

Eating Attitudes and Related Factors in Turkish Nursing Students

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Background: Changing eating behaviors might trigger obesity, deficiency, anorexia nervosa, bulimia nervosa, and reactive eating disorders.

Objectives: This study aimed to determine eating attitudes of nursing students in the western Black-Sea region of Turkey as well as to examine the effects of demographic features, self-esteem, body image, income level, and family structure on their eating attitudes.

Materials and Methods: This cross-sectional study was conducted on 310 nursing students between January and February 2014. Data were collected using the personal information form, Eating Attitudes Test (EAT), Rosenberg Self-Esteem Scale (RSES), Beck Depression Scale (BDS), Body-Cathexis Scale (BCS), and Body Mass Index (BMI). Data were evaluated by descriptive statistics, independent samples t-test, one-way ANOVA, Kruskal-Wallis test, and Pearson correlation analysis.

Results: About 30.0% of Turkish nursing students had negative eating attitudes. There was a significant positive correlation between the BDS and EAT scores ($P < 0.001$). There was a significant negative correlation between RSES scores and EAT scores of nursing students ($P < 0.001$). A statistically significant difference was found between the father's occupation ($P < 0.05$) and mother's working condition ($P < 0.05$), and the students' eating attitudes.

Conclusions: Psychological status, self-esteem, economic level, and place of residence of nursing students may be the potential factors for eating disorders.

Keywords: Attitude; Body Image; Depression; Eating; Family; Nursing; Student; Self Esteem

1. Background

As is the case in the non-Western civilizations and the developed countries (1), the unfavorable eating attitudes and eating disorders have started to present a significant health problem in our country where rapid technological advancements and technological changes have been recently observed (2). In previous worldwide studies, unfavorable eating attitudes among the university students vary by 11.7% in the Czech Republic (3), 8.7% in Japan (4), 22.4% in Brazil (5), 30% in California (6), 82.8% in Mexico (7) and 35.4% in Lebanon (8). The range of eating attitude among the university students was found between 4.83% and 17.1% in studies in Turkey (9, 10). Unfavorable eating attitudes is the result of a complex interplay of biological features, genetic, familial features, socio-cultural environment, and psychological factors (9, 11-14). Eating attitudes of university students are affected by problems related to the friends, the distorted body perception, and unsatisfying view of their changing body due to the impact of the media in Turkey (5, 12). Unfavorable eating attitudes are also caused by such psychological problems as low self-esteem, insecure and introvert attitudes, inexpression, anxiety, depression, stress, hopelessness, gender acceptance, sexual trauma, interfamily problems, history of eating and psychiatric disorders in the family

(9, 11-14). A majority of past studies have focused on the relationship between body image, self-esteem, anxiety and depression level and eating attitudes. In these studies, it was reported that there was an association between eating attitudes and increased anxiety and depression level, low self-esteem, body dissatisfaction of nursing students (6, 8, 9, 12, 15, 16). In the study conducted by Vardar and Erzenin (17) in Turkey, the comorbidity was reported as a major depression in 13.2% and anxiety in 8.8% of those suffering from eating disorders. In another study in Turkey, Celikel et al. reported that disordered eating attitudes were positively correlated with depression, obsessive-compulsive symptoms, and phobic anxiety (9). Orucular and Bariskin also noted that depression scores positively predicted a disturbance, body satisfaction significant predictors in eating attitudes of Turkish university students (18). In the studies of Western societies, poor family functioning has been shown as another important risk factor for eating disorders (10, 19, 20). Yet, this issue is not clear in non-Western societies. However, this phenomenon is linked to the profound and tight family relations seen in the Turkish culture. It is known that the Turkish family structure does not usually allow the individuals to live on their own before they attend the university (9).

