



# Factors Affecting Attitudes towards Children with Obesity in Adolescents

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## ABSTRACT

**Objective:** This study aimed to determine the factors affecting attitude towards children with obesity in adolescents.

**Methods:** The study used a descriptive, correlational and cross-sectional design. The sample of the study consisted of a total of 392 adolescents enrolled in three different high schools, which are located in the western part of Turkey and were selected by the simple random sampling method. The data were collected using a socio-demographic data collection form, the "Obesity awareness scale for children" and the "Attitudes towards children with obesity scale". Percentage calculations, mean values and regression analyses were used to evaluate the data.

**Results:** The total score of the attitudes towards children with obesity scale was found to be  $63.71 \pm 11.97$ . Being female explained 9.6% of the rejection attitude towards children with obesity. Being female and the status of BMI explained 8.2% of the acceptance attitude towards children with obesity. Body satisfaction and being female explained 11.8% of the attitude towards children with obesity.

**Conclusion:** In adolescents, being female, body dissatisfaction and increasing BMI levels were found to negatively affect attitudes towards children with obesity. In addition, the obesity awareness level was determined to not affect attitudes towards children with obesity significantly.

**Keywords:** Adolescent; Obesity; Awareness; BMI

## INTRODUCTION

Obesity is caused by more calorie intake than the body needs and storage of these calories as fat when they are not consumed. The balance between calorie intake and calorie consumption is disrupted by some factors such as increased consumption of fast food, processed food and junk food as well as dwindling areas that children can play in confidence;

increasing number of buildings; development in technology; increased screen time due to excessive engagement with computer, smart phone and television; and decreased physical activity. All of these cause of the children end up with obesity [1]. In the last thirty years, the incidence of obesity has more than doubled. For this reason, obesity has been defined by the World Health Organization (WHO) as a "global epidemic".

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Classified as a multi-factorial chronic disease, obesity does not only affect adults but also children and it causes many problems in physiological, psychological, social and economic aspects.

Awareness of the factors causing obesity, awareness of the problems caused by obesity and awareness of ways to maintain the normal weight is considered as obesity awareness. Increased awareness of obesity helps determine factors that cause obesity and spend efforts to eliminate these factors. At the same time, since individuals with high obesity awareness know the problems caused by obesity well, they can develop more effective behaviors to avoid or cope with these problems. However, eating awareness reduces cravings for food. And helps to maintain weight control. Therefore, the view that fight against obesity can best be achieved by raising eating awareness instead of turning to traditional calorie restriction has become dominant [2].

The adolescence period, when physical growth, sexual development and psychosocial maturation occur, is thought to be the most complex term of life when the incidence of obesity may increase. In this period, friends, social environment and the opposite sex have a very important place in the life of the adolescent. Although adolescents considerably care about their appearance and being favored by others in their environment, these factors appear to be a necessary condition for adolescents to successfully complete this period. Studies have shown that due to obesity, obese adolescents face peer bullying, low self-esteem, loneliness, depression and stigmatization such as lazy or useless. In the literature, negative attitudes and behaviors towards obese children are reported to cause psychosocial problems. However, there are no studies laying out exactly what the factors affecting these behaviors are and how they affect these behaviors [3].

This study was carried out to determine the factors affecting attitudes towards children with obesity in adolescents.

## MATERIALS AND METHODS

### Study Design and Population

This study was conducted in descriptive, correlational and cross-sectional type to determine the factors affecting attitudes towards children with obesity in adolescents. The study was carried out between February-April 2019 on students enrolled in three different high schools which are located in the western part of Turkey and were selected with the simple random sampling method. Based on the regression analysis conducted. The necessary sample size was calculated as 151 high school students by considering type I error as 0.05 and type II error as 0.20 (80% power). A total of 392 students who accepted to participate in the study and responded to the questionnaire completely were included in the sample in order to clearly lay out the factors affecting the attitudes towards children with obesity in adolescents [4].

