

# Children's Eating Habits and Obesity While Watching Television

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## Abstract

**Objectives:** The current study aimed to examine the effect of eating habit of children while watching TV on obesity.

**Methods:** The population of this descriptive study consisted of the mothers with children in the age group of three to five years, who referred to five family health centers from June to July 2015. No sampling selection was performed in the study. The study was conducted on 165 mothers, who agreed to participate in the study and their children. The data were collected with the face-to-face interview method and using a form including questions related to the socio-demographic characteristics of the mothers and children as well as the condition of children watching TV and their nutritional status. After measuring the weight and height of the children by a digital scale and a standard assessment tool by researchers, their body mass index (BMI) was calculated. Before collection of the data, the approval of the ethics committee, verbal permission from the parents and a formal written permission from the related institution were obtained. Percentage, mean and Chi-square tests were used to assess the data.

**Results:** According to the obtained results, 33.9% of the children were five years old and 52.7% were male. According to classification of BMI, 9.7% of the children were very slim, 12.7% slim, 58.8% normal, 8.5% over-weight and 10.3% obese. It was determined that 58.2% of the children ate while watching TV and 34.4% of those ate their meals once a day while watching TV.

**Conclusions:** It was found that more than half of the children watched TV while eating. It is suggested that nurses inform the parents about the harms of having their children eat while watching TV as well as obesity.

**Keywords:** Obesity, Children, Television, Eating Habits

## 1. Background

Obesity is a serious and chronic illness with genetic and environmental interactions (1). World health organization (WHO) determined obesity as an important public health issue (2). According to 2013 data of WHO, it was determined that 42 million children, who are younger than five years old, are obese or overweight (3). The WHO regional office for Europe stated that in Europe overweight affects 30% - 80% of the adults; approximately 20% of children and adolescents are overweight, and one third of them are obese (4). In the United States of America, nearly one third of adolescents and two thirds of adults are overweight or obese (5). The prevalence of obesity in Spain is 14.5% and reaches 13.9% among children and adolescents, which is considered as a public health problem (6). In Turkey, prevalence of obesity is 8.5% (boys 10.1%; girls 6.8%) in the age group of zero to five years and 8.2% in the age group of six to eighteen years (boys 9.1%; girls 7.3%) (7). In Poland, overweight and obesity are considered as a serious epidemiological concern (8). In Vietnam, overweight and obesity are the emerging problems especially in the urban environment (9).

In the literature, it is reported that watching TV at early

ages affects childhood obesity (10). Childhood obesity can affect almost all organ systems and cause serious results including hypertension, dyslipidemia, insulin resistance/diabetes, fatty liver disease and psycho-social complications (11).

In Australia it is recommended that duration of watching TV, sitting and using other electronic media should be less than one hour a day for children aged between two to five years (10). American academy of pediatrics suggest that time allocated for media should be daily one to two hours for children at the age of two and older (12). Formation of healthy eating habit in children is very important at pre-school ages (two to six years) (13). Numerous studies indicated that obesity is related to TV watching (10, 14-16).

Nurses have important responsibilities in terms of prevention, treatment and care of disease at all stages of protective, therapeutic and rehabilitative healthcare services in the struggle with obesity (17).

## 2. Objectives

The current study aimed to examine the effect of eating habits of children while watching TV.

### 3. Methods

#### 3.1. Type of Study

The current research was a descriptive study.

#### 3.2. Time and Place of Study

Data of the study were collected from June to July 2015 from five family health centers in Turkey.

#### 3.3. Population and Sample of Study

The population of the study consisted of mothers with children in the age group of three to five years, who referred to five family health centers located in the city from June 2015 to July 2015 due to any reasons. No sampling method was used in the study. The study was conducted on 165 mothers and their children, who volunteered to participate in the study.

#### 3.4. Data Collection Tools

##### 3.4.1. Questionnaire

Data were collected by a researcher-made questionnaire designed by the researchers upon literature review and included questions regarding socio-demographic characteristics of the mothers and the children, habits of children with relation to watching TV and eating (18-20). Weight and height of the children were measured and recorded in the questionnaire by the researchers. Before collection of the data, the mothers were informed about the purpose of the study and their verbal consent was obtained. The questionnaire included 20 questions.

##### 3.4.2. Determination and Evaluation of Body Mass Index

Body weight of the naked children was measured by the researchers using a digital scale. The height was measured while standing by a standard assessment instrument (21).

Body mass index (BMI) was calculated based on the formula of weight (kg)/height (m<sup>2</sup>). Percentile values of BMI of the children were evaluated by national standards, formed by Neyzi et al. (21), used in Turkey, and classified as indicated below. While determining percentile values, age and gender of the children were taken into consideration (22).

#### 3.5. Rating of Percentile Values

< 5 = very weak.

From ≥ 5 to < 15 = weak.

From ≥ 15 to < 85 = normal.

