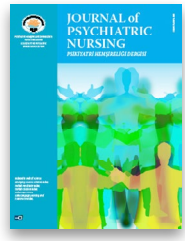
JOURNAL OF
PSYCHIATRIC NURSING

DOI: 10.14744/phd.2021.14890
J Psychiatric Nurs 2021;12(3):237-244



Original Article

The relationship between the nursing undergraduate students' eating attitudes and the risk of alcohol and substance abuse

Selda Öztürk,[1] Aysel İncedere[2]

[1]Department of Mental Health and Psychiatric Nursing, Trakya University Faculty of Health Sciences, Edirne, Turkey
[2]Department of Psychiatric Rehabilitation, Kocaeli University Institute of Health Sciences, Kocaeli, Turkey

Abstract

Objectives: This study is to determine the relation between eating attitudes and risk of alcohol and substance addiction and the affecting factors of nursing college students.

Methods: The sample of this descriptive and correlational study was conducted with students who take education at Nursing in Faculty of Health Sciences (n=477). Analyses of datas, which were collected using Eating Attitudes Test (EAT), Addiction Profile Index Risk Screening (APIRS-alcohol) for Alcohol Scale and Addiction Profile Index (APIRS-drug) for Substance Scale, were performed with percentile distributions, averages, Mann-Whitney U test, Kruskal Wallis test and Sperman Correlation Analysis.

Results: The mean age of the students were 20.83±1.59, 88.9% were women, 27.9% 2nd grade in university. EAT mean scores of 15.84±10.87, APIRS-alcohol scale mean scores 0.59±1.54 and APIRS-drug scale mean scores were 0.15±0.92 of students. It was determined 8.0% of students have eating disorder, 9.2% of students have high risk of alcohol use and 1.9% of students have high risk of substance use. There was a significant positive relation between students with eating disorders and with high risk groups in terms of substance use (r=0.105, p=0.021). In addition, There was a significant positive relation between students with eating disorders and with high risk groups in terms of alcohol use (r=0.097, p=0.034). Students who have eating disorders and found significant positive relation between have high risk of substance use (p<0.001). There was statistically significant positive correlation between the risk of alcohol use and the risk of substance use of the participants (r=0.402, p<0.001).

Conclusion: It was determined that students who have eating disorders were high risk of substance use and Alcohol use. High risk for alcohol use were also found to be high risk for substance use.

Keywords: Alcohol abuse; drug abusers; feeding and eating disorders; nursing; students.

Eating behavior, which meets one of the most basic needs of human beings, is an activity that has social, cultural, and psychological dimensions. In addition to the physical and mental well-being of the individual, society and culture in which the individual lives have a considerable impact on the eating behavior and habits of the individual.[1,2] Eating behavior begins to be shaped by the cultural characteristics of the society in which individual lives and may turn into bad eating habits, such as unbalanced eating, unconscious nutrition, fast eating, or neglecting eating food due to lack of time, depending on living conditions.[3]

Eating disorders are among the manifestations of mental illness in which healthy eating behavior is significantly impaired.[4] Albeit eating disorders are common among mental illnesses, they are also common among university students.[1,5] When studies on eating disorders in university students were

Address for correspondence: Selda Öztürk, Trakya Üniv. Sağlık Bilimleri Fak., Ruh Sağlığı ve Psikiyatri Hemşireliği ABD, Edirne, Turkey
Phone: +90 284 213 30 42 / 1026 **E-mail:** seldaozturk@trakya.edu.tr **ORCID:** 0000-0001-9069-412X

Submitted Date: July 01, 2019 **Accepted Date:** April 25, 2021 **Available Online Date:** September 30, 2021

What is presently known on this subject?

- The findings showed that the rate of coexistence of alcohol and/or substance abuse disorders in young people with eating disorders has increased in recent years, and the coexistence of these two diseases has caused severe functional losses.

What does this article add to the existing knowledge?

