



# The Effects of Time of Watching Television and Food Advertisements on Nutritional Status of Preschool Children

## Televizyon İzleme Süresi ve Gıda Reklamlarının Okul Öncesi Çocukların Beslenme Durumuna Etkisi

Utku Begüm ÖZTÜRKLER ÇAKIR<sup>1</sup>, Sedef DURAN<sup>1</sup>, Seher CAN<sup>1</sup>, Erkan Melih ŞAHİN<sup>2</sup>

<sup>1</sup>Trakya University Faculty of Health Sciences, Department of Nutrition and Dietetics, Edirne, Turkey

<sup>2</sup>Çanakkale Onsekiz Mart University Faculty of Medicine, Department of Family Medicine, Çanakkale, Turkey

### ABSTRACT

**Aim:** Watching television for a long time affects the nutrition of children, and the effect of orientation on these foods is quickly seen in children watching food advertisements. The aim of this study was to determine the nutritional status and television viewing time of children aged 3-4 and 5 years, to examine the effect of food advertisements on the nutritional status of children, and to determine how this effect impacted the nutrient intake of children.

**Materials and Methods:** The study was conducted with 215 adult parents who volunteered to collect information about children in order to determine the nutritional status and television watching time of 3-4 and 5-year-old children studying in a kindergarten in Edirne city center and to evaluate these situations. Children's socio-demographic characteristics, anthropometric measurements, food consumption frequency and food consumption records, nutrition and television watching habits were evaluated.

**Results:** It was found that 49.8% of children watched television for 2-3 hours a day on average, and 36.7% demanded the food they saw in food advertisements 1-2 times a week. A positive and significant relationship was determined between the fact that the food advertisements on the television attracted the attention of children and the frequency of the children wanting the food they saw in the advertisements, like acidic beverages, fruit juice, chips, chocolate, wafers, sweets, biscuits and crackers ( $p<0.05$ ). Daily energy intake, the percentage of carbohydrates in the food pattern, and daily sugar consumption were found to be higher in children who paid attention to food advertisements compared to those who did not ( $p<0.05$ ). It was determined that the consumption of chocolate, wafer, soda and fruit juice increased as the television viewing time increased ( $p<0.05$ ).

**Conclusion:** As a result, television viewing time and food advertisements on television can be effective on children's food choices and thus their nutritional status.

**Keywords:** Child, nutrition, food advertisement

### ÖZ

**Amaç:** Uzun süreli televizyon izlemek çocukların beslenmesini etkiler ve gıda reklamlarını izleyen çocuklarda bu gıdalara yönelim etkisi hızlı bir şekilde görülmektedir. Bu çalışmanın amacı 3-4 yaş ve 5 yaş grubu çocukların beslenme durumları ve televizyon izleme sürelerini belirlemek, gıda reklamlarının çocukların beslenme durumuna etkisini incelemek ve bu etkinin çocukların besin alımını nasıl etkilediğini belirlemektir.

**Gereç ve Yöntem:** Çalışma, Edirne Şehir Merkezi'nde bir anaokulunda okuyan 3-4 ve 5 yaşındaki çocukların beslenme durumunu ve televizyon izleme süresini belirlemek için gönüllü olan 215 yetişkin ebeveyn ile gerçekleştirildi. Çocukların sosyo-demografik özellikleri, antropometrik ölçümler, gıda tüketimi sıklığı ve gıda tüketimi kayıtları, beslenme ve televizyon izleme alışkanlıkları değerlendirildi.

**Bulgular:** Çocukların %49,8'inin günde ortalama 2-3 saat televizyon izledikleri ve %36,7'sinin haftada 1-2 kez gıda reklamlarında gördükleri yiyecekleri talep ettikleri saptanmıştır. Televizyonda yer alan gıda reklamlarının çocukların ilgisini çekmesi ile çocukların reklamlarda gördükleri asitli içecekler, meyve suyu, cips, çikolata, gofret, tatlılar, bisküviler ve krakerler gibi yiyecekleri isteme sıklıkları arasında pozitif yönlü ve anlamlı bir

**Address for Correspondence:** Sedef DURAN MD, Trakya University Faculty of Health Sciences, Department of Nutrition and Dietetics, Edirne, Turkey

**Phone:** +90 536 733 75 75 **E-mail:** sedefduran@yahoo.com **ORCID ID:** orcid.org/0000-0003-3279-8099

**Received:** 05.03.2023 **Accepted:** 05.10.2023



ilişki saptanmıştır. Gıda reklamlarına dikkat eden çocuklarda dikkat etmeyenlere göre günlük enerji alımı, besin örüntüsündeki karbonhidrat yüzdesi ve günlük şeker tüketimi daha yüksek bulunmuştur. Televizyon izleme süresi arttıkça çikolata, gofret, soda ve meyve suyu tüketiminin arttığı tespit edildi.

