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The Association Between Social Appearance Anxiety and Eating Attitudes Among Vocational High School Students

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Abstract

High school students experience many growth and developmental changes. These changes make adolescents vulnerable to body image, appearance issues. Negative body image perception can lead to psychosocial problems such as social appearance anxiety and eating disorders in adolescents. Our aim of this study is to assess the relationship between social appearance anxiety and eating attitude as a descriptive study design. Study was held in two vocational high schools in Ankara between May and June 2018 (n=685). The research data were collected by sociodemographic and diet information form, social appearance anxiety scale (SAAS) and eating attitude test (EAT-26). Researchers used independent-samples t-test, one-way analysis of variance and correlation analysis for the data analyses. 60% of the students are male, and 35.8% of students have an abnormal body mass index. The frequency of normal eating attitudes was found as 71.8% while the frequency of abnormal eating attitudes was found as 28.2%. A weak positive correlation is between the SAAS and the EAT-26 scores ($r = .129$). Although, a weak negative correlation was between the school year and the EAT-26 score ($r = -.076$). The SAAS mean score of the students, who stated that they used medicines, was significantly higher than the others. Abnormal eating attitude is related to social appearance anxiety. Eating attitudes are related to social appearance anxiety among vocational school students. Social appearance anxiety impacts abnormal eating attitudes. Psychosocial support to reduce social appearance anxiety might improve the physical and mental health of vocational high school adolescents.

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1. Introduction

Physical appearance and social appearance may cause individuals to experience emotional, cognitive and behavioural concerns regarding their appearance and nutrition (Abdo et al., 2023). Social appearance anxiety refers to the fears that one will be negatively evaluated because of one's appearance. This appearance could include body shape, facial features, complexion, hair and skin colours (Hart et al., 2008; Ayala, 2020). Social appearance anxiety, focusing on their own physical appearance, expresses the people concerns that others may experience regarding their assessment. Because, other people's ideas play a role in determining the level of this anxiety, social appearance anxiety, eating attitudes are similar to social anxiety disorder (Verm & Kaushik, 2017; Casagrande et al., 2019; Dun et al., 2019).

Eating attitudes and eating heterogeneity is related to improving the quality of life (Baguley et al., 2019). A study stated that there is a relationship between emotion and excess food intake. Individuals' feelings about their bodies cause them to display negative eating attitudes (Casagrande et al., 2019). Also, the improvement strategies could be beneficial to perception and emotion underlying negative eating behaviour. Eating behaviours are signed to eating disorders and lots of serious mental health problem (Alcaraz-Ibáñez et al., 2020). Negative appearance perception could vary according to high or low body mass index. Eating disorders such as anorexia nervosa, bulimia and binge are thought to be associated with social appearance anxiety (Baguley et al., 2019).

A study's results supported the expected positive relationship between physical appearance comparisons and social physique anxiety and disordered eating (Alcaraz-Ibáñez et al., 2020). According to research, appearance anxiety and fear are extremely characteristic of eating disorders among students whose mean age is 20 (Levinson et al., 2019).

The importance of physical appearance in someone's self-esteem regardless of age group, geographic area or personal emotional circumstances (Sánchez-Cabrero et al., 2020). Adolescence is the life period, most often related to the onset of eating disorders due to adolescents' excessive fear of negative appearance (Christian et al., 2019). Since adolescents have high social anxiety, trying to make a good impression on other people may cause anxiety (Wang et al., 2018). In the studies conducted, it is stated that due to the characteristics of this period, adolescents mostly experience eating behaviour disorders. Eating disorders develop among adolescents generally high school period. Body perception, which has an important place in the formation of social appearance anxiety, occurs in adolescence, which corresponds to high school period. According to research, social appearance anxiety partially mediated the association between body esteem and eating-disorder risk among high-school students (Li, 2019).

Vocational or technical schools prepare the students' technical and occupational skills developing as well as academic. Vocational or technical skills are required to complete the tasks for a specific job.