- In our study, a correlation was found between the prevalence of potential eating disorders and alcohol abuse as well as substance abuse. The fact that 24% of the youth with potential eating disorder behaviors use alcohol and 11% of them have substance abuse suggests that more comprehensive studies are needed in this field.

What are the implications for practice?

- The higher rate of potential eating disorders and alcohol and/or substance abuse risks among students who have a bachelor's degree in professional health care services suggest that the risk may be higher among adolescents and young adults as. Thus, it is necessary to investigate the risk factors, plan training and interventions for early diagnosis and treatment.

assessed, the findings showed that 12% to 25% of the university students have eating disorders.[6,7] The prevalence of eating disorders was 2.33% in the study of Vardar et al.,[8] which was performed on adolescents in our country in 2011. Anxiety disorder, panic disorder, obsessive-compulsive disorder, alcohol or substance abuse disorders are common as comorbidities among individuals with eating disorders[9] The presence of comorbidities in patients with eating disorders were predictors of non-compliance or discontinuation of treatment.[10] The coexistence of alcohol or substance abuse disorders and eating disorders, which are among comorbidities, appears to have increased to an alarming degree. It has been revealed in the national comorbidity study that the lifetime prevalence of concurrent substance abuse disorder among adults with eating disorders was between 23% and 37%.[11] They stated that alcohol/substance abuse was also common among university students and that individuals with eating disorder behaviors have a higher rate of alcohol/substance abuse.[12–15] Ziobrowski et al.[16] (2018) found in their study that 22.7% of the individuals with alcohol/substance use disorder have eating disorders as well. There are various explanations for the overlap between eating disorder and substance abuse disorder, including common biological, psychological, and societal risk factors that increase susceptibility to the development of comorbidities.[17] It is noticed that on an individual basis, familial and cultural influences (especially irregular eating habit and family environment that normalizes substance use) are among the predictors, in addition to the higher rates of depression and anxiety disorders, increased risk of suicide, childhood distress and trauma, common neurochemistry of diseases, psychiatric disease history in family, Cluster B personality traits (especially impulsivity), and behaviors, such as compulsive behavior and perfectionism[18–20] It is suggested that the adults with alcohol/substance abuse and eating disorders adopt unhealthy coping methods to avoid negative emotions and thus utilizes food or alcohol/substance as a tool to avoid emotions. Hence, eating disorders and alcohol as well as substance use disorders can be considered a way of coping with problems,[21–24] which may lead to an increase in the desire to consume substances and foods again.[25]

The coexistence of eating disorder and alcohol/substance use disorder may cause severe medical complications, prolonged recovery, impaired social functioning, more frequent and/or severe comorbidities, increased suicide attempts, and higher mortality rates. It is very crucial to recognize the disease at an early stage and promptly seek treatment. The coexistence of these two diseases typically leads to patients being resistant to treatment and may experience embarrassment and/or have a sense of guilt and a reluctance to report their symptoms.[26]

The fear of social consequences, such as dismissal and the termination of education for individuals with alcohol/substance use disorder due to being stigmatized and discriminated against may cause them to avoid seeking treatment.[27] It is easier for us to observe the symptoms of an eating disorder and for people to express it. It is remarkably important to assess young people who are considered to have eating disorders concerning comorbid diagnoses and whether they use addictive substances or not.

This study was performed to investigate the relationship between university students' eating attitudes and alcohol/substance abuse and related factors.

In this research, answers for the following questions were sought:

1. Is there a relationship between the eating attitudes of nursing undergraduate students and alcohol and substance abuse?
2. What are the individual characteristics that impact potential eating disorders, alcohol abuse, and substance abuse?

Materials and Method

Study Population and Sample

The data of this research, which was designed as a descriptive and correlational study, were collected from students studying at the Faculty of Health Sciences, Nursing Department of a university. The population in this study consisted of students (n=530) who received nursing education in the 2017–2018 academic year. The sample size was not calculated since it was intended to reach the entire population. In this study, 90% (n=477) of the students who were included volunteered to participate and constituted the sample of this study.

