to body weight, or worries about their children's health. However, research suggests that overly concerned parents may be more

likely to engage in feeding practices that are counterproductive, such as pressuring their children to eat or restricting their food intake. This can have negative impacts on the children's relationship with food and overall health. Therefore, healthcare providers should take concerns about child weight seriously, but also work with parents to address their concerns and provide evidence-based guidance on healthy feeding practices. A family-centered approach that takes into account the unique needs and circumstances of each family may be most effective in promoting healthy eating behaviors and preventing eating disorders in children [7-11].

The role of parents in shaping their children's food preferences and energy intake is well-established in the literature, with certain feeding practices having the potential to significantly impact children's eating behavior [1,3,5-6,10]. Given the importance of parental influence on young children's eating habits, this study aimed to investigate the eating behavior of preschool children aged 3-6 years and explore parents' attitudes toward feeding. Through this research, we hope to gain a better understanding of the factors that contribute to healthy eating behaviors in young children as well as identify areas where parents may benefit from additional guidance and support in promoting positive eating habits in their children.

## METHODS

Our study was designed as observational descriptive research. The instruments employed in the study were a Personal and Parent Information Form and a Children's Eating Behavior Inventory. Approval was obtained from the Ministry of Health of Istanbul Health Sciences University Training and Research Hospital Clinical Research Ethics Committee on 01/06/2018 under decision nº 1284. The study was conducted in accordance with ethical legislation.

Conveinence sampling method was used in this study. Informed Consent Forms were obtained from parents who volunteered to participate in the study. Children were informed verbally in a language they could understand. Written consent form was obtained from parents. There were no questions for children in the questionnaire form. The entire questionnaire consisted of questions for parents.

The personal and parent information form was prepared by the researchers in order to determine the sociodemographic characteristics of the children and parents participating in the study. Personal information form includes questions about the children and parental age, educational status, income status, children's height and weight, current chronic disease information, and parents' thoughts about children's appetite and development.

The Children's Eating Behavior Inventory was developed and standardized by Lynda A. Archer in 1990 in Canada [11]. The Turkish validity and reliability of the inventory were performed by Ünlü [12]. In the Turkish version, Cronbach's alpha coefficient of the inventory was reported as 0.81, and Pearson correlation coefficient, 0.75 ($p$<0.01). This inventory was prepared to be filled by parents regarding childhood eating behavior and mealtime problems. It was aimed to determine the effect of parental attitude and family structure on children's eating behavior problems. The inventory consists of 40 items, and some of the questions are about the children and some are about the parents and other family members. Each item of this inventory has been prepared with a five-point Likert system to determine how often the behavior in question occurs, and includes the statements "always", "often", "sometimes", "rarely", "never". In the inventory assessment, items were collected and assessed under the headings of children's positive eating behavior, children's negative eating behavior (Table 1).