From ≥ 85 to < 95 = overweight.

≥ 95 = obese.

#### 3.6. Evaluation of Data

Data were analyzed by SPSS ver. 17 for Windows. Percentage, mean and Chi-square test were used to assess the data.

#### 3.7. Ethical Principles of the Study

To conduct the study, legal permissions were obtained from the relevant institutions. This study was reviewed and approved by the research ethics committee of the authors' institution (10. 04. 2015). Written informed consent was obtained from parents prior to participation in the study. They were also informed that all the information they provided were kept strictly confidential and that they had the right to withdraw from the study anytime they wished.

### 4. Results

According to the obtained results, 33.9% of the children included in the study were five years old; 52.7% were boy, 83.6% of their mothers were housewives, 40% of the mothers were primary school graduates and literate, 38.8% of the fathers were self-employed and 37% were secondary school and high school graduates (Table 1).

According to BMI classification, 9.7% of the children were very weak, 12.7% weak, 58.8% normal, 8.5% overweight and 10.3% were obese. Mean BMI of the children was  $15.75 \pm 2.21$  (Table 2); 83% of the children ate three main meals a day and 38.8% ate three snacks a day (Table 3); 95.8% of the children watched TV and 44.9% of them watched TV for three hours or longer; 58.2% of the children ate while watching TV and 34.4% of these children ate while watching TV once a day; families of 52.7% of the children did not have the habit of eating while watching TV (Table 4); 50.0% of overweight children consumed mostly meat and 14.3% consumed mostly milk and milk products; 23.5% of children with obesity consumed mostly meat and 5.9% consumed mostly fast food. Difference between BMI levels of the children in terms of eating habit was statistically significant ( $P < 0.05$ ).

While 28.6% of children with overweight consumed fast food once or twice a week, 28.6% consumed fast food once or twice a month. It was found that 41.1% of children with obesity consumed fast food once or twice a month. Difference between BMI levels of the children in terms of frequency of eating fast food was statistically significant ( $P < 0.05$ ) (Table 5).

### 5. Discussion

The current study found that, according to BMI classification, 8.5% of the children in the age group of three to

**Table 1.** Distribution of Descriptive Characteristics of Children and Parents (n = 165)

Descriptive Characteristics	No.	%
<b>Children's age, y</b>		
3	55	33.3
4	54	32.8
5	56	33.9
<b>Gender</b>		
Girl	78	47.3
Boy	87	52.7
<b>Mother's occupation</b>		
Housewife	138	83.6
Officer	21	12.7
Self-Employed	6	3.7
<b>Father's occupation</b>		
Worker	45	27.3
Officer	56	33.9
Self-employed	64	38.8
<b>Mother's education</b>		
Illiterate	18	10.9
Primary school	66	40.0
Secondary/High school	52	31.5
University graduated	29	17.6
<b>Father's education</b>		
Illiterate	6	3.7
Primary school	41	24.8
Secondary/High school	61	37.0
University graduated	57	34.5

**Table 2.** BMI Distribution of the Children (n = 165)

BMI	No.	%
Very weak	16	9.7
Weak	21	12.7
Normal	97	58.8
Overweight	14	8.5
Obese	17	10.3
BMI (X ± SD)	15.75 ± 2.21	

Abbreviation: BMI, body mass index.

five years were overweight and 10.3% were obese (Table 2). In the study conducted by Ford et al., (13) 12% of children, aged two to five years old, were obese. According to a study conducted on children aged four to six years in Monastir, overweight and obesity prevalence was 9.1% and 11.6%, (23) respectively. Results of the study were in line with the literature.

The current study found that 83% of the children had three main meals a day and 38.8% had three snacks a day. A previous study reported that 88.7% of children consumed three meals a day and 74.9% consumed snacks (24), and in another study it was determined that 47% of children consumed three meals a day (25). Results of the study sug-

gested that the children did not have balanced diet habits.

The current study found that 95.8% of the children in the age group of three to five years watched TV and 44.9% of these children watched TV for three hours or more a day (Table 4). A study conducted in Turkey reported that the mean age for watching TV was  $2.7 \pm 1.6$  years; 62% of preschool and primary school children watched TV for two or more hours a day and 8.3% watched TV for more than four hours (26). According to a study conducted in Greece, overall mean of duration of watching TV among children aged one to five years was 1.32 hour/day (27). According to a study conducted in New York among children aged two to five years, children watched TV for an average of 160 min-

**Table 3.** Number of Snacks and Main Meals of Children (n =165)

	No.	%
<b>Number of main meals, d</b>		
1	1	0.7
2	23	13.9
3	137	83.0
4	4	2.4
<b>Number of snacks, d</b>		
1	22	13.3
2	57	34.5
3	64	38.8
4 and over	22	13.4