According to research, gender is not found to moderate either the mediated or moderated relationships among adolescents underlying both physical appearance comparisons and social physique anxiety (Alcaraz-Ibáñez et al., 2020). Students of vocational school might be a family member of disadvantaged groups in the population as economic or educational status (Sánchez-Cabrero, 2020; Houtepen et al., 2020). In a study conducted by Wang (2018), to examine the frequency of obesity and dietary habits, it is stated that vocational high school students are in the risk group regarding dietary habits. In the literature, there is no study investigating the relationship between social appearance anxiety and eating behaviours that may occur in vocational schools, and this age group. In addition, there are very few studies in the literature, especially for vocational high school students. They are more vulnerable than their peers and preferred by children from socio-economically disadvantaged families. Therefore, they should receive more developmental interventions than their peers. This study can serve as a guide for these interventions.

The purpose of this study is to examine the relationship between social appearance anxiety and eating attitudes among vocational high school students.

Research questions:

- How is the social appearance anxiety of vocational high school students?
- How is the eating attitude of vocational high school students?

- What is the association between social appearance anxiety and eating behaviours among Vocational High School Students?

2. Material and Methods

2.1. Study design

This research was planned as a descriptive study type.

2.2. Study setting

This research was held in two vocational high schools in Ankara between May and June 2018. This study was conducted in the classroom environment, at the hours deemed appropriate by the school administrators, in a way that does not hinder education. There are suitable physical environments such as libraries to make the attempts of students to take anthropometric measurements comfortably.

2.3. Study population

According to the school's records, there are 698 students in the First Vocational Technical Anatolian High School and 1463 in the Second Vocational Technical Anatolian High School. Total 2161 student constituted the universe of the research. There are also students who start high school late or repeat a grade, so the upper age limit is as high as 23. The sample of the research comprised 685 students who were approved to participate in the study by their parents, and who agreed to participate in the study involved. These also cover the inclusion criteria, in summary.

- being a vocational high school student
- to have the permission of his family
- volunteering

Power analysis was performed with the G*Power 3.1.9.7 program to determine the minimum number of students who could participate in the study. t tests: Sample calculation was made according to the correlation test.

Effect size $p = 0.3$, α err prob=0.05, power=0.95, the minimum number of students to be sampled was determined as 111.

2.4. Study measures

The research data were collected with the sociodemographic and diet information form, social appearance anxiety scale (SAAS) and eating attitude test (EAT-26). Sociodemographic and diet information form consists of eight questions and anthropometric measurement (height, weight). The researchers developed the sociodemographic characteristics questions (Gerrard et al., 2020; Tayfur & Evrensel, 2020; Ebrahim et al., 2019).

Social Appearance Anxiety Scale is developed by Hart et al (2008), to measure the emotional, cognitive and behavioural anxiety of the individual regarding his/her appearance. The scale contains 16 items. The scale items are graded as “not suitable at all”, “not suitable”, “somewhat appropriate”, “suitable” and “completely suitable”. The first item of the scale is reversly scored. The total score of the scale is between 16 and 80. The high score obtained from the scale indicates that the social appearance anxiety is high. For the Turkish population, the validity and reliability of the scale were done by Doğan et al. (2010). The internal consistency coefficient of the scale was found .84. In this study, the internal consistency coefficient of the scale (Cronbach’s Alpha) was determined .92.

Eating Attitude Test (EAT-26) was developed by Garner and Garfinkel (1979) to measure the symptoms of anorexia nervosa. EAT-26 scores do not indicate eating disorder; it shows the risk is developing an eating disorder when EAT-26 scores. In this research, the 26-item version was used.

The analysis of the test is determined by evaluating the sum of the scores of the 26 items. The scale items are graded as "never", "rarely", "sometimes", "often", "usually" and "always", with the answer option, 20 points are used as the cut-off point for the test. The 25th item of the test is reversed. Individuals scoring 20 and above are called individuals with “high risk of eating disorders”, while those scoring below 20 are considered as individuals with “normal eating behaviour”. The validity and reliability of the test are not conducted in Turkey; this study has made an application-specific among university students as a pilot study (Savasir & Erol, 1989). There is a lot of evidence that the scale can be used in high school and adolescents (Vardar & Erzenin, 2011; Uzdil et al., 2017; Buyuk & Duman, 2014; Hasan, 2017; Büyük & Özdemir, 2018). The internal consistency coefficient (Cronbach’s alpha) was found as .70. In this study, the internal consistency coefficient (Cronbach’s alpha) of the test was determined as a .84.