The young people are negatively affected and are prone to develop unfavorable eating attitudes when they start their university education, get away from the family, become more vulnerable to external influences, start to live by their own free decisions, experience financial problems, strive to get used to the new order, and have a limited time due to the dense schedules (11, 12, 21, 22). Toker and Hocaoglu reported that there was no relationship between family structure and eating attitudes of Turkish university students (23). Celikel et al. also noted that an eating attitude of the students was positively correlated with their mothers' obsessive-compulsive symptoms (9). The changing of eating attitudes might trigger obesity, deficiency, anorexia nervosa, bulimia nervosa, and reactive eating disorders (24). In various studies conducted on the girls attending the university, the prevalence of anorexia nervosa is reported to be 0.1% - 4.0%, and the prevalence of bulimia nervosa is stated to be 10% - 20% (3, 25). The high prevalence of eating disorders with the teenagers and young adults as well as its comorbidity and mortality relation with other mental and physical problems show that the eating disorders have turned a significant problem (3, 24). A study reveals that the eating disorders are common among the young people especially in the first year of the university, and that two third of the students gain weight; therefore, it is highlighted that the first year is a critical period in the development of the foresaid eating disorders (26). Nursing students, for both sustaining their lives and representing role models to the public as health workers, are of a societal significance. In this regard, it would contribute to the society's health to determine the eating attitudes of the nursing students and the affecting factors, contributing to the early resolution of the unfavorable eating attitudes.

2. Objectives

This study aimed to determine the eating attitudes of nursing students in the west Black-Sea region of Turkey and also to examine the effects of students' individual characteristics, self-esteem, body image, depression level and family structure on their eating attitudes.

3. Materials and Methods

3.1. Setting

This cross-sectional study was conducted in Zonguldak School of Health at Bulent Ecevit University in Turkey between January and February 2014.

3.2. Samples

Population of the study was comprised of 436 students during the spring semester of the 2013-2014 academic years. We were not applied the sampling method, and strived to reach at the population. The study was conducted on 310 students who had volunteered to join the

study. The inclusion criteria were: being able to speak, understand, and write Turkish, having no communication problems, and being present in all the sessions during the period when the study was being conducted. The 126 students, who had not volunteered and had been absent during the period when the study was being conducted, had been left out from the study's population. Ratio of the attendance in this study was calculated 71.1%.

3.3. Instruments

The data were collected using the personal information form, Eating Attitudes Test (EAT), Rosenberg Self-Esteem Scale (RSES), Beck Depression Scale (BDS), Body-Cathexis Scale (BCS), and Body Mass Index (BMI).

3.3.1. Personal Information Form

This form comprises a total of 15 questions that evaluate the student's grade, age, living place and accommodation place, father's occupation, mother's working condition, family characteristics, family's attitude towards the student, family's financial status, sufficiency of the allowance that the student receives from the family, student's working conditions, cigarettes and alcohol consumption, eating habits as well as stature and weight measurements.

3.3.2. Rosenberg Self-Esteem Scale

The scale was developed in 1965 by Rosenberg (25). In our country, Cuhadaroglu (27) has tested the reliability and validity of this scale, and the validity coefficient was demonstrated to be $r = 0.71$. The test-retest reliability method was adopted, and the reliability coefficient was demonstrated to be $r = 0.75$. The scale is a self-reported scale with 63 multiple-choice questions. The scale includes twelve subcategories. These subcategories are self-respect, sustainability of the concept of the self, relying on people, sensitivity to criticism, depressive sensation, fancifulness, psychosomatic symptoms, feelings of the thread in the interpersonal relations, ability to take part in discussions, mother-father affection, and relation with the father, and psychic isolation. If desired, these subcategories could individually be used in the studies. In line with the researcher's purpose, we adopted the first "10" items of the scale to measure the self-respect. Whereas the 1st, 2nd, 4th, 6th, and 7th items assessed the positive self-perception and were graded from 3 to 0; the 3rd, 5th, 8th, 9th, and 10th items assessed the negative self-perception and were graded from 0 to 3. The total range of the grades was 0 - 30; whereas a grade varying between 15 and 25 showed that the self-respect was sufficient, the grades lower than 15 pointed out a low self-respect.

3.3.3. Body-Cathexis Scale

Originally called the BCS, this scale was developed by Secord and Jourard (28). It is a scale evaluating a person's

satisfaction about 40 different parts and functions of their body. The scale was translated into Turkish by Hovardaoglu (29). In the study conducted on the university students, the reliability of two halves was determined as 0.75, the item test correlations were specified to be between $r = 0.45$ and $r = 0.89$, and the Cronbach alpha coefficient was found to be $r = 0.91$. The scale format used in our country is a scaling tool of a 5-level Likert type with 40 items. For each of these items, there are grades varying in between 1 and 5, and multiple response options, which are "I don't like it at all", "I don't like it", "I'm not sure", "I like it", and "I like it a lot". According to these responses, the minimum possible total score is 40, and the maximum possible total score is 200. The cut-off score of this scale is 135; remaining under this score demonstrates a decreased in an individual's satisfaction about their body parts or functions whereas a score of 135 or more means an increase in the mentioned satisfaction.