**Table 4.** Properties of Children's TV Watching (n =165)

	No.	%
<b>Status of TV watching</b>		
Yes	158	95.8
No	7	4.2
<b>Duration of TV watching, d<sup>a</sup></b>		
1 hour	54	34.2
2 hours	33	20.9
3 hours and over	71	44.9
<b>Status of eating while watching TV</b>		
Yes	96	58.2
No	69	41.8
<b>Frequency of eating while watching TV<sup>b</sup></b>		
Once a day	33	34.4
Twice a day or more	19	19.8
Once or twice a week	14	14.6
Always	30	31.2
<b>Family's habit of eating while watching TV</b>		
Yes	78	47.3
No	87	52.7

<sup>a</sup>n = 158.<sup>b</sup>n = 96.

utes a day (28). According to this result, it could be asserted a too long duration of TV watching of preschool children.

The study determined that more than half of the children (58.2%) ate while watching TV and 34.4% of these children ate once a day while watching TV and 31.2% always ate while watching TV (Table 4). According to a study conducted on children aged two to five years, 57.3% of children

ate in front of TV and 31.3% ate while wandering on foot (25). In another study, 34.7% of children ate in front of TV (24). In a study conducted in Iran, meal frequency in lower socio-economic regions (Southeast and North-Northeast) was significantly higher than in two other regions (West and Central) in 10 -13 and 10 -18 years old groups (29). Watching TV while eating contributes to energy intake (30). Accord-

**Table 5.** Comparison of BMI of the Children Based on Eating Habits<sup>a</sup>

BMI	Very Weak		Weak		Normal		Overweight		Obese		X <sup>2</sup>	P
	No.	%	No.	%	No.	%	No.	%	No.	%		
<b>Eating habits</b>												
Vegetables/fruits	3	18.7	8	38.1	37	38.1	2	14.3	3	17.7		
Meat	4	25.0	3	14.3	19	19.6	7	50.0	4	23.5		
Fast food	4	25.0	2	9.5	3	3.1	1	7.1	1	5.9	27.9	0.03
Milk/milk products	0	0	4	19.0	9	9.3	2	14.3	4	23.5		
Grains	5	31.2	4	19.0	29	29.9	2	14.3	5	29.4		
<b>Frequency of eating fast-food</b>												
Never	4	25.0	13	61.9	51	52.6	5	35.7	7	41.1		
Once a day	2	12.5	1	4.8	7	7.2	0	0	1	5.9		
Twice a day or more	4	25.0	0	0	1	1.0	1	7.1	1	5.9		
Once or twice a week	2	12.5	2	9.5	18	18.5	4	28.6	1	5.9	39.8	0.00
Five to six times a week	1	6.2	2	9.5	1	1.05	0	0	0	0		
Once or twice a month	3	18.7	3	14.3	19	19.6	4	28.6	7	41.1		

Abbreviation: BMI, body mass index.  
<sup>a</sup>The percentage of the column is taken.

ing to this result, it can be thought that due to the desire of children to eat the foods they see on TV programs, possibility of unhealthy diet may increase and it may cause obesity.

The current study found that 50.0% of children with overweight consumed mostly meat and 14.3% consumed mostly milk and milk products; 23.5% of children with obesity ate mostly meat and 5.9% mostly ate fast food. Difference between the BMI levels of children based on eating habits was statistically significant (Table 5). According to the study by Geremia et al. (31), vegetables and fruits were consumed less than four times per week in 49% and 36.8%, while soft drinks, fast food and sweets were consumed more than four times a week by 71%, 70.3% and 42.7%, respectively. According to the study by Joseph et al. (32), out of 300 participants, 13.7% were overweight and 2.7% were obese, 97.3% were fast food users of which 14.4% consumed it every day. According to literature, the increase in consumption of sugar-sweetened beverages and fast foods is among the risk factors for pediatric obesity (33).

The study found that 28.6% of children with overweight consumed fast food once or twice a week and 28.6% consumed fast food once or twice a month; 41.1% of children with obesity consumed fast food once or twice a month. The difference between BMI of children in terms of frequency of eating fast food was statistically significant (Table 5). A study conducted in Saudi Arabia among preschool children (aged one to five years) reported that the rate of unhealthy foods consumption was respectively 26%, 25%, and 24% for pizza, hamburger, and beverages (34). A study in Canada found that children with obesity consumed fast food and fruit/vegetables more frequently while watching TV when compared to the children who

were overweight or at normal weight (35). In a study conducted in the Southern India, a correlation was found between increasing frequency of fast food consumption per week and overweight or obesity of children (32). Results of the current study were in accordance with the literature.

It was found that more than half of the children ate while watching TV. Eating habits and frequency of eating fast food affects BMI. Regarding these results, it can be recommended that to prevent obesity, attractiveness of commercials about fast foods should be reduced, and parents be informed by nurses about harms of feeding children while watching TV.

### 5.1. Limitation

Conducting the study in family health centers in only one city was the limitation of this study.

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