2.5. Anthropometric measurements

Students’ anthropometric measurements were obtained at the library. Students were provided with as few clothes as possible to minimize errors that may occur while taking measures. Evaluation of body mass index is arranged following, according to the World Health Organization Europe (2019). Very weak/Underweight II (≤ 16.9), Weak/Underweight I

(17-18.4), Normal weight (18.5-24.9), Pre-obesity/Overweight (25-29.9), Obesity I and II/Obesity (30-39.9), Obesity III/Heavy Obesity (>= 40).

2.6. Statistical Analysis

The data were obtained with the Statistical Package for the Social Sciences program. Number, percentage, average, standard deviation were used as descriptive statistics. The t-test (Independent Sample t-Test), one-way ANOVA, and Pearson correlation analysis (Point Biserial Correlation) were used according to the normality test (skewness, kurtosis +1, -1) results to compare the average scores.

3. Results

Majority of the students were male (60.4%). The mean age of students was 16.3±1.36 (min=15-max=23). Approximately half of the student (42.9%) is in the first year of school. 16.8% of students had very weak BMI, and 19% of the students are overweight and obese. More than half of students (64.2%) had a normal BMI. 11% of the students reported that they have a chronic disease, 9.3% of the student used any medication, and 8.2% had a diet. These diets were determined to be 33.3% with calorie restriction and increase (Table 1).

Table 1. Sociodemographic and diet characteristics of students (N=685)

Characteristics	n	%
Grade (School years)		
1 st year	294	42,9
2 nd year	148	21,6
3 rd year	139	20,3
4 th year	104	15,2
Gender		
Girl	271	39,6
Boy	414	60,4
BMI		
Very weak	115	16,8
Normal	440	64,2
Overweight, obese, heavy obese	130	19,0
Chronic disease characteristics		
I have a chronic disease	80	11,7
I have not any chronic disease	605	88,3
Medicine usage		
I have medicine, regular I used	64	9,3
I have not any medicine, I used	621	90,7
Diet		
I have a diet	56	8,2
I have not any diet	629	91,8
Diet type*	N:72	
Calorie restriction or increase	24	33,3
Salt restriction	20	27,8
Fat restriction	20	27,8
Diabetic diet	8	11,1

*Students could choose more than ones

The SAAS mean score of the students revealed 36.67±15.05. The EAT-26 mean score of the students was 13.80 ± 11.09. The frequency of normal eating attitudes was found as 71.8% while the frequency of abnormal eating attitudes was found as 28.2%. (Table 2).

The difference between students' medicine used status and SAAS scale mean scores were found statistically significant (t: 0.004; p: 0.006). The difference between the students with diet and EAT-26 scores were found statistically significant (t: 6.247; p: 0.001). (Table 3).

Table 2. The students' EAT-26 and SAAS characteristics (N=685)

	N	%	Min	Max	$\bar{x} \pm sd$
SAAS (total)	685		16	79	36,67±15,05
EAT-26 (total)	685		0	54	13,80±11,09
EAT-26 (20≤mean)	193	28,2	Anormal eating attitude		
EAT-26 (20>mean)	492	71,8	Normal eating attitude		

Table 3. The difference between students' SAAS and EAT-26 mean scores according to some sociodemographic characteristics (N=685)