### Data Collection Tools

**Socio-demographic data collect on form:** Filled out by the participants, this form consists of 12 items questioning age and economic status of the parent, age, gender, body weight and height of the child and how the child perceives his/her body weight and height.

**Obesity awareness scale:** This scale was developed to determine thoughts on obesity awareness, nutritional habits and physical activity and the effect of obesity education on individuals. Turkish adaptation of the scale to middle school children was conducted. The original form consists of 23 questions and three sub-dimensions, whereas there are 20 questions and three sub-dimensions in the Turkish form. These sub-dimensions are obesity awareness, nutrition and physical activity. A total of eight items represent obesity awareness (items 1, 3, 4, 6, 7, 9, 10 and 19), seven items represent nutrition (items 2, 5, 8, 11, 12, 14 and 16) and five items represent physical activity (items 13, 15, 17, 18 and 20). The scale has a 4-point Likert type structure from positive to negative. The scores that can be obtained from the scale range from 20 to 80. The higher the scores are, the higher the awareness is. The internal consistency coefficient of the scale was found to be  $\alpha=0.80$ . It is a valid and reliable measurement tool to measure children's obesity awareness [5].

### Attitudes towards Obese Children Scale

Developed by Balci Celik, et al. the scale helps to determine the attitudes of children towards their peers with obesity. It consists of 16 questions and two sub-dimensions. The items for obese peer rejection sub-dimension are 1, 2, 3, 4, 5, 6, 7, 8, and 9 (these items are scored inversely). The items representing peer with obesity acceptance sub-dimension are 10, 11, 12, 13, 14, 15 and 16. It is designed in 6-point Likert type (0=strongly disagree, 5=strongly agree). The possible scores that can be obtained from the scale vary by 0 and 80. As the total score obtained from the scale increases, the positive attitudes towards children with obesity increase as well. The internal consistency coefficient of the scale and the test-retest reliability correlation coefficient were found to be  $\alpha=0.76$  and 0.78, respectively ( $p<0.001$ ). The split-half reliability coefficient was 0.82 for the first half and 0.76 for the second half. These values indicate that this is a valid and reliable scale [6].

### Data Analysis

Numbers, percentages and mean scores were used for the evaluation of demographic data, multiple regression analysis was used to determine the level at which the independent variables predict the status of attitudes towards obese children. VIF and tolerance values were utilized to decide which independent variable should be included in the regression analysis. Variables with a VIF value of less than 10 and a tolerance value of greater than 0.2 were included in the regression analysis. The significance level was accepted as 0.05 [7].

## RESULTS

There are 392 students in this study. The mean age of the students was  $15.71 \pm 1.05$  and 55% were female. While the rate of with normal weight adolescents were 65%, the rate of with overweight and with obesity were 17%. The participants of 65% were thought that their weight was normal, 18% thought they were fat, 56% considered their height as normal and 20% thought they were tall. While 50% of adolescents were satisfied with their physical appearance, 20% were dissatisfied [8].

The mean ages of the mothers and fathers were  $42.36 \pm 5.47$  and  $46.69 \pm 5.53$ , respectively. The rate of 30% of mothers and 35% of fathers were university graduates.

The total score obtained from 'the attitudes towards children with obesity scale' was  $63.71 \pm 11.97$ . Based on the literature, attitudes towards the children with obesity were observed to be affected by factors such as body satisfaction, economic status, age, gender, BMI and obesity awareness; therefore regression models were created accordingly. The first model provided the level at which body satisfaction, economic status, age, female gender, BMI, sub-dimensions of obesity awareness scale and nutrition and physical activity sub-dimensions predicted peer with obesity rejection. These eight factors were found to affect peer with obesity rejection by 9.6%. Among these variables, the only factor that was found to significantly affect attitudes towards the children with obesity was gender ( $\beta=-0.297$ ) ( $p<0.05$ ) (Table 1) [9].

**Table 1:** The level at which demographic characteristics of adolescents and their awareness of obesity predicted peer with obesity rejection.