**Table 1** – Children's Eating Behavior Inventory Questions.

| Question no | Inventory Question Content | Average score |
|---|---|---|
| | Positive eating behaviors exhibited by the child | |
| 1 | My child chews food as expected for his age | 4.08 |
| 9 | My child feed him/her self as expected for his/her age | 3.18 |
| 21 | My child eats foods that taste different | 2.40 |
| 23 | My child uses cutlery as expected for his/her age | 4.15 |
| 35 | My child says he/she is hungry | 3.86 |
| 36 | My child says he/she'll get fat if he/she eats too much | 2.49 |
| | Negative eating behaviors exhibited by the child | |
| 3 | My child watches TV at meals | 3.95 |
| 5 | My child takes more than half an hour to eat his/her meals | 3.48 |
| 6 | Relatives complain about my child's eating | 2.46 |
| 15 | My child comes to table 1 or 2 minutes after I call | 2.93 |
| 28 | My child lets food sit in his/her mouth | 1.93 |
| 34 | My child eats when upset | 1.81 |
| 38 | My child hides food | 1.88 |
| 39 | My child brings toy sor books to the table | 2.29 |
| | Negative eating behaviors exhibited by the child outside of mealtime | |
| 8 | My child asks fo r food which he/she shouldn't have | 3.97 |
| 10 | My child gags at mealtimes | 1.51 |
| 14 | My child takes food between meals without asking | 3.18 |
| 17 | My child eats quickly | 2.19 |
| 18 | My child makes foods for him/her self when not allowed | 2.84 |
| 20 | At home my child eats food he/she shouldn't have | 3.44 |
| 24 | At friends' homes my child eats food he/she shouldn' t eat | 3.53 |
| 25 | My child asks for food between meals | 3.67 |
| 27 | My child eats chunky foods | 3.68 |
| | Maternal views and behaviors | |
| 4 | I feed my child if he(she doesn'e eat | 3.29 |
| 7 | My child enjoys eating | 3.20 |
| 11 | I feel confident my child eats enough | 3.23 |
| 12 | I find our meals stressful | 2.59 |
| 19 | I get upset when my child doesn't eat | 3.49 |
| 22 | I let my child have snacks between meals if he/she doesn't eat at meals | 3.79 |
| 26 | I get upset when I think about our meals | 2.33 |
| 29 | At dinner I let my child choose the foods he/she wants from what is served | 3.26 |
| 30 | My child's behavior at meals upsets my spouse | 2.35 |
| | Behaviors of the child regarding food preparation | |
| 2 | My child helps to set the table | 3.17 |
| 37 | My child helps to clear the table | |
| | Negative conditions for the child during the meal | |
| 13 | My child vomits at mealtime | 1.47 |
| 16 | My child chokes at mealtimes | 1.41 |
| | Family consequences. how the child feels about their behavior understanding. Controlling behavior | |
| 31 | I agree with my spouse about how much our child should eat | 3.08 |
| 32 | My child interrupts conversations with my spouse at meals | 2.74 |
| 33 | I get upset with my spouse at meals | 2.25 |
| 40 | My child's behavior at meals upsets our other children | 1.73 |

Participants were determined as those who accepted to participate in the study from parents with children between the ages of 3-6 who applied to the Haseki Education Family Health Center outpatient clinic within the specified time. The questionnaire form prepared for parents was filled by the assistant researcher through on-site interviews with parents of children. Anthropometric measurements of children included in the questionnaire were recorded by the researchers. Anthropometric measurements of children were measured via CDC guidelines [13]. A calibrated

scale was used for weight measurement. Weight measurements were taken with children wearing thin clothes and without shoes. Height was measured without shoes with a stadiometer. Children with a chronic disease with potential impact on Body Mass Index (BMI) (such as diabetes, thyroid diseases, malignant diseases) were excluded from the study.

Inclusion criteria for the study, included individuals who are registered as parents of children between the ages of 3 and 6, and whose children are enrolled in the Istanbul Haseki Education Family Health program. Parents must agree to participate in the study.

Exclusion criteria from the study included individuals who were unable to consume food orally, those who required formula or other nutritional interventions due to underlying health conditions, those who fell outside the designated age range of 3 to 6 years old, and those who declined to participate in the study.

The IBM®SPSS® 16.0 program (for Windows, Version 16.0.) was used for statistical analysis. Descriptive statistics, such as numbers and percentages for categorical variables, median, interquartile range, minimum and maximum for numerical variables were given. Since the numerical variables did not meet the normal distribution condition, comparisons of two independent groups were made with the Mann-Whitney U test. Comparisons of more than two groups were compared with the Kruskal-Wallis test. The relationships between numerical variables were analysed by Spearman's correlation analysis. Statistical alpha significance level was accepted as $p<0.05$.

The sample size for the study was determined using the G*Power 3.1.9.7 software. The effect size was calculated based on the mean and standard deviation of the groups. The significance level ($\alpha$) was set at 0.05, and the desired power ($1 - \alpha$) was set at 0.95. Based on these parameters, the calculated power of the study was 96%, and the required sample size was determined to be 206.

## RESULTS

The final study sample consisted of 206 parents of children, and their sociodemographic data can be found in Table 2. This study included children with an average age of 4.6±1.0 (3-6) years, comprising 51.2% girls and 48.8% boys. When assessing weight based on percentile ranges, 64.7% of children had normal weight (n=134), 11.5% were underweight (n=24), 7.7% were overweight (n=16), and 15.9% were classified as obese/overweight (n=33). Mothers' assessments of their children's weight are also presented in Table 2.