**Sonuç:** Sonuç olarak, televizyon izleme zamanı ve televizyonda gıda reklamları çocukların gıda seçimleri ve dolayısıyla beslenme durumları üzerinde etkili olabilir.

**Anahtar Kelimeler:** Çocuk, beslenme, gıda reklamı

## INTRODUCTION

The effect of watching television on children depends mainly on two factors. These are content and viewing time. The rate of exposure also increases during the viewing period. For example, it is successful in attracting the attention of even children as young as 1-year-old when advertising messages are accompanied by more colorful, entertaining and unique music. It is a fact created in the group that is most open and sensitive to the influence of television. Considering that children start regularly watching television between the ages of 2 and 2.5 years, this is obviously a pretty big problem<sup>1</sup>.

Nutrition is defined as adequate and balanced intake of nutrients containing nutrients necessary for living things and their correct use<sup>2</sup>. The period in which children's physical, mental, emotional and social development accelerates and basic habits are taught to the child, in which their character and personality traits begin to take shape, is the pre-school period, which covers the age range of 0-6 years.<sup>3</sup> Preschool period, in addition to being a time when children grow up rapidly and become more active, it is an important period when children learn about food and determine their food preferences<sup>4</sup>. The foundations of eating habits in later ages are laid in this period. For this reason, preschool children should learn to eat adequate, balanced and healthy nutrition and make it a habit. At this age, the child's family and social environment are very important, as the child begins to imitate those around him. The preschool period is the most appropriate period for the child to focus on nutritious foods and regular physical activities and to acquire a healthy meal order and a healthy life habit<sup>5</sup>.

The most effective environment in the development of children's eating habits is the family environment. Children learn first by imitating family members. The content and environment of meals eaten with the family is a very good example in shaping the child's eating habits<sup>6</sup>.

The goal of children's balanced and healthy nutrition is that the child can develop at the desired level. The foods that make up the diet should be present in certain proportions from the basic food groups. For example, when there is no food variety, a child's health is adversely affected by a diet based on fat and carbohydrates. Excessive consumption of high-calorie foods also causes overnutrition and, as a result, obesity. The child's consumption of high-calorie foods or overeating does

not mean adequate and balanced nutrition. For this reason, it should be present in various and sufficient proportions of food groups in the daily diet of children<sup>7</sup>.

Television is the most widely used and most active mass media and it affects children as well as the whole society<sup>8</sup>. According to the Radio and Television Supreme Council (RTÜK)-2018 data, an average of 3 hours and 34 minutes of television is watched per day in Turkey<sup>9</sup>. Preschoolers are the most sensitive target audience of television. In studies conducted, the average daily television watching time of preschool children varies between 2.5 and 3.5 hours<sup>10</sup>. From a pedagogical point of view, preschool children have many needs and television programs specially prepared for them are one of these needs. According to studies, the nutrition of children is affected by the media and the media can cause health problems related to nutrition<sup>11</sup>. The effect of advertisements is not the same on every child. The child's age, gender, social environment, family environment, education level of the family, the conditions in which the advertisement is delivered, the type of the advertised product and many similar factors change the effect of the advertisement<sup>12</sup>.

Television significantly affects children's eating habits. As the time spent by children in front of the television increases, the consumption of ready-made food also increases. At the same time, as the time spent watching television increases, children lead a sedentary life. As a result, obesity is more common in children who watch television for a long time. Television can also be used by families as a way of feeding especially young children<sup>8</sup>.

Wartella<sup>13</sup> found that television advertisements had a significant impact on the food choices, food purchasing demands and short-term food consumption of children between the ages of 2 and 11 years. In addition, in the same report, it was determined that the media affected the behavior and nutritional routines of 2-5-year-old children towards food and beverages.