Model					
Model 1	B	SH	Beta	t	p
Constant	46.591	6.369		7.315	0.000
Body satisfaction	-0.709	0.438	-0.083	-1.618	0.106
Economic status	-0.293	0.534	-0.027	-0.548	0.584
Age	-0.642	0.353	-0.092	-1.818	0.070
Gender (Girl)	-4.434	0.800	-0.297	-5.540	0.000
BMI	0.109	0.103	0.055	1.059	0.290
Sub-dimensions of obesity awareness scale	-0.174	0.129	-0.081	-1.348	0.178
Nutrition sub-dimension	0.052	0.153	0.023	0.339	0.735
Physical activity sub-dimension	0.242	0.185	0.084	1.308	0.192
R			0.310		
R <sup>2</sup>			0.096		
F			4.908		
P			0.000		

The second model gave the level at which body satisfaction, economic status, age, female gender, BMI, sub-dimensions of obesity awareness scale and nutrition and physical activity sub-dimensions predicted peer with obesity acceptance. These eight factors were found to affect peer with obesity acceptance by 8.2%.

Among these variables, the factors that were found to statistically significantly affect attitudes towards the children with obesity were Body Mass Index (BMI)( $\beta=-0.093$ ) and gender ( $\beta=-0.195$ ) ( $p<0.05$ ) (Table 2) [10].

**Table 2:** The level at which demographic characteristics of adolescents and their awareness of obesity predicted peer with obesity acceptance.

Model					
Model 2	B	SH	Beta	t	p
Constant	31.715	6.694		4.738	0.000
Body satisfaction	-0.825	0.461	-0.093	-1.789	0.074
Economic status	-1.010	0.561	-0.90	-1.800	0.073
Age	0.221	0.372	0.030	0.595	0.552
Gender (Girl)	-3.034	0.841	0.195	-3.607	0.000
BMI	-0.273	0.109	-0.130	-2.509	0.013
Sub-dimensions of obesity awareness scale	-0.69	0.136	-0.031	-0.507	0.612
Nutrition sub-dimension	0.301	0.160	0.125	1.874	0.062
Physical activity sub-dimension	-0.127	0.195	-0.042	-0.654	0.514
R			0.287		
R <sup>2</sup>			0.082		
F			4.135		
p			0.000		

The third model yielded the level at which body satisfaction, economic status, age, female gender, BMI, sub-dimensions of obesity awareness scale and nutrition and physical activity sub-dimensions predicted attitudes towards the children with obesity. These eight factors were determined to affect attitudes towards the children with obesity by 11.8%.

Among these variables, the factors which were determined to statistically significantly affect attitudes towards the children with obesity were body satisfaction ( $\beta=-0.112$ ) and gender ( $\beta=-0.310$ ) ( $p<0.05$ ) (Table 3) [11].

**Table 3:** The level at which demographic characteristics of adolescents and their awareness of obesity predicted attitudes towards the children with obesity.

Model					
Model 3	B	SH	Beta	t	p
Constant	78.281	10.169		7.698	0.000
Body satisfaction	-1.552	0.703	-0.112	-2.208	0.028
Economic status	-1.299	0.853	-0.075	-1.523	0.129
Age	-0.410	0.565	-0.036	-0.726	0.469
Gender (Girl)	-7.476	1.279	-0.310	-5.844	0.000
BMI	-0.163	0.165	-0.050	-0.989	0.323
Sub-dimensions of obesity awareness scale	-0.246	0.207	-0.071	-1.190	0.235
Nutrition sub-dimension	0.352	0.244	0.095	1.444	0.150
Physical activity sub-dimension	0.113	0.296	0.024	0.382	0.703

R	0.344
R <sup>2</sup>	0.118
F	6.159
p	0.000

## DISCUSSION

Negative attitudes towards children with obesity cause psycho-social problems in children with obesity. This study aimed to determine the factors affecting the attitudes of adolescents towards children with obesity.