**Table 2** – Parental sociodemographic information and weight data of children.

1 of 2

| Sociodemographic information | M±SD | (Min-Max) | n | % |
|---|---|---|---|---|
| Maternal age | 30.3±6.3 | (17-55) | | |
| Paternal age | 33.0±6.4 | (20-60) | | |
| Maternal education status | | | | |
| Literate | | | 72 | 35.3 |
| Elementary school | | | 85 | 41.4 |
| High school | | | 33 | 16.1 |
| Higher education | | | 13 | 6.2 |
| Master's/PhD* | | | 2 | 1.0 |
| Paternal education status | | | | |
| Literate | | | 42 | 21.4 |
| Elementary school | | | 92 | 46.9 |
| High school | | | 37 | 18.9 |

**Table 2** – Parental sociodemographic information and weight data of children.



| Sociodemographic information | M±SD | (Min-Max) | n | % |
|---|---|---|---|---|
| Higher education | | | 21 | 10.7 |
| Master's/PhD* | | | 4 | 2.1 |
| Parental relationship status | | | | |
| Mother or father passed away | | | 7 | 3.4 |
| Divorced/living apart | | | 23 | 11.2 |
| Living together | | | 176 | 85.4 |
| Maternal weight** | | | | |
| Underweight | | | 2 | 0.9 |
| Normal weight | | | 66 | 31.8 |
| Overweight | | | 76 | 36.6 |
| Obese | | | 64 | 30.7 |
| Mother's Perception of Child's Weight | | | | |
| Too underweight | | | 4 | 2.0 |
| Underweight | | | 27 | 13.4 |
| Normal | | | 92 | 45.5 |
| Overweight | | | 61 | 30.2 |
| Obese | | | 18 | 8.9 |

Note: *Doctor of philosophy; **Mother's weight classification according to Body Mass Index level. M: Mean; SD: Standard Deviation.

The average score of the answers given by parents to the survey questions is shown in Table 1 (1: Never, 2: Seldom, 3: Sometimes, 4: Often, 5: Always). Our results revealed a statistically significant positive correlation between children's percentiles and parental education level, maternal BMI level, and income level ($p$=0.011, $p$=0.002, $p$<0.001, $p$=0.004) (Table 3).

**Table 3** – Parental education level and child percentile.

| Parental Sociodemographic Information | Child percentile | |
|---|---|---|
| | rho | *p* |
| Maternal education level | 0.177 | 0.011 |
| Paternal education level | 0.223 | 0.002 |
| Maternal Body Mass Index | 0.244 | <0.001 |
| Income level | 0.203 | 0.004 |

Note: rho: Spearman correlation coefficient.

Furthermore, we found that positive eating behaviors in children were positively and statistically significantly correlated with parental age and education level, income level, child age, and child percentile level. Negative eating behaviors were negatively correlated with maternal and paternal age, educational status, income level, and positively correlated with maternal BMI level (Table 4).

**Table 4** – Children's eating behavior association with some familial factors.



| Children's eating behavior | Maternal age | | Paternal age | | Maternal education level | | Paternal education level | | Income level | | Maternal BMI | | Child age | | Child percentil | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* |
| Positive eating behaviors exhibited by children | 0.214 | 0.002 | 0.279 | < 0.001 | 0.255 | < 0.001 | 0.201 | 0.005 | 0.244 | < 0.001 | 0.126 | 0.072 | 0.249 | < 0.001 | 0.292 | < 0.001 |