Food advertisements with messages for preschool children are widely broadcast on television. Through these messages, it directs children to demand the food products in these advertisements. As a result of these, the healthy eating behaviors of children are replaced by a single type of diet with various additives added, or a similar diet. With the effect of food

advertisements on television, children may start to consume the food they see in the advertisement, although they do not like it before. When television advertisements draw attention to food products that are rich in sugar, poor in protein, and that have added many additives, they lead children to want and consume them<sup>8</sup>.

As television viewing time increased, daily energy expenditure decreased, and besides, nutrition in the form of snacking in front of television increased. Television food advertisements make high-calorie foods more attractive and increase the desire to eat these foods. These behaviors, which develop in parallel with the duration of watching television, are among the important factors that increase the incidence of obesity in the society<sup>14</sup>. In this study, it was aimed to determine the nutritional status and television watching time of 3-5-year-old children studying in a kindergarten in Edirne city center and to examine the effects of food advertisements on television on the nutritional status of children.

It was shown that in children aged 2-5 years who watched a special television program for children, exposure to food advertisements within this program was positively associated with more eating behaviors. According to the study, watching and being influenced by food advertisements, usually in early childhood, leads to eating behaviors that promote weight gain<sup>15</sup>.

It was observed that children sacrifice their main meals and increase their snack food consumption with the effect of food advertisements. The effect of orientation to these foods is seen rapidly in children who watch food advertisements<sup>16</sup>.

Parents and then the child's immediate environment should be adequately informed about the negative effects of television and the media, which have a significant impact on children's eating habits. The effect of the nutrition education given to children in the preschool period continues on the individual in later ages, and this effect can even reach the social level. For this reason, the wrong nutritional behaviors acquired in this period significantly affect the level of social health<sup>11</sup>.

Given the seriousness of this public health problem, it is important to inform the public, especially parents of young children, about this issue and to learn more about the underlying factors. The aim of this study was to determine the nutritional status and television viewing time of children aged 3-4 and 5 years, to examine the effect of food advertisements on the nutritional status of children, and to determine how this affected the nutrient intake of children. Although there are similar studies investigating the nutritional status of preschool children affected by food advertisements, our study is more comprehensive than other studies and is thought to contribute to the literature.

## MATERIALS AND METHODS

This study was approved by the Trakya University Faculty of Medicine Scientific Research Ethics Committee (protocol no: TÜTF-BAEK 2018/387, date: 19.11.2018). This research was conducted between October 2018 and April 2019. It was conducted cross-sectionally and descriptively with 250 people who were their parents and 215 adults who were volunteers, in order to obtain information about the children aged 3, 4-5 years, who were studying at Ayşekadın Kindergarten in the city center of Edirne. The sample size was determined by the full count method, without the need for any calculations, based on the total number of students in the kindergarten where the research would be conducted. The data of the study were obtained by socio-demographic characteristics of children and their families, anthropometric measurements of children, nutritional habits, television watching habits and a questionnaire including children's interest in advertisements, 48-hour food consumption record, food consumption frequency record. The amounts of all foods consumed by the children included in the study for two days were questioned. The data obtained were entered into the BEBIS 6.1 program. The children included in the study were questioned about which foods they consumed and how often in the last month. The participant was given 6 options for consumption frequency. The participant who chose one of these options was asked how much of that food he consumed at one time. The answers to the questions "Do food advertisements on television attract your child's attention and does your child demand from you the foods he sees in food advertisements?" were used to measure interest in the advertisements.

## Statistical Analysis

While evaluating the findings obtained in the study, Statistical Package for the Social Sciences 25 software was used for statistical analysis. While evaluating the study data, in addition to descriptive statistical methods such as numbers, percentages, averages, and standard deviations, the chi-square test was used for differences between the groups of qualitative data, and the Mann-Whitney U tests were used for pairwise comparisons of non-normally distributed variables. The results were evaluated at the 95% confidence interval and the significance level of  $p < 0.05$ .

## RESULTS

It was determined that 54% of the children were girls and 46% were boys. It was determined that the mean body mass index (BMI) value was  $15.86 \pm 2.84$  kg/m<sup>2</sup> in girls and  $16.29 \pm 2.49$  kg/m<sup>2</sup> in boys (Table 1).

It was revealed that 41.9% of children were fed four meals a day. While 38.8% of girls ate three meals, 47.5% of boys ate

four meals. 80.5% of children regularly had breakfast every day. 67.0% of them sometimes skipped their meals. Of those who skipped meals, 40.1% skipped snacks and 37.9% skipped lunch. 54.2% of them cited lack of appetite as the reason for skipping meals. Daily water consumption of 42.8% was determined as 501-1000 mL.