The adolescence period is the most complicated period of childhood. In this period, the social environment and friends come to the fore. For this reason, acceptance by the social environment and friends becomes more important for adolescents. In this study, the percentage of overweight and obesity and dissatisfaction with physical appearance were 17% and 20%, respectively. Children in the adolescent period had higher attitudes of developing negative body perception. On the other hand, determined that negative body perception increased as BMI increased. In the study of body satisfaction was found to be lower in female adolescents than male adolescents. A higher percentage of dissatisfaction with body image than obesity and overweight was thought to stem from increased desire of adolescents for being liked and getting acceptance [12].

In this study, the percentage of dissatisfaction with body image was determined to be 20%. In a study in Brazil, children who were teased by their family and friends because of their weight were found to develop unhealthy weight control behaviors and to have lower body satisfaction. According to the study of the percentage of body shape dissatisfaction was 63% and it was 70% in France in a study conducted the higher rates obtained from studies conducted in France and Brazil compared to the results obtained in Turkey were thought to stem from the close relationship of the adolescents with their grandparents in Turkey and the attitudes of the elderly in Turkey favoring overweight as a healthy situation and showing more likes towards fat children [13].

Multiple correlation analysis was used to evaluate the factors affecting the attitudes towards children with obesity. As a result of the multiple correlation analysis, body satisfaction, economic status, age, female gender, BMI, sub-dimensions of obesity awareness scale and nutrition and physical activity sub-dimensions were found to affect attitudes towards children with obesity. Regression models were formed by considering these factors. In the first model, female gender was determined to significantly affect the rejection attitude towards the children with obesity. In a study conducted in China, adolescents with obesity were reported to be excluded by their peers and be more exposed to peer bullying. The study of reported that adolescents with obesity were not accepted by their peers and that they were teased. Determined more rejection attitudes in males. Found that

normal and adolescents with obesity exhibited fewer rejection behaviors and were exposed to fewer rejection behaviors than adolescents with obesity, whereas male adolescents with obesity exhibited more bullying behavior. We think that this different result between this study and other studies is due to the fact that female adolescents give more importance to the external appearance and they try to be more by adopting the weakness situation and they want to find a friend suitable for this orientation.

In the second model, BMI and female gender were determined to affect children with obesity acceptance attitude negatively and significantly. The study of Meier and Gray, found that in female adolescents, social media use increased body dissatisfaction, having a thin body facilitated the perception of having a more ideal image and increased desire to be thinner and that female adolescents compared their physical appearance with that of the social media users. Bacchini, et al. reported that bullying behaviors of male adolescents towards the children with obesity increased as their BMI increased. On the other hand, this study found that positive attitudes towards the children with obesity decreased as BMI in female adolescents increased. The difference between this study and other studies is thought to stem from the fact that the beauty perception of girl adolescents favored being thin and that the use of social media increased the value given to appearance or beauty. Besides, we think that the increase in BMI augments psychosocial problems, the adolescents who have high BMI are unable to accept themselves so try to lose weight and that efforts to cope with these problems cause a decrease in positive attitudes towards the children with obesity.

In the third model, body satisfaction and female gender were found to affect attitudes towards individuals with obesity negatively and significantly. Kelly, et al. found that children with obesity had lower body satisfaction, more psychosocial problems and more problems in peer relationships. Bacchini, et al. found that undesirable behaviors towards the children with obesity increased as BMI increased and that boys had more bullying behaviors. Meier and Gray, determined that body dissatisfaction was higher in girls. This study found that positive attitudes towards children with obesity were high and that positive attitudes towards children with obesity decreased as body satisfaction decreased in female adolescents. Higher exclusion attitudes towards children with obesity in female adolescents; it is thought that both girls and boys could not be tolerant of being overweight or obesity. For that reason, girls with overweight or obesity they can feel under psychosocial pressure themselves. Then their social

relations can deteriorate. They can give more importance to appearance and they can associate beauty with weakness.