Data Collection Tools

The data were collected using the Information Form prepared by the researchers, the Eating Attitude Test (EAT), and the Addiction Profile Index Risk Screening Scale (API RSS).

Demographic Information Form: In accordance with the literature review[5,23,28–30] performed by the researchers, it consisted of 10 questions, including the sociodemographic characteristics (age, gender, class, family type, income level, smoking status) and parent characteristics (educational status of the parents and the employment status of the parents).

Eating Attitude Test (EAT): EAT is a self-administered scale de-

veloped by Garner and Garfinkel[31] (1979) to assess potential disorders in eating behavior in both patients with eating disorders and individuals without eating disorders. The reliability and validity study of the scale in Turkey was performed by Savasir and Erol[32] (1989), and Cronbach's alpha reliability coefficient was 0.70. EAT is a six-point Likert-type scale consisting of 40 items, and the cut-off score of the scale was determined as 30. 30 points and above in EAT indicates impaired eating behavior. Test reliability of this study was evaluated with Cronbach's Alpha Coefficient, and it was 0.83.

Addiction Profile Index Risk Screening (APIRS)-alcohol and drug: It was developed by Ögel et al.[33] (2017) as a risk screening questionnaire for determining the level of alcohol and substance use. Cronbach's alpha coefficient of the scale was 0.88. The scale, which is evaluated in two sub-dimensions, consists of six items for the risk assessment of alcohol use and seven items for the assessment of substance use. If the total score obtained from the APIRS-Alcohol Scale is 3 or above, the individual is considered as "High Risk". Test reliability value for this study was 0.85. If the total score obtained on the APIRS-Drug Scale is 4 or above, the individual's substance abuse level is considered "High Risk". Test reliability value for this study was 0.93.

Process

Before the data were started to be collected, the informed consent of the participants was obtained by explaining the objective of this study. The questionnaire forms used in this study were made to be filled individually by the students within an average of 10 to 15 minutes during break time for lessons.

Statistical Analysis

The data, which were obtained in this study, were analyzed using the software of SPSS (Statistical Package for Social Sciences) for Windows 20.0. Reliability of Eating Attitude Test (EAT) and Addiction Profile Index Risk Screening (APIRS) were analyzed via reliability analysis. Cronbach-alpha coefficients of the scales were calculated. The compatibility of the variables to normal distribution was analyzed using visual (histogram and probability graphs) and analytical methods (Skewness and Kurtosis values).[34] Since the data were not distributed normally, the Mann-Whitney U test and Kruskal-Wallis test, which are non-parametric tests, were used in the statistical analysis, while the Bonferroni test, one of the post-hoc test, was used to determine the source of the significant difference between the groups as a result of the analysis, and Spearman correlation analysis was used to investigate the correlation between the continuous variables of the study. Number, percentage, mean and standard deviation were used as descriptive statistical methods. The results were considered statistically significant at $p<0.05$.[35] Moreover, the presence of multiple sub-variables in the APIRS-Drug total score and the income level, in other words, the excess number of groups in these variables, leads to an increase in the margin of error in the comparison of the APIRS-Drug total score and income level as well as in paired comparisons. Hence, Bonferroni correction was made for the value of significance in the analyses. The Bonferroni correction is determined by the formula of p/k, that is, level of significance/number of groups.[36] For this study, the significance level was determined as 0.05/3=0.016 with the Bonferroni correction since the number of groups in the income level variable was three. Thus, the significance level was considered p=0.016 for the Mann-Whitney U test, which was used to analyze the difference between income levels following Kruskal-Wallis H analysis.

Ethical Aspect of the Research

The ethical approval was obtained from the scientific research ethics committee of a university's medical faculty with the decision number of TÜTF-BAEK 2017/196. The written permission was obtained from the institution where this study was conducted for the ethical compliance of this study. This study adhered to the ethical principles of the Declaration of Helsinki. The student nurses participating in this study were interviewed and they were informed about the objective of this study and the usefulness to be obtained from this study. Furthermore, in order for the students to feel comfortable before the application and to obtain reliable answers, an explanation was made to students that they would not share their name, they would use a nickname, the information they would give would be kept confidential and would not be used anywhere except the research, and special care was paid to ensure voluntary participation.