49.3% of children had a television at home and 41.3% had two televisions. 49.8% of them watched television for 2-3 hours a day on average. 48.4% of children whose attention was attracted by television advertisements demanded the foods they saw in food advertisements 1-2 times a week. A statistically significant difference was found between the number of televisions at home and the frequency of children's demand for the foods they saw in food advertisements, and whether television advertisements attracted the child's attention ( $p=0.001$ ) ( $p<0.05$ ).

It was determined that the children who attracted the attention of food advertisements on television consumed packaged products more frequently, and there was a significant difference between them ( $p<0.05$ ). While 50.7% of children never consumed soda, 42.8% consumed acidic beverages 1-2 times a week. A significant difference was found between the frequency of consumption of soda and the way food advertisements on television attracted the attention of the child ( $p=0.001$ ) ( $p<0.05$ ). A statistically significant difference was found between the number of televisions in the house and the ability of food advertisements to attract the child's attention ( $p=0.035$ ). No relationship was found between the number of televisions in the house where the child lived, the frequency of requesting the foods he saw in food advertisements, and the average daily television viewing time and whether food advertisements attracted the child's attention ( $p=0.099$ ).

87.7% of children whose attention was drawn by television advertisements consumed milk, 45.2% coke, 74.2% fruit juice, 7.7% other carbonated beverages. 62.8% of children did not consume coke and 92.6% did not consume other carbonated drinks. 16.7% of children who did not notice television commercials did not consume milk, 83.3% did not consume coke, 45% did not consume fruit juice, and 93.3% did not consume other carbonated drinks. In the statistical analysis, a significant difference was found between the

consumption of coke and fruit juice and the attention of the child by the food advertisements on the television ( $p=0.006$ ) ( $p<0.05$ ). No significant difference was found between the consumption of milk and other carbonated beverages and the attention of the child by the food advertisements on the television ( $p>0.05$ ). 36.7% of children consumed chips, 72.6% consumed chocolate-wafers, 23.3% consumed sweets, 65.1% consumed biscuits-crackers. Of the children whose attention was attracted by television advertisements, 43.9% consumed chips, 80.6% chocolate-wafers, 27.1% candies, 69.7% biscuits-crackers. 76.7% of children did not consume sweets and 63.3% did not consume chips. 81.7% of children who did not notice television advertisements did not consume chips, 48.3% did not consume chocolate wafers, 86.7% candies, 46.7% did not consume biscuits-crackers. In the statistical analysis, a significant difference was found between the consumption of chips, chocolate, wafers, sweets, biscuits and crackers and the attention of the child by the food advertisements on the television ( $p<0.05$ ). There was no significant difference between boys and girls in terms of junk food consumption ( $p=0.0371$ ). It was found that children who were attracted to television advertisements consumed junk food 3-4 times a week and every day significantly more than those who were not ( $p=0.001$ ).

In Table 2, the relationship between children's television food commercials attracting the attention of the child and the average daily energy, sucrose and fiber intake, and the protein, carbohydrate and fat percentages of children's daily diets are compared. Daily energy intake and nutrient patterns are associated with the attention of children in food advertisements on television. The daily energy intake of children who were attracted by food advertisements was found to be higher. While the average daily energy intake of the children who were influenced by the food advertisements on the television (1<sup>st</sup> group) was  $1743.50\pm 215.92$  calories, the daily energy intake of the children who did not notice the food advertisements on the television (2<sup>nd</sup> group) was  $1648.38\pm 195.59$  calories. A statistically significant difference was found between the two groups ( $p=0.001$ ). The daily protein percentages of children who were attracted to food advertisements were found to be lower. There was a significant difference between the groups ( $p=0.002$ ). When the groups were compared in terms

**Table 1. Anthropometric measurement averages of children by gender and 50<sup>th</sup> percentile range according to 3-5 years of age**

Anthropometric measurements	Girl			Boy		
	Mean	Standard deviation	50 <sup>th</sup> percentile	Mean	Standard deviation	50 <sup>th</sup> percentile
Height (cm)	112.58	6.90	99-112.2	114.15	7.08	100-112.9
Body weight (kg)	20.06	3.86	15-19.1	21.21	4.17	15.3-19.4
BMI (kg/m <sup>2</sup> )	15.86	2.84		16.29	2.49	