3.3.4. Beck Depression Scale

Beck Depression Scale (BDS) developed by Beck (30) was tested in Turkey for its validity and reliability by Tegin (31) and Hisli (32). The scale is composed of 21 items related to such depressive symptoms as pessimism, feelings of failure, dissatisfaction, guilt, uneasiness, fatigue, loss of appetite, indecisiveness, sleep disruptions, and social withdraw. Every item offers 4 options, graded from 0 to 3. The total score is between 0 and 63; the increasing scores sheds light on the severity of the depression. Each of the mentioned 21 items includes 4-level self-evaluation statement which identifies a depressive behavior. Tegin (31) was identified this scale's reliability coefficient as $\alpha = 0.86$, and validity coefficient as $\alpha = 0.75$. The standard cut-offs are as follows: 0 - 9: indicates minimal depression, 10 - 18: indicates mild depression, 19 - 29: indicates moderate depression, 30 - 63: indicates severe depression.

3.3.5. Eating Attitudes Test

The Eating Attitudes Test (EAT) was developed by Garner and Garfinkel (33) as a self-evaluation test so as to evaluate the symptoms of anorexia nervosa, eating behaviors and attitudes. The EAT's validity and reliability tests in Turkey were performed by Savasir and Erol (34), and the reliability coefficient, thus, was found to be 0.70. The eating attitudes test is a scale of 6-optioned multiple-choice Likert type. The cut-off score of the scale was determined as 30. Scores above 30 indicated an abnormal eating behavior, between 21 and 30 indicated moderate risk and below 21 indicated low risk. For the items 1, 18, 19, 23, 27, 39, "sometimes" is graded as 1 point, "rarely" as 2 points, and "never" as 3 points; the other options are regarded as 0. For the rest of the items in the scale, "always" is graded as 3 points, "very often" as 1 point, and the other options are calculated to be 0. In the end, the scores relating to each item of the scale are summed up, and the scale's total score is thus measured.

3.3.6. Body Mass Index

Weight and length information of the students participated in the study was recorded based on their statements and were used to calculate their Body Mass Index (BMI).

3.4. Procedure

The students were informed on the objectives of the study as well as the facts that the forms should be completely and cautiously filled in, and the acquired data would only be used for scientific purposes. Moreover, the students verbally expressed their consents. So as to increase the number of the attendees, the data collection instruments were applied at the end of the basic applied lessons and in a classroom environment. The forms were collected by the researchers after they had been filled in.

3.5. Ethical Considerations

Before initiating the study, we requested written confirmation of the institution where the study was conducted, and also verbal confirmation of the students.

3.6. Data Analysis

The SPSS 16.0 (SPSS Inc., Chicago, IL, USA) program was utilized for the data assessment. To analyze the data, the descriptive statistical methods (numbers, percentages, averages, standard deviations) were used. Moreover, the t-test was applied to analyze the difference between the averages of the two groups. The Kruskal-Wallis test was adopted in the case of nonhomogenous groups. To determine the relationship between the numeric variables, the Pearson's correlation coefficient test was applied. Multiple-linear regression analyses were conducted to assess the relationship between the individual and family characteristics with students' eating attitudes. The results were evaluated in a reliability range of 95%, and the significance was found to be at a level of $P < 0.05$.

4. Results

The mean age of the samples was of 21.40 ± 1.86 (range: 19 - 36). More than one-third of the sample (36.8%) was in their first year. About 24.8% of the students lived at a state dormitory. Most of the students (70.3%) reported the allowance given by their families was sufficient. Most of the students did not consume alcohol (83.5%) and cigarettes (85.2%). A majority (76.5%) of the students had a normal BMI. A significant difference was found between the living place ($P < 0.05$), quantity of the allowance received from the family ($P < 0.001$) and their eating attitudes. No significant difference was identified between other individual characteristics of the nursing students and eating attitudes ($P > 0.05$) (Table 1). Results of the scales including EAT, RSES, BDS, BCS are shown in Table 1. The nursing students in the study had a moderate risk