**Table 4** – Children's eating behavior association with some familial factors.



| Children's eating behavior | Maternal age | | Paternal age | | Maternal education level | | Paternal education level | | Income level | | Maternal BMI | | Child age | | Child percentil | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* | rho | *p* |
| Negative eating behaviors exhibited by children | -0.176 | 0.011 | -0.217 | 0.002 | -0.225 | 0.001 | -0.155 | 0.030 | -0.175 | 0.013 | 0.198 | 0.005 | -0.087 | 0.214 | -0.098 | 0.163 |
| Negative eating behaviors exhibited by children outside mealtime | -0.071 | 0.314 | -0.024 | 0.740 | -0.115 | 0.102 | -0.133 | 0.063 | 0.021 | 0.766 | 0.304 | < 0.001 | 0.043 | 0.542 | 0.221 | 0.001 |
| Maternal views and behaviors | -0.122 | 0.081 | -0.158 | 0.027 | -0.223 | 0.001 | -0.213 | 0.003 | -0.165 | 0.018 | 0.102 | 0.145 | -0.152 | 0.029 | 0.013 | 0.856 |
| Children's behaviors regarding food preparation | -0.026 | 0.713 | -0.023 | 0.749 | -0.094 | 0.179 | -0.096 | 0.179 | -0.115 | 0.103 | 0.095 | 0.176 | 0.009 | 0.893 | -0.129 | 0.065 |
| Negative conditions for children during the meal | -0.075 | 0.285 | -0.182 | 0.011 | -0.260 | < 0.001 | -0.286 | < 0.001 | -0.305 | < 0.001 | 0.108 | 0.125 | -0.147 | 0.035 | -0.218 | 0.002 |
| Family outcomes; children's behavior comprehend and control their behaviors | -0.031 | 0.658 | -0.091 | 0.206 | -0.008 | 0.905 | -0.080 | 0.267 | -0.022 | 0.753 | 0.183 | 0.009 | 0.111 | 0.112 | 0.185 | 0.008 |

Note: BMI: Body Mass Index; rho: Spearman correlation coefficient.

In terms of gender differences, our study showed that negative eating behaviors, maternal views and behaviors, child food preparation behavior, and negative meal situations for male children had significantly lower mean scores compared to female children ($p$=0.001, $p$=0.007, $p$<0.001, $p$=0.001) (Table 5).

**Table 5** – Eating behaviors by gender.

| Eating behaviors | Child gender | | | | *p* |
|---|---|---|---|---|---|
| | Male | | Female | | |
| | M | SD | M | SD | |
| Positive eating behaviors exhibited by children | 3.6 | 0.8 | 3.5 | 0.8 | 0.615 |
| Negative eating behaviors exhibited by children | 2.5 | 0.7 | 2.8 | 0.7 | 0.001 |
| Negative eating behaviors exhibited by children outside mealtime | 3.5 | 0.9 | 3.4 | 0.9 | 0.662 |
| Maternal views and behaviors | 3.0 | 0.6 | 3.2 | 0.6 | 0.007 |
| Children's behaviors regarding food preparation | 2.2 | 0.8 | 2.8 | 0.8 | <0.001 |
| Negative conditions for children during the meal | 1.3 | 0.6 | 1.6 | 0.9 | 0.001 |
| Family consequences, how children feel about their behavior understanding, controlling behavior | 2.7 | 0.6 | 2.7 | 0.6 | 0.772 |

Note: M: Mean; SD: Standard Deviation.

## DISCUSSION

Children's eating behaviors and weight can be influenced by many factors, including parental weight status, education level, income level, dietary behaviors, access to food, availability of home-cooked food, parental stress and portion size [1,3,5-6,8-10-14-16]. Our study found that higher parental socioeconomic level was associated with positive eating behaviors in children. Moreover, as the socioeconomic level decreased, children's negative eating behavior increased and maternal BMI

score increased. In many studies conducted on mothers in the literature, it is found that as maternal educational level increases, children's healthy eating status increases [17-19]. In a study conducted with elementary school students in China, it was found that parents' healthy eating behaviors (e.g., daily breakfast, consumption of vegetables and fruits, consumption of dairy products) were strongly related to children's healthy eating as their status increased [18]. Moreover, a recent USA study found that prevalence of obesity among youths was inversely related to household income and education level of the head of household, and these associations varied by race/ethnicity [20].

In our study, we found that as maternal BMI increased, child percentiles also increased. This suggests that a child's risk of obesity increases if their mother is obese. This may be due to both genetic predisposition and environmental factors. Children often imitate the eating behaviors of their parents, so if a mother has unhealthy eating habits, her child is more likely to become obese due to poor nutrition. Many studies in recent years have shown that parental obesity is a strong predictor of childhood obesity [21-27]. For instance, a study by Tan et al. (2021) found that parental obesity was associated with an increased risk of childhood obesity [25]. Another study by Rhee et al. (2020) found that maternal BMI was a strong predictor of child BMI trajectories [26]. In addition to parental weight status, other factors such as income level, access to healthy food, and stress levels may also play a role in child obesity risk. For instance, a recent study by Pham et al. (2021) found that food supplementation and dietary diversity were associated with better nutritional outcomes in children in Papua New Guinea [27].