BMI: Body mass index

**Table 2. The relationship between television food commercials attracting the attention of the child and daily energy and some nutrient intakes**

Daily average	Child's attention to television food commercials				TÜBER reference values	p values
	Attention	No attention	Total			
	n (155) x̄±SD	n (60) x̄±SD	n (215) x̄±SD			
Energy intake (kcal)	1743.50±215.92	1648.38±195.59	1716.96±214.31	1200	<b>0.001*</b>	
Protein percentage (%)	15.89±2.06	16.87±1.92	16.16±2.07	5-20	<b>0.002*</b>	
Fat percentage (%)	37.81±4.05	38.53±4.70	38.01±4.24	20-35	0.231	
Carbohydrate percentage (%)	46.24±4.88	44.48±5.41	45.75±5.08	45-60	<b>0.033*</b>	
Sucrose intake (gr)	38.07±15.51	30.97±12.44	36.09±15.03	<25	<b>0.003*</b>	
Fiber intake (gr)	15.73±3.54	15.63±3.33	15.70±3.48	14	0.623	

SD: Standard deviation, TÜBER: Turkey Nutrition Guide

of fat intake percentage, the difference was not statistically significant (p=0.231). The daily carbohydrate percentages of children who were attracted to food advertisements were found to be higher. There was a significant difference between the groups (p=0.033). The daily sucrose intake of children who were attracted to food advertisements was found to be higher. There was a significant difference between the groups (p=0.003). The average daily fiber intake of the children in the 1<sup>st</sup> group was 15.73±3.54 g, the average daily fiber intake of the children in the 2<sup>nd</sup> group was 15.63±3.33 g. The mean of all children was 15.70±3.48 grams. There was no statistically significant difference between the groups (p=0.623). It was determined that the daily average energy intake, fat percentage, sucrose and fiber intake were above the recommended amounts.

**DISCUSSION**

Children's nutritional status, feeding frequency, skipping meals, and one-way eating habits are effective on their health status<sup>17</sup>. Tuna et al.<sup>18</sup> found in their study that 79.1% of obese children ate at least 3 main meals, while 20.9% ate 2 main meals.

Tokuç et al.<sup>19</sup> reported that 53.4% of the students watched television for 2 hours or more per day. 49.3% of the children in this study had one television at home, and 37.7% had two televisions at home. In the RTÜK-2018 data, it has been determined that an average of 3 hours and 34 minutes of television is watched daily in Turkey<sup>9</sup>. Similar to this and other studies, 49.8% of the children in this study watched television for an average of 2-3 hours a day.

Media is among the factors affecting the food choice of preschool children. Studies have found that food advertisements on television have strong effects on the food choices and food demands of children aged 2-11 years<sup>13</sup>. In another study, it was found that 52.5% of the children sometimes wanted to have the products they saw in the advertisements, 35% wanted the product they saw in the advertisements, and 12.4% did not<sup>20</sup>.

The eating habits of preschool children are influenced by the media, especially television advertisements. In a study, it was found that 33.55% of children asked their parents for the foods they saw in advertisements, while 15.31% did not<sup>21</sup>.

36.7% of the children in this study demanded the foods they saw in food advertisements 1-2 times a week, 32.1% 1-2 times a month, 8.4% every day.

Food advertisements affect children's food choices and demands. Günlü and Derin<sup>20</sup> determined that after watching the advertisements, 48.5% of the students bought chocolate, chips, cake and candy, 58.7% of them bought coke drinks and 19% of them bought fruit juice. It was determined that 11.5% of children consumed sugar-containing coke drinks, 3.6% consumed diet coke drinks and 25.4% consumed candy, confectionery, bars, wafers and chocolate every day according to a study conducted throughout Turkey<sup>22</sup>. It was determined that 45.1% of the children in this study consumed packaged products such as chips-chocolate-biscuits 1-2 times a week, 28.8% consumed 3-4 times a week, 25.2% every day.

It is thought that food advertisements targeting children and socioeconomic status of families affect children's consumption of junk food, and parents and themselves should be conscious about reducing their consumption of junk food.