Limitations of the Study

This study is limited only by the sampling students of the nursing department of a university's Faculty of Health Sciences, the period of the study, and data collection tools used in this study. Besides, the evaluation of eating attitudes only with a scale, not making a mental assessment to determine eating disorders, not obtaining data such as body mass index, and not providing opportunities to easily express alcohol/substance use are among the limitations of the study as well.

Results

The mean age of the students who participated in this research was 20.83±1.59 years. 88.9% of the students are female, 27.9% (n=133) were in the second grade, while 83.9% (n=400) had a nuclear family structure, 84.1% (n=401) of them had an income, which was equal to their expenses, and 88.2% of them did not smoke. Smoking students smoked an average of 11.34±6.41 cigarettes per day (Table 1).

While the mean of the total EAT score of the participants was 15.84±10.87 (EAT≥30), the prevalence of potential eating disorders was 8.0%. The mean total score of APIRS-Alcohol was 0.59±1.54, and 9.2% of the participants were at high risk for

Table 1. Characteristics of participants (n=477)

Characteristics of participants	Mean±SD	n	%
Age	20.83±1.59		
Gender			
Female		424	88.9
Male		53	11.1
Class			
1 grade		98	20.5
2 grade		133	27.9
3 grade		122	25.6
4 grade		124	26.0
Family type			
Nuclear family		400	83.9
Extended family		70	14.7
Broken family		7	1.5
Income level			
Income is equal to expenses		401	84.1
Income is more than expenses		42	8.8
Income is less than expenses		34	7.1
Smoking status			
Yes		57	11.9
No		420	88.2
Number of cigarettes used per day	11.34±6.41		

SD: Standard deviation.

alcohol abuse. The mean of the students' total APIRS-Drug score was 0.15±0.92, and 1.9% of them were at high risk for substance abuse (Table 2).

The findings showed that 23.7% of the participants with potential eating disorders had alcohol use, while 10.5% had substance use and 8.1% had both alcohol and substance use. It was determined that 24.2% of females with potential eating disorders had alcohol use, while 12.1% had substance use, and 9.4% had alcohol and substance use. While the rate of alcohol use was 20% in males with potential eating disorders, none of the males had substance use (0%) (Table 3).

No significant difference was found between the APIRS-Drug scores and the income level of the participants. To determine which group favored the difference between pairs, the Bonferroni-corrected Mann-Whitney U test was applied to the income level variable in pairs. The findings showed that the significance determined by the Bonferroni test originated from the student group whose income level was higher than their expenses (Z=-2.504, p=0.012). It has been determined that students with a higher income than expenses were at high risk for substance abuse. When the correlations between EAT, APIRS-Alcohol and APIRS-Drug scores and age, gender, grade in education, family type, mother's employment status, and father's employment status were examined, no statistically significant difference was found (p>0.05) (Table 4).

When the correlation between students' EAT, APIRS-Alcohol, and APIRS-Drug total scores and some parameters were examined, there was a statistically significant positive correlation between the total EAT score and the APIRS-Drug score (r=0.105; p=0.021). Accordingly, as the potential eating disorder increased, the risk for substance abuse increased. A positive, statistically significant correlation was also found between the students' total score of EAT and their APIRS-Alcohol total score (r=0.097; p=0.034). Accordingly, the findings showed that as the potential eating disorder increased, the risk for alcohol abuse increased. A remarkably significant and positive correlation was determined between the total scores of the participants' APIRS-Alcohol and APIRS-Drug (r=0.402; p<0.001). Accordingly, it was determined that the higher the risk of alcohol abuse was associated with the higher the risk

Table 2. EAT, APIRS-Alcohol and APIRS-Drug mean scores and rate of incidence of participants'

	EAT	APIRS-Alcohol	APIRS-Drug
Total Score of Scale (Mean±SD)	15.84±10.87	0.59±1.54	0.15±0.92
	EAT	**High risk for alcohol abuse**	**High risk for substance abuse**
Rate of incidence, n (%)	38 (8.0)	44 (9.2)	9 (1.9)

EAT: Eating Attitude Test; APIRS-Alcohol: Addiction Profile Index Risk Screening-alcohol; APIRS-Drug: Addiction Profile Index Risk Screening-drug; SD: Standard deviation.