of eating attitude, with average scores of 27.29; sufficient self-respect, with average scores of 21.20; moderate level of depression, with average scores of 10.11; and positive body image (average 147.07). The self-esteem level of 94.8% of the students was sufficient, and the body perception of the 71% was found to be positive. About 6.5% of the students in the study had symptoms of severe depression (Table 2). High, moderate and low-risk eating attitudes were found in 30.0% (n = 93), 26.1% (n = 81) and 43.9% (n = 136) of the nursing students, respectively (Table 2). There was a positive significant correlation between depression and eating attitudes ($P < 0.000$), while there was a negative significant correlation between self-esteem and eating attitudes of nursing students in this study ($P < 0.001$) (Table 3). Multiple- regression analysis was used to predict eating attitudes and individual characteristics of the nursing students. There was a positive

association between eating attitudes and the depression level of nursing students (Table 4). More than one-third of the students' fathers (35.2%) were retired. Most of students' mothers (85%) did not work. A perceived income level of the group (58.7%) was moderate. The parents of 91.3% of the students were alive and live together and 86.8% of the families respect the students' ideas, and care about their children. A statistically significant difference was found between the father's occupation ($P < 0.05$) and mother's working condition ($P < 0.05$), and the students' eating attitudes. No significant difference was identified between other family characteristics of the nursing students and eating attitudes ($P > 0.05$) (Table 5). In the multiple-regression analyses among nursing students, there was no significant association between familial characteristics and eating attitudes of nursing students ($P > 0.05$) (Table 6).

Table 1. Comparison of the Individual Characteristics of the Students and Eating Attitudes Test Scores^a

Individual Variables	No. (%)	EAT Score, Mean \pm SD	Test, P Value
Class			F = 2.05, P = 0.107
First	114 (36.8)	29.76 \pm 18.25	
Second	81 (26.1)	25.27 \pm 14.63	
Third	59 (19.0)	28.52 \pm 17.50	
Fourth	56 (18.1)	23.87 \pm 16.74	
Living Place			KW = 12.22, P = 0.016
State dormitory	77 (24.8)	29.14 \pm 16.91	
Private dormitory	76 (24.5)	31.22 \pm 19.78	
With the family	53 (17.1)	20.98 \pm 9.79	
Apartment with the friends	93 (30.0)	25.65 \pm 16.39	
Apartment, alone	11 (3.5)	31.00 \pm 22.27	
Allowance given by the family			t = -3.51, P = 0.001
Sufficient	218 (70.3)	25.11 \pm 15.24	
Insufficient	92 (29.7)	32.43 \pm 19.85	
Working Condition			t = 0.62, P = 0.535
Works	25 (8.1)	29.32 \pm 16.58	
Doesn't work	285 (91.9)	27.11 \pm 17.10	
Cigarette Consumption			t = 0.00, P = 0.995
Yes/Consumes	46 (14.8)	27.30 \pm 21.29	
No/Doesn't consume	264 (85.2)	27.28 \pm 16.24	
Alcohol Consumption			KW = 0.04, P = 0.976
Yes/Consumes	22 (7.1)	33.95 \pm 28.14	
No/Doesn't consume	259 (83.5)	27.01 \pm 16.20	
Social drinker	29 (9.4)	24.65 \pm 12.20	
Body Mass Index			KW = 4.27, P = 0.233
Underweight (< 18.5)	25 (8.1)	30.24 \pm 19.21	
Normal (18.5-24.9)	237 (76.5)	26.57 \pm 16.27	
Overweight (25-29.9)	43 (13.9)	30.55 \pm 19.86	
Obese (\geq 30)	5 (1.6)	18.40 \pm 12.23	

^a Abbreviation: EAT, Eating Attitudes Test.

Table 2. Measures of Eating Attitudes Test, Rosenberg Self-Esteem Scale, Beck Depression Scale, Body-Cathexis Scale of the Nursing Students

Variables	No. (%)	Mean \pm SD	Min-Max Score
Eating Attitudes Test			
Low risk	139 (43.9)		
Moderate risk	81 (26.1)	27.29 \pm 17.04	6-92
High risk	93 (30.0)		
Rosenberg Self-Esteem Scale			
Low self-esteem	16 (5.2)	21.20 \pm 3.76	10-30
Sufficient self-esteem	294 (94.8)		
Beck Depression Scale			
Minimum depression	189 (61.0)		
Mild depression	76 (24.5)	10.11 \pm 9.15	0-39
Moderate depression	25 (8.1)		
Severe depression	20 (6.5)		
Body-Cathexis Scale			
Negative body image	90 (29.0)	147.07 \pm 29.33	42-200
Positive body image	220 (71.0)		