Eating in the form of snacks during the time spent in front of the television and computer causes weight gain in children. Francis et al.<sup>23</sup> found that television had a significant effect on the increase in BMI of television viewers. In this study, daily energy intake and nutrient patterns were associated with children who were attracted to food advertisements on television. The daily energy intake of children who were attracted to food advertisements was found to be higher. Daily energy intake was found to be above the energy reference value that should be taken daily according to Turkey Nutrition Guide (TÜBER). In a study, the amounts of energy, nutrients and fiber intake of children and the adequacy level of these amounts according

to the amounts recommended in TÜBER were evaluated. It was found that the average energy intake ( $1189.75 \pm 213.82$  kcal) was inadequate, while protein ( $46.87 \pm 8.74$  g) and carbohydrate ( $131.51 \pm 28.97$  g) intakes were adequate<sup>21</sup>.

In studies conducted with children aged 2-5 years in the USA and England, it was determined that approximately one-fourth of the children were overweight or obese, and this situation was associated with the media<sup>24</sup>.

Unlike other studies, no significant relationship was found between media and BMI. In this study, age was found to be associated with attention to food advertisements on television. The age of the children who were attracted by television advertisements was found to be higher. It is thought that the reason why the advertisements attract the attention of children more as they get older is related to the increase in the development of the child's mental and perception skills.

### Study Limitations

The limitations of the study were that it was conducted in a single center, the number of study groups was small, and the survey data were based on parental statements.

### CONCLUSION

According to the results obtained from this study, it was observed that children's television viewing time decreased as the mother's education level increased ( $p < 0.05$ ). It was found that children who were attracted by food advertisements on television consumed more packaged products and unhealthier snacks ( $p < 0.05$ ). As the duration of television viewing increased, children's consumption of some unhealthy foods increased ( $p < 0.05$ ). No relationship was found between the duration of watching television and the attention of children with food advertisements. A positive and significant relationship was found between the frequency of children's demand for the foods they saw in food advertisements and the status of television advertisements attracting the attention of the child. It has been determined that the rate of television advertisements attracting the attention of children increases with the increase in the number of televisions at home. The daily energy intake and sucrose consumption of children who were attracted to food advertisements were found to be higher, and the percentages of fat and carbohydrate in the daily food pattern were found to be higher and protein was found to be lower. A significant correlation was found between energy intake, protein and carbohydrate percentages and food advertisements attracting their attention ( $p < 0.05$ ). Age and weight were found to be associated with the attention of food advertisements on television, and the age and weight

of children who were attracted to television advertisements were found to be higher. There is no difference in junk food consumption according to the gender of the children. We can say that television viewing time and food advertisements can have an impact on children's food choices and thus their nutritional status, and this is important for the healthy development of the child. In terms of preventive health services, it is recommended that this situation be taken into account in the primary care providing health services, and parents should be given education and information about it.

### Ethics

**Ethics Committee Approval:** This study was approved by the Trakya University Faculty of Medicine Scientific Research Ethics Committee (protocol no: TÜTF-BAEK 2018/387, date: 19.11.2018).

**Informed Consent:** Cross-sectional study.

**Peer-review:** Externally peer-reviewed.

### Authorship Contributions

Surgical and Medical Practices: U.B.Ö.Ç., S.D., Concept: U.B.Ö.Ç., S.D., S.C., E.M.Ş., Design: U.B.Ö.Ç., S.D., S.C., E.M.Ş., Data Collection or Processing: U.B.Ö.Ç., S.D., Analysis or Interpretation: U.B.Ö.Ç., S.D., Literature Search: U.B.Ö.Ç., S.D., S.C., Writing: U.B.Ö.Ç., S.D., S.C., E.M.Ş.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