Table 3. Rate of participants with potential eating disorders' alcohol/substance use

	Alcohol use	Substance use	Alcohol ve substance use
EAT 30 points and above, n (%)	9 (23.7)	4 (10.5)	3 (8.1)
EAT 30 points and above in women, n (%)	8 (24.2)	4 (12.1)	3 (9.4)
EAT 30 points and above in men, n (%)	1 (20.0)	0 (0.0)	0 (0.0)

EAT: Eating Attitude Test.

Table 4. Comparison of the scores of EAT, APIRS-Alcohol and APIRS-Drug and characteristics of participants

Characteristics of participants	Total score of EAT	Total score of APIRS-Alcohol	Total score of APIRS-Drug
Gender			
Female	Z=-0.848	Z=-1.725	Z=-1.138
Male	p=0.397	p=0.085	p=0.255
Family type			
Nuklear family	χ^2=3.576	χ^2=0.417	χ^2=0.264
Extended family	p=0.167	p=0.812	p=0.876
Broken family			
Income level			
Income is equal to expenses	χ^2=1.673	χ^2=5.943	χ^2=6.311
Income is more than expenses	p=0.433	p=0.051	p=0.043
Income is less than expenses			
Mother's employment status			
No			
Yes	χ^2=0.608	χ^2=0.102	χ^2=0.925
Retired	p=0.895	p=0.992	p=0.819
Dear departed			
Father's employment status			
Yes			
No	χ^2=3.813	χ^2=5.197	χ^2=2.179
Retired	p=0.282	p=0.158	p=0.536
Dear departed			
Class			
1 grade			
2 grade	χ^2=3.150	χ^2=2.050	χ^2=1.634
3 grade	p=0.369	p=0.562	p=0.652
4 grade			
Smoking status			
Yes	Z=-0.742	Z=-6.295	Z=-1.780
No	p=0.458	p=0.000	p=0.075

Z: Mann-Whitney U; χ^2: Kruskall Wallis; EAT: Eating Attitude Test; APIRS-Alcohol: Addiction Profile Index Risk Screening-alcohol; APIRS-Drug: Addiction Profile Index Risk Screening-drug.

Table 5. Relationship between total scores of EAT, APIRS-Alcohol, APIRS-drug and some characteristics participants

		EAT	APIRS-Drug	APIRS-Alcohol
Age	r_s	-0.022	-0.024	0.052
	p	0.630	0.596	0.261
Number of cigarettes smoked per day (24 hr)	r_s	0.088	0.281*	0.217
	p	0.498	0.027	0.090
APIRS-Alcohol	r_s	0.097*	0.402**	–
	p	0.034	<0.001	–
APIRS-Drug	r_s	0.105*	–	–
	p	0.021	–	–

r_s: Spearman's correlation analysis; *p<0.05; ** p<0.005; EAT: Eating Attitude Test; APIRS-Alcohol: Addiction Profile Index Risk Screening-alcohol; APIRS-Drug: Addiction Profile Index Risk Screening-drug.

concerning substance abuse. Moreover, a positive, statistically significant correlation was determined between the number of cigarettes smoked by the students per day and the total scores of APIRS-Drug (r=0.281; p=0.027). Accordingly, as the number of cigarettes smoked per day increased, the risk concerning substance abuse increased (Table 5).