Table 3. Pearson Correlations Between Age, Rosenberg Self-Esteem Scale, Beck Depression Scale, Body-Cathexis Scale and Eating Attitude Test

Variables	Eating Attitudes Test (EAT)	
	r	P Value
Age	-0.05	0.355
Rosenberg Self-Esteem Scale	-0.24	0.001
Beck Depression Scale	0.31	0.001
Body-Cathexis Scale	0.08	0.14

Table 4. Multiple Regression Analysis for Predicting the Relation between Individual Characteristics and Eating Attitudes

Variables	B	SE	β
Class	-0.03	0.04	-0.04
Place of Stay	-0.07	0.03	-0.11
Cigarette Consumption	0.15	0.13	0.06
Alcohol Consumption	0.01	0.11	0.00
Body mass index	0.01	0.09	0.01
Self esteem	-0.25	0.21	-0.06
Body image	-0.05	0.10	-0.02
Depression	0.22	0.05	0.23 ^a

^a $p < 0.001$.

Table 5. Comparison of the Familial Characteristics of the Students and Eating Attitudes Test Scores

Familial Characteristics	Eating Attitudes Test		
	No. (%)	Mean \pm SD	Test, P Value
Father's Occupation			KW = 11.75, P = 0.038
Unemployed	14 (4.5)	23.00 \pm 11.36	
Worker	66 (21.3)	30.45 \pm 18.09	
State officer	53 (17.1)	21.90 \pm 13.58	
Self-employed	56 (18.1)	27.78 \pm 17.23	
Retired	109 (35.2)	28.75 \pm 18.31	
Other	12 (3.9)	23.08 \pm 12.61	
Mother's Working Condition			t = 2.18, P = 0.029
Works	45 (14.5)	32.40 \pm 21.31	
Unemployed	265 (85.5)	26.42 \pm 16.09	
Family's Financial Status			KW = 4.79, P = 0.187
Poor	21 (6.8)	34.19 \pm 24.54	
Moderate	182 (58.7)	27.90 \pm 16.65	
Good	101 (32.6)	24.25 \pm 14.31	
Very good	6 (1.9)	35.50 \pm 30.34	
Family Features			KW = 3.25, P = 0.190
Mother/Father are alive and together	283 (91.3)	26.92 \pm 17.00	
Mother/Father are alive and divorced	14 (4.5)	31.00 \pm 16.07	
Mother and/or Father is dead	13 (4.2)	31.30 \pm 19.18	
Family's Attitude Towards the Individual			KW = 5.76, P = 0.217
Uninterested, do not deal with anything	10 (3.2)	33.40 \pm 17.91	
Respect his/her ideas, care about him/her	269 (86.8)	22.69 \pm 17.00	
Try to control his/her behaviors with pressure	22 (7.1)	33.13 \pm 19.03	
Buy everything she/he wants, spoil him/her	4 (4)	22.75 \pm 6.99	
Do not let him/her do any work, protect him/her from the bad	5 (5)	24.80 \pm 8.40	

Table 6. Multiple Regression Analysis for Predicting the Relation between Family Characteristics and the students' Eating Attitudes

Variables	B	SE	β
Father's Occupation	0.20	0.03	0.03
Mother's Working Condition	-0.09	0.14	-0.04
Family's Financial Status	-0.13	0.07	-0.10
Family Features	0.12	0.11	0.06
Family's Attitude Towards the Individual	0.03	0.09	0.02

5. Discussion

This study was investigated the eating attitudes of the nursing students in Turkey, and the factors affecting their eating attitudes. The mean EAT score was 27.29 \pm 17.04 in the samples of this study. In accordance with previous studies, the mean of the EAT scores reported in previous studies varied between 11 to 21 in Turkey (9, 21, 35, 36). The results of the current study also demonstrated that 30.0% of the nursing students had unfavorable eating attitudes. This rate is similar to the results of

previous studies worldwide (3, 4, 7, 8, 24, 37). The range of eating attitudes among the university students was reported between 4.83% and 17.1% in studies in Turkey (9, 35, 36). The rate in the current study is very high compared to the results of other studies in Turkey. The relatively high rate in this study might be related to the characteristics of our samples, which were predominantly girls and first-year students. In Turkey, the family has been the source of support for young people for a long time.