### REFERENCES

1. Meb ve RTÜK. İlköğretim Medya Okuryazarlığı Dersi Öğretim Programı ve Kılavuzu. Ankara, 2006.
2. Aksoy M. Beslenme Biyokimyası (3. ed). Ankara: Hatipoğlu Basım ve Yayın San. Tic. Ltd. Şti., 2011:2-7.
3. Mungan Ay S. İstanbul İlinde 10-13 Yaşındaki Çocuklarda Gelişim ve Bedensel Kontrolün Araştırılması, Marmara Üniversitesi Sağlık Bilimleri Enstitüsü. Yüksek Lisans tezi. 2002; İstanbul.
4. Kwan I, Sekhri A, O'Connell A, Dougherty M. Maternal and Child Nutrition Programme. Nice, 2007. Available from: <https://www.nice.org.uk/guidance/ph11/evidence/review-8-supplementary-review-6-months-5-years-pdf-369897805>
5. Wardlaw G. Contemporary Nutrition Issues and Insights (5th ed). Boston: McGraw Hill Higher Education, 2003.
6. Köksal G, Gökmen H. Çocuk hastalıklarında beslenme tedavisi (1ed). Ankara: Hatipoğlu Basım ve Yayın San. Tic. Ltd. Şti., 2000:124-6.
7. Akyıldız N. Çocuk Beslenmesi.I (1ed). İstanbul: Ya-Pa Yayınları, 2000.
8. Büyükbaykal G. Televizyonun çocuklar üzerindeki etkileri. İstanbul Üniversitesi İletişim Fakültesi Dergisi. 2007:31-44.
9. RTÜK. Televizyon İzleme Eğilimleri Araştırması. Ankara: RTÜK Yayını, 2018:25.

10. Koçak Ö, Göktaş Y. Televizyon ve çizgi film: Okul öncesi çocukların ve ebeveynlerinin izleme alışkanlıkları. 26th International Conference on Educational Sciences, 20-23 Nisan 2017, Antalya, 2017.
11. Koyuncu Şahin M, Esen Çoban A, Güney Karaman N. Early Childhood Teachers' Perspectives About the Effect of Media on Children's Eating Habits and Nutritional Disorders. Elementary Education Online. 2018;17:125-42.
12. Serpemen M. Cumhuriyet ve Çocuk: Çocuklara yönelik reklamlar ve çocuklarda tüketim alışkanlıkları. Ankara: Ankara Üniversitesi Çocuk Kültürü Araştırma ve Uygulama Merkezi Yayınları, 1999.
13. Wartella EA. Medya, beslenme ve çocukluk obezitesi. Bildiriler Kitabı. 2013:243.
14. Göng N. Obezitenin endokrin sonuçları. Katkı Pediatri Dergisi. 2000;21:513-7.
15. Emond JA, Lansigan RK, Ramanujam A, Gilbert-Diamond D. Randomized exposure to food advertisements and eating in the absence of hunger among preschoolers. Pediatrics. 2016;138:23-61.
16. Norman J, Kelly B, McMahon AT, Boyland E, Baur LA, Chapman K, et al. Sustained impact of energy-dense TV and online food advertising on children's dietary intake: a within-subject, randomised, crossover, counter-balanced trial. Int J Behav Nutr Phys Act. 2018;15:37.
17. Şanlıer N, Güler A. İlköğretimin ikinci kademesinde eğitim gören öğrencilere verilen beslenme eğitiminin öğrencilerin beslenme bilgi düzeyi ve alışkanlıklarına etkisi. Bes Diy Derg. 2005;33:31-8.
18. Tuna C, Şıklar Z, Ünsal R, Dallar Y. The Evaluation of Risk Factors in Obese Children. Türkiye Klinikleri J Pediatr. 2003;12:169-75.
19. Tokuç B, Berberoğlu U, Ekuklu G. Reklam ve çocuklar: çocukların gıda markalarını tanıması, beslenme alışkanlıklarını ve gıda tercihlerini etkiliyor mu? TAF Prev Med Bull. 2009;8:459-64.
20. Günlü Z, Derin D. An Investigation Of The Effects Of Television Advertisements On Food Selection Of School Age Children. Journal of Sencuk Communication. 2012;7:62-77.
21. Soylu T. Kırıkkale'de Okul Öncesi Eğitim Kurumlarına Devam Eden Çocukların Şeker ve Şeker İçeren Besin Tüketimleri ile Obezite Durumlarının Belirlenmesi. Doğu Akdeniz Üniversitesi. Yüksek Lisans Tezi. 2016; Gazimağusa, Kuzey Kıbrıs.
22. Türkiye'de okul çağı çocuklarında (6-10 yaş grubu) büyümenin izlenmesi (TOÇBİ) projesi araştırma raporu: TC Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü; 2011.
23. Francis LA, Lee Y, Birch LL. Parental weight status and girls' television viewing, snacking, and body mass indexes. Obes Res. 2003;11:143-51.
24. Sherburne Hawkins S, Law C. A review of risk factors for overweight in preschool children: a policy perspective. Int J Pediatr Obes. 2006;1:195-209.