	N	%	SAAS $\bar{x} \pm sd$	p	EAT-26 $\bar{x} \pm sd$	p
Grade (School years)						
1 st year	294	42,9	37,50±14,83	F:2,120	14,68±10,24	F:1,694
2 nd year	148	21,6	37,56±15,60	p:0,096	13,28±11,40	p:0,167
3 rd year	139	20,3	33,89±12,43		13,63±11,67	
4 th year	104	15,2	36,73±17,62		12,31±12,10	
Gender						
Girl	271	39,6	37,34±14,56	t:0,902	14,81±10,47	t:5,607
Boy	414	60,4	36,22±15,36	p:0,351	13,14±11,45	p:0,203
BMI						
Very weak	115	16,8	36,79±15,39	F:1,082 p:0,339	14,99±11,90	F:0,670
Normal	440	64,2	36,13±14,51		13,65±10,94	p:0,512
Overweight, obese	130	19,0	38,36±16,47		13,26±10,87	
Chronic disease characteristics						
I have a chronic disease	80	11,7	39,25±16,24	t:2,135 p:0,130	14,46±10,82	F:0,290
I have not any chronic disease	605	88,3	36,32±14,87		13,72±11,13	p:0,754
Medicine usage						
I have a medicine, regular I used	64	9,3	41,59±15,07	t:0,004 p:0,006	15,09±11,00	t:0,055 p:0,478
I have not any medicine, I used	621	90,7	36,16±14,97		13,67±11,10	
Diet						
I have a diet	56	8,2	36,45±16,13	t:1,367 p:0,873	17,23±12,59	t:6,247 p:0,001
I have not any diet	629	91,8	36,69±14,97		13,50±10,91	

p-value (<0,05) are in bold

A positive correlation was found between the SAAS score and the EAT-26 scores ($r = .129$). Although the EAT-26 scores were higher in the 9th and 10th-grade students than the other upper grades, the difference between the scores was not statistically significant, and a negative correlation was found between the

grade and the EAT-26 score ($r = -.076$). There was a negative and statistically significant relationship between students' SAAS mean scores and medicine usage ($r = .105$). Also, there was a negative statistically significant relationship between students' EAT-26 mean scores and diet ($r = .128$) (Table 4)

Table 4. Correlation between students' SAAS and EAT-26 mean scores and a lot of sociodemographic characteristics (N:685)

	EAT-26	SAAS	Grade	Gender	BMI	Chronic disease	Medicine usage	Diet
EAT-26	1,000							
SAAS	,129**	1,000						
Grade	-,076*	-,055	1,000					
Gender	-,049	-,036	-,043	1,000				
BMI	-,044	-,033	,094*	,115**	1,000			
Chronic Disease	-,011	-,062	,042	,078*	,013	1,000		
Medicine Usage	-,027	-,105**	,036	,099**	-,013	,602**	1,000	
Diet	-,128**	,007	-,003	,053	-,132**	,107**	,106**	1,000

* $p < ,05$; ** $p < ,01$

4. Discussion

Adolescences experience multi-dimensions changes. These changes make adolescents vulnerable to body image, appearance issues. Negative body image perception can lead to psychosocial problems such as social appearance anxiety and eating disorders in adolescents (Abdo et al., 2023; Houtepen et al., 2020). Previous studies indicate that the mean score of the SAAS supports the present study among high school students and female students in Turkey (Yildirim & Tastan, 2020; Radix et al., 2020). Also, unexpectedly, the current study was not found any significant relationship between SAAS and gender. However, it was observed that the social appearance anxiety levels of male students were higher than female students (Ebem, 2019).

Ebrahim (2019), indicate that obese participants have higher disordered eating attitudes among Kuwaiti college boys. This may be due to the majority of male students in the school.

It is important to emphasis, EAT-26 scores do not indicate eating disordered. High risk is developing an eating disorder when EAT-26 scores are ≥ 20 (Ebrahim et al., 2019). A study determined the mean score of EAT-26 was 30.89 ± 12.60 among women who have 21.6 mean ages for a clinical group. The same research represents the mean score of EAT-26 was similar to the current research. It is meaning that student who has more than 19 scores, there are eating disorder could present.

Also, the same study report that possible eating disorder is sensitive to pathologically healthful eating (Dunn et al., 2019). The current study shows, approximately a quarter of students have a high risk of eating disorders in this study. Also, they are reputed to could have possible eating disorders. Study support this percentage, (22.3%) and they focus on abnormal eating attitude was highly prevalent among the students (Mohiti et al., 2019). Tayfur and Evrensel (2020)' research, shows that 55 (18.3%) students have abnormal eating attitudes among Turkish university students aged 18 to 25 (Tayfur & Evrensel, 2020). However, the percentage of disordered eating attitudes is found quite low in another study (4.5%) (Michael et al., 2019). This prevalence difference might be rooted in study samples which is the Vocational School in the present study.