According to the findings of our study, adverse eating behaviors exhibited by children were observed to have a negative correlation with the level of education attained by parents. Moreover, these eating behaviors were found to have a significant positive correlation with maternal BMI. In a study conducted in Turkey, negative eating behaviors were found to be negatively associated with paternal education level [12]. When the prevalence of eating behavior while watching television was questioned, 41.5% of parents said that they always watched TV, and 25.6% said that they watched it frequently. Television viewing is a very important risk factor for obesity in terms of both seeing unhealthy products promoted in advertisements, thus increasing the rate of preference, and limiting viewers' physical activity [28]. Many studies have been conducted on watching television and being overweight, and it has been revealed that television increases the condition of being overweight [29-30].

In a study examining the effects of television advertisements on preschool children in our country, it has been found that children are not only exposed to adult age group programs while watching television (TV) with their families. Not only their own age group, they watch food advertisements on television with interest and are influenced by advertisements and demand these products from their parents [31]. Again, in a study conducted for children in Turkey, it was found that children liked sweetened beverage and chocolate advertisements the most and demanded these foods [32]. In a recent study, it was found that children who watched TV during meals consumed more energy-dense, nutrient poor foods and had higher overall energy intake compared to children who did not watch TV during meals. The authors also noted that TV viewing during mealtimes may interfere with children's ability to regulate their food intake and recognize satiety cues [33]. In our study, it was found that preschool students were exposed to television, did not take adequate precautions and made their children watch television.

When asked to rate junk food consumption among children alone, which is one of the negative eating behaviors in our study, 50% responded as always or often. A one-year longitudinal study examined children's fast-food consumption habits. It was found that parental fast food consumption

strongly predicted children's fast food consumption, and children whose parents consumed fast food more frequently had the highest risk for consuming fast food. For children whose parents consumed fast food less frequently, high exposure to fast food advertising TV was as influential as having a parent who consumed fast food more frequently [34].

In our study, when the sub-dimensions of the inventory were assessed in terms of gender, negative eating behaviors were found to be significantly higher in boys, and meal preparation behaviors were found to be significantly lower. In the literature, while some of the studies conducted with preschool children found more behavioral disorders in male, no significant relationship was found with gender in some of them [35-37]. Feeding problems were found to be more common in males in our study, but studies with larger samples are needed to determine the relationship. In our study, boys' food preparation behaviors were found to be low, and it was thought that this resulted due to gender inequality, which is one of the major problems of our country.

## CONCLUSION

The study shows a link between children's weight and parental education, income, and maternal BMI level. Positive eating behaviors were related to age, education, income, child age, and percentile level. Negative behaviors were linked to maternal and paternal age, education, income, and maternal BMI level. Male children had lower scores than females in food preparation and negative meal situations. Parental socioeconomic level was associated with positive eating behaviors, while adverse behaviors were tied to lower parental education and higher maternal BMI. TV exposure was also a risk factor for negative behaviors. The study highlights the importance of considering these factors when preventing childhood obesity.

In our study, only a family health center located in Istanbul Bağcılar was used. The fact that the socioeconomic level of the current center is lower than that of Istanbul may have affected the results.