## CONCLUSION

This study found that female gender and increase in body dissatisfaction and BMI levels in adolescents affected the positive attitudes towards children with obesity negatively. On the other hand, the level of obesity awareness did not significantly affect attitudes towards children with obesity. In light of these findings, implementing initiatives that will develop body perception in adolescents positively and change the perception that beauty is associated with being thin will be useful. In addition, experimental studies with large samples are recommended.

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## ETHICS

Necessary approvals were obtained from the Provincial Directorate of National Education for the implementation of the study at three high schools and the Non-Invasive Research Ethics Committee of the affiliated institution (4512-GOA: 2019/06-35). Written and oral consent was obtained from the students and their parents.

## CONFLICT OF INTEREST

The authors declare no conflict of interest in this study.

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## COMPETING INTERESTS

The authors declare that they have no competing interests.

## AUTHORS' CONTRIBUTIONS

SSA and MB conceptualized and designed the study, acquired, analyzed and interpreted the data and drafted the manuscript. MB and SSA designed the study and revised the manuscript. All authors read and approved the final manuscript.

## REFERENCES

- Gebrie A, Alebel A, Zegeye A, Tesfaye B, Ferede A (2018) Prevalence and associated factors of overweight/obesity among children and adolescents in Ethiopia: A systematic review and meta-analysis. *BMC Obes.* 5:1-2.
- Ghobadi S, Hassanzadeh-Rostami Z, Salehi-Marzijarani M, Bellissimo N, Brett NR, et al. (2018) Association of eating while television viewing and overweight/obesity among children and adolescents: A systematic review and meta-analysis of observational studies. *Obes Rev Off J Int Assoc Study Obes.* 19(3):313-320.
- Fahlman MM, Dake JA, McCaughy N, Martin J (2008) A pilot study to examine the effects of a nutrition intervention on nutrition knowledge, behaviors and efficacy expectations in middle school children. *J Sch Health.* 78(4):216-222.
- Lee DC, Sui X, Blair SN (2009) Does physical activity ameliorate the health hazards of obesity? *Br J Sports Med.* 43(1):49-51.
- Alberts HJ, Thewissen R, Raes L (2012) Dealing with problematic eating behaviour. The effects of a mindfulness-based intervention on eating behaviour, food cravings, dichotomous thinking and body image concern. *Appetite.* 58(3):847-851.
- Beshara M, Hutchinson AD, Wilson C (2013) Does mindfulness matter? Everyday mindfulness, mindful eating and self-reported serving size of energy dense foods among a sample of South Australian adults. *Appetite.* 67:25-29.
- Forman EM, Butryn ML, Hoffman KL, Herbert JD (2009) An open trial of an acceptance-based behavioral intervention for weight loss. *Cogn Behav Pract.* 16(2): 223-235.
- Favini A, Gerbino M, Eisenberg N, Lunetti C, Thartori E (2018) Personality profiles and adolescents' maladjustment: A longitudinal study. *Pers Individ Dif Title.* 129:119-125.
- Criss MM, Houlberg BJ, Cui L, Bosler CD, Morris AS, et al. (2016) Direct and indirect links between peer factors and adolescent adjustment difficulties. *J Appl Dev Psychol.* 43:83-90.
- Nabors L, Odar Stough C, Garr K, Merianos A (2019) Predictors of victimization among youth who are overweight in a national sample. *Pediatr Obes.* 14(7): 12516.
- Lee B, Jeong S, Roh M (2018) Association between body mass index and health outcomes among adolescents: The mediating role of traditional and cyber bullying victimization. *BMC Public Health.* 18(1):1-2.
- Qualter P, Hurley R, Eccles A, Abbott J, Boivin M, et al. (2018) Reciprocal prospective relationships between loneliness and weight status in late childhood and early adolescence. *J Youth Adolesc.* 47(7):1385-1397.
- Colpan M, Eray S, Eren E, Vural AP (2018) Perceived expressed emotion, emotional and behavioral problems and self-esteem in obese adolescents: A case-control study. *J Clin Res Pediatr Endocrinol.* 10(4):357.