This result has put forward the risk of eating disorders with the Turkish nursing students, especially first-year students due to the separation from their families, orientation to a new friend group, and adaptation to the nursing education that has a quite dense curriculum. Ramezani et al. also reported that there was a significant relationship between the knowledge and attitude related to nutrition in first-year students (38). In the present study, a positive significant association was found between a depression level and eating attitudes of the nursing students, and depression symptoms predicted higher scores on EAT according to the multiple regression analyses. These results support the conclusion that depression is a significant risk factor of abnormal eating attitudes among university students (7, 12, 16-18, 24). Although the studies performed show a relation between depression and eating disorders, it is also emphasized that it is not a criterion for the diagnosis of eating disorders. In this study, there was a significant negative correlation between RSES and EAT of nursing students. The RSES score was significantly lower in nurses with abnormal eating attitude. However, the multiple regression analyses revealed that lower self-esteem could not predict abnormal eating attitudes in nursing students. The relationships between abnormal eating attitudes and low self-esteem have been widely observed in previous studies (1, 11, 12, 39); therefore, lower self-esteem is also an important risk factor for eating disorder, and students' self-esteem should be evaluated for preventing eating disorders. Some of familial and individual characteristics were associated with the eating attitudes of nursing students in this study. The study was significantly revealed students experiencing financial problems had abnormal eating attitudes. Since nursing students in this study were university student and had a relatively moderate economic level, they had a less purchasing power and consumed fewer nutrients than they actually need. Furthermore, in this study, the significantly negative eating attitudes of the students whose fathers work as workers and mothers have an occupation represent a supportive finding that these students experience financial problems. The previous studies performed by Altug et al. (35), Celikel (9), and Toker and Hocaoglu (23) have reported no correlation between the socioeconomic position and eating attitudes. The students are negatively affected from staying at a private dormitory or living in an apartment by themselves. Unfavorable eating attitudes are caused by the facts that the students living alone order their food from outside as fast-food, like to eat at a restaurant, and are picky with what they eat. State dormitories, compared to the private ones, are the institutions where the students can sufficiently and balanced be nourished at a low cost, and have regular meals due to the specific eating periods. Moreover, the results of the study performed by Saygin et al. (2) revealed that eating attitudes of the students staying at the dorms are favorable whereas those of the students living alone in

apartments are not. Differently from the findings of the previous studies, the results of this study revealed that the students' BMI and body perceptions did not have a significant effect on their eating attitudes. The previous studies reveal a significant relation between the students' BMI and body perceptions and their eating attitudes (11, 14, 17, 40). Moreover, in the present study, no significant difference was found between the students' family structures and their parents' behaviors towards them and the eating attitudes. This finding is in agreement with the results of study conducted by Toker and Hocaoglu (23). The current study revealed that one-third of the students had negative eating attitudes. This study confirmed that there was a significant correlation between an increased depression level, decreased self-esteem and eating attitude scores. Furthermore, a significant difference was found between the economic level and place of residence and eating attitudes of nursing students in this study. The results of this study can provide baseline data for designing educational programs to prevent abnormal eating attitudes and coping with stress among Turkish nursing students. Also, these results can be useful for reorganization of nursing curriculum in nursing school in Turkey.

The study was applied to a single sample group. Therefore, it cannot be generalized to include all the university students in Turkey. Further studies with random sampling and larger sample sizes from different regions of Turkey should be conducted. Another limitation is that the study was conducted with measuring tools based upon self-reports for students' family characteristics. Further studies should be conducted with more objective instruments. Third limitation is the cross-sectional design of this study, which prohibited from exploring causal relationship. The use of instruments with known reliability and validity in sample is an asset of this study. We believe that our study is of prime value since no previous study was included this large sample size, previous studies were not presented together the data provided in this study, and this study will offer a more comprehensive evaluation opportunity for the future studies.

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Authors' Contributions

Study concept and design and development of the methods: Sevim Celik; Data collection: Bayram Ali Ugur, Fethi Ahmet Aykurt, and Muammer Bektas; Data analysis and interpretation: Sevim Celik; and writing of the manuscript draft: Sevim Celik, Bayram Ali Ugur, and Fethi Ahmet Aykurt. All the authors contributed to the reading, and revising of the manuscript, and approving the final version.

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