This study is focused on the relationship between eating attitudes and diet (-0.128), grade (-.076) is found statistically significant negative correlations ($p < 0.05$; Table 4). Michael (2019)'s study supports our findings partially; they are described in there are not any eating attitudes differences between grades. Their study indicates that BMI and eating attitudes have little to no relationship with each other, support the present study. Also, they argue that the diet and eating attitudes has not previously been studied among climber adolescent (Michael et al., 2019). The differences for the grades may be rooted in student school year distribution. Because the majority of students who were in the first year of the school, attend this study.

The current research is focused on the relationship between social appearance anxiety, and medicine

usage is found statistically significant ($p < 0.05$; Table 4). Students who use any medicine generally have any disorders or any chronic disease. So, this could be the reason for the relation between social appearance and eating attitudes. Ebrahim et al (2019), indicate that obese participants have higher disordered eating attitudes among Kuwaiti college boys. High levels of eating disorder symptoms also linked to obesity. According to another research among 14–25 years old girls, an online survey. The SAAS score of the students with eating disorders ($n=83$) is higher than healthy students ($n=323$)' SAAS score (Yildirim & Tastan, 2020). Students who use any medicine have any diseases or any chronic disease. So, this could be the reason for a significant relationship.

Anxiety and fear are essential for eating disorders among adolescents (Levinson et al., 2019). The current study shows that there is a significant relationship between eating attitudes and social appearance anxiety. Many studies support this finding.

According to research among 14-25 years old girls an online survey. It was found that the SAAS score of the students with eating disorders and eating attitude ($n=83$) is higher than healthy students ($n=323$)' SAAS score (Radix et al., 2019). A study indicates that social appearance anxiety significantly predicted body dissatisfaction in college-aged male, providing additional support to a growing body (Gerrard et al., 2020). Another study report that high levels of eating disorder symptoms and eating attitudes are linked to obesity and obese students generally have social appearance anxiety. Also, body dissatisfaction-related indices pertaining to muscularity (Ebrahim et

al., 2019). So, social appearance anxiety is mediated. According to another study, social appearance anxiety are highly comorbid for eating disorders among high school students (Christian et al., 2019). Social appearance anxiety impacts the relationship between eating pathology and body image disturbances (Radix et al., 2019). Body image and self-esteem predicted eating disorder risk among the high school student-athletes; in the US. The findings of this study can be a productive start to understanding the issue, but more research and prevention programs are needed (Ayala, 2020). Based on the results, it can be concluded that the training programs which is conducted to reducing social appearance anxiety, might be useful for the prevent the risk of eating disorders among this vocational high school students. The most important limitation of this study was that it was conducted with only one type of high school students.

However, as we mentioned in the introduction, since vocational high school students are among the risk groups, we think that this supports the strength of this study for the beginning.

5. Conclusions

All in all, findings from the present study show that eating attitudes are related to social appearance anxiety among vocational school students. In other words, social appearance anxiety impacts abnormal eating attitudes. It may be recommended to consider these two parameters together in future studies. It emphasizes the need to focus on improving the physical and mental health of the adolescent by providing psychosocial support to reduce anxiety. These data should be taken into account especially in

the eating attitudes pathology (Radix et al., 2019). the interventions to be made for vocational high school students.

The parameters resulting from this study should be added when planning education and programs.

The limitations of this study are that it is specific to the high school where the study was conducted and cannot be generalized. In addition, another limitation of the study is that the sample is limited due to the small number of students who volunteered and whose permission was obtained.

Data availability

Data that support the findings of this study have been deposited by the Corresponding author. This datasets analysed during the current study are available from the via the e-mail on reasonable request.

Conflict of interest

The researchers declare they have no conflict of interest.

Ethical Statements

It was consulted to (...) University Ethics Commission to evaluate the ethical suitability of the study. It was approved by the commission. Commission approved 04th meeting on 08.05.2018 (approval date). The research code is 2018-157 (approval number). The permission of the institution, scale and participants was obtained before the study was started. Also, it presented as an oral abstract presentation 6th International Nursing Congress, 19-21 December 2019 Ankara in Turkiye.

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