## REFERENCES

1. National Academies of Sciences, Engineering, and Medicine. Parenting matters: supporting parents of children ages 0-8. Washington: The National Academies Press; 2016. https://doi.org/10.17226/21868
2. Stone RA, Blissett J, Haycraft E, Farrow C. Predicting preschool children's emotional eating: The role of parents' emotional eating, feeding practices and child temperament. Matern Child Nutr. 2022;18(3):e13341. https://doi.org/10.1111/mcn.13341
3. Mahmood L, Flores-Barrantes P, Moreno LA, Manios Y, Gonzalez-Gil EM. The influence of parental dietary behaviors and practices on children's eating habits. Nutrients. 2021;13(4):1138. https://doi.org/10.3390/nu13041138
4. Sirasa F, Mitchell LJ, Rigby R, Harris N. Family and community factors shaping the eating behaviour of preschool-aged children in low and middle-income countries: a systematic review of interventions. Prev Med. 2019;129:105827. https://doi.org/10.1016/j.ypmed.2019.105827
5. Scaglioni S, Salvioni M, Galimberti C. Influence of parental attitudes in the development of children eating behaviour. Br J Nutr. 2008;99(S1):S22-S25. https://doi.org/10.1017/S0007114508892471
6. Silva GP, Almeida SS, Braga Costa TM. Family influence on the nutritional status and eating habits of six to nine year-old children. Rev Nutr. 2021;34:e200165. https://doi.org/10.1590/1678-9865202134e200165
7. Kostyrka-Allchorne K, Cooper PJ. Early childhood adversity and child and adolescent mental health: a systematic review. J Child Fam Stud. 2021;30(1):7-28.
8. Puhl RM, Latner JD. Parental weight and eating concerns: potential harms and recommended interventions. Curr Obes Rep, 2021;10(1),11-8. https://doi.org/10.1007/s13679-020-00401-5

9. Pelly F, Lobo R, Thielking M, Matvienko-Sikar K. The relationship between parental concerns about child weight and eating behaviours and parental stress and anxiety: a cross-sectional study. Appetite. 2021;160:e105124. https://doi.org/10.1016/j.appet.2020.105124
10. Tschann JM, Martinez SM, Penilla C, Gregorich SE, Simon JA, Deardorff J. Parental feeding practices and child weight status in Mexican American families: a longitudinal analysis. Pediatrics. 2015;135(2):e221-e229. https://doi.org/10.1542/peds.2014-1835
11. Archer LA, Rosenbaum PL, Streiner DL. The children's eating behavior inventory: reliability and validity results. J Pediatr Psychol. 1991;16(5):629-42. https://doi.org/10.1093/jpepsy/16.5.629
12. Ünlü H. Adaptation of pre-school children's eating behavior assessment scale to Turkish children [thesis]. Istanbul: Marmara University; 2011.
13. National Health and Nutrition Examination Survey. Antropomethry Procedures Manual. Washington: Centers for Disease Control ans Prevention; 2007 [cited 2023 Jan 1]. Available from: https://www.cdc.gov/nchs/data/nhanes/nhanes_07_08/manual_an.pdf
14. Wolfenden L, Finch M, Wyse R, Wiggers J, Yoong SL, Nathan N, et al. What is the impact of home food environments on eating behaviours and weight in children? A systematic review. Pediatri Obes. 2022;17(1):e12871.
15. Chen Y, Chen C, Li L, Yang Y. Influence of parental factors on preschool children's eating behaviors in China: a cross-sectional study. Int J Environ Res Public Health. 2021;18(2):e561.
16. Nolan EJ, Kelly S, Tudur-Smith B, Jones C, Halford AJC, Robinson E. Portion size of meals for children in England based on parental perspectives: an online survey. Public Health Nutr. 2021;24(7):1813-23.
17. Scaglioni S, De Cosmi V, Ciappolino V, Parazzini F, Brambilla P, Agostoni C. Factors Influencing Children's Eating Behaviours. Nutrients. 2018;10(6):706. https://doi.org/10.3390/nu10060706
18. Liu L, Wang L, Chen X, Cai R, Liu L, Zhang Y. Parental influence on children's healthy eating behavior: evidence from a cross-sectional study of elementary school students in China. BMC Public Health. 2016;16(1):1-9.
19. Vepsäläinen H, Nevalainen J, Fogelholm M. Korkalo L, Roos E, Ray C, et al. Like parent, like child? Dietary resemblance in families. Int J Behav Nutr Phys Act. 2018;15(62). https://doi.org/10.1186/s12966-018-0693-1
20. Ogden CL, Carrol MD, Fakhouri TH, Hales CM, Fryar CD, Li X, et al. Prevalence of Obesity Among Youths by Household Income and Education Level of Head of Household – United States 2011-2014. MMWR Morb Mortal Wky Rep. 2018;67:186-9. http://dx.doi.org/10.15585/mmwr.mm6706a3
21. Jebeile H, Kelly AS, O'Malley G, Baur LA. Obesity in children and adolescents: epidemiology, causes, assessment, and management. Lancet Diabetes Endocrinol. 2022;10(5):35165. https://doi.org/10.1016/S2213-8587(22)00047-X
22. Zamora-Kapoor A, Nelson EL. Parental feeding practices and childhood obesity in US Hispanic/Latino children: a systematic review. Appetite. 2022;169:105787. https://doi.org/10.1016/j.appet.2021.105787
23. Murtaugh MA, Herrick JS, Sweeney C, Baumgartner KB, Guiliano AR, Byers T, et al. Diet composition and risk of overweight and obesity in women living in the southwestern United States. J Am Diet Assoc. 2007;107(9):1311-21. https://doi.org/10.1016/j.jada.2007.05.019
24. Wojcicki JM, Heyman MB. Maternal obesity, breastfeeding intention, and initiation among urban low-income women: a pilot study. Breastfeed Med. 2010;5(3):153-6. https://doi.org/10.1089/bfm.2009.0058
25. Tan C, Chen C, Lin W, Kuo H. Association of parental obesity with childhood obesity: a nationwide, population-based cohort study. Int J Environ Res Public Health. 2021;18(1):331.
26. Rhee KE, Kim J, Wong WW. Maternal BMI is a strong predictor of persistent child obesity: results from a 3-year longitudinal study. Pediatr Obes. 2020;15(1):e12581.
27. Pham BN, Silas VD, Okely AD, Pomat W. Breastfeeding Rate, Food Supplementation, Dietary Diversity Among Children Aged 6-59 Months, and Associated Factors in Papua New Guinea. Front Nutr. 2021;8:622645.
28. Barr-Anderson DJ, van den Berg P, Neumark-Sztainer D, Story M. Characteristics associated with older adolescents who have a television in their bedrooms. Pediatrics. 2008;121(1):718-24.
29. Nakshine VS, Thute P, Khatib MN, Sarkar B. Increased screen time as a cause of declining physical, psychological health, and sleep patterns: a literary review. Cureus. 2022;14(10):e30051. https://doi.org/10.7759/cureus.30051

30. Van Ekris E, Altenburg TM, Singh AS, Proper KI, Heymans MW, Chinapaw MJ. An evidence-update on the prospective relationship between childhood sedentary behaviour and biomedical health indicators: a systematic review and meta-analysis. Obes Rev. 2016;17(9):833-49. https://doi.org/10.1111/obr.12426

31. Akbulut-Yuksel M, Kugler AD. Intergenerational effects of education on obesity, smoking, and drinking behaviors. J Hum Resour. 2019;54(2):346-74.

32. Gursoy C. The effects of television food advertising on children's food behaviors: a national survey in Turkey. Turk J Pediatr. 2018;60(2):167-77.

33. Fisher JO, Karpyn A, Ueddin R, Grajeda R, Krantz DS. (2021). The effects of television viewing during mealtime on food intake in young children. Eating Beha. 2021;42:101502. https://doi.org/10.1016/j.eatbeh.2021.101502

34. Emond JA, Longacre MR, Drake KM, Titus LJ, Hendricks K, MacKenzie T, et al. Influence of child-targeted fast food TV advertising exposure on fast food intake: a longitudinal study of preschool-age children. Appetite. 2019;140:134-41. https://doi.org/10.1016/j.appet.2019.05.012

35. Fatori D, Queiroz TB, Santos LM, Barros MB, Matijasevich A. Association between child behavioral problems and family income: a systematic review and meta-analysis. J Pediatr, 2021;97(1):11-9.

36. Han S, Weiss B. (2017). Gender differences in childhood behavior disorders: areview of current research. J Clin Child Adolesc Psychol. 2017;46(4):492-516.

37. Youngstrom EA, Freeman L, Jenkins M. Gender differences in attention-deficit/hyperactivity disorder symptoms in children and adolescents. J Clin Child Adolesc Psychol. 2021;50(2):260-72.

## CONTRIBUTORS

F ERDEM contributed to the data analysis and interpretation, revision. S ARICA contributed to the study's conception and design, approval of the final version.