Discussion

In this study, we investigated the relationship between the eating attitude characteristics of nursing undergraduate students and their alcohol and substance abuse. The findings obtained in this study showed that 8% of the students had a risk of potential eating attitude disorder based on the eating attitude test and showed similarities with other national and international studies in the literature.[7,28,37] Due to the increase in mass media and the ideal body structure offered to individuals for both genders, there are impairments in body perception and thought processes in all societies and at all socioeconomic levels, and the prevalence of eating attitude disorders increase.[38]

According to the study conducted by European School Survey Project on Alcohol and other Drugs (ESPAD),[39] which was conducted in 35 countries in Europe, Turkey is reported to be the country with the least alcohol and substance use among young people. In the present study, 9.2% of the students were at risk for alcohol abuse and 1.9% for substance abuse. Koca and Oguzoncul[40] (2015) determined in their study on university students that 16.9% of the students used alcohol and 2.2% used substances. Oguz et al.'s[41] (2015) study showed that 23.9% of the university students used alcohol, while it was revealed in another study, which was conducted on midwifery students, that 7.1% of the students used alcohol and 1.6% of them used substances.[42] In our study results, the prevalence of alcohol use was lower than the prevalence of alcohol use in the previous studies, and the rates of substance use were similar. Alcohol and substance abuse among young people may be due to the desire to be accepted in the group of friends, show that they have transitioned to adulthood, try to create an independent identity, try different lifestyles and behaviors to cope with the problems or anxiety.[43]

In our study, the findings showed that the high level of income of students increased substance abuse. Similarly, in a study performed on high school students, those with high-income levels had a higher risk of substance abuse than those with low income.[44] The high-income level of parents may pave the way for higher economic competence offered to students and the occurrence of problems, such as alcohol/substance abuse. Gender, age, class, high school from which graduated, family type, and smoking habit were not effective on eating attitudes as well as on alcohol and substance abuse. Similarly, Ünalan et al.'s[1] (2009) study revealed that family structure and smoking did not affect eating disorders.

As the number of cigarettes smoked by students per day increased, the risk in terms of substance abuse also increased. It was revealed in a study that 75.6% of the participants who stated that they had substance use also stated that they smoked.[45] Likewise, Harrell et al.[46] (2012) also revealed a positive correlation between smoking and substance use. It was determined that the higher the risk of alcohol abuse, the higher the risk in terms of substance abuse. Yalcin et al.[47] (2009) found that 19.3% of university students with substance abuse also had alcohol abuse. The correlation between alcohol and substance use was revealed in other studies as well.[48,49]

In this study, it was determined that as eating behavior impaired, the risk in terms of substance abuse increased. Other studies in the literature also support our study results.[2,29,48] It was determined that 24% of the participants with potential eating disorder behavior had alcohol use, while 11% of them had substance use, and 8% of them both alcohol and substance use. A previous study showed that the rate of risky alcohol use in adolescents with malnutrition was 32.6%, and the rate of risky substance use was 16.8%.[50] When we evaluated the participants with potential eating disorders by gender, that alcohol use and/or substance use were more common among females than males. The rate of alcohol use was 24.2% in females, and substance use was 12%, whereas in males the rate of alcohol use was 20%, and none of the males had substance use. Similarly, Root et al.[12] (2010) revealed that 31.8% of females with eating disorder behavior had substance abuse. Gadella and Piran[51] reported a significant correlation between unhealthy eating habits and alcohol use disorders in their meta-analysis study. Ross and Ivis[52] determined that individuals with eating disorders used more alcohol, cannabis, and other substances. They reported that those who had a binge eating habit were drunk more often than adolescents who did not eat and drank more alcohol whenever they used alcohol. Krahn et al.[53] reported that the severity of alcohol use and the negative consequences of alcohol use were correlated with the severity of binge eating behaviors. Conason and Sher[54] revealed that substance use was associated with greater participation in risky behaviors, such as suicide attempts, guilt, and risky sexual behavior among adolescents with bulimia nervosa, although not among adolescents with anorexia nervosa. These results revealed the correlation between eating disorder behaviors and alcohol/substance abuse. However, when the distribution of eating disorder behaviors was compared based on the smoking, alcohol, and substance use habits, no significant difference was found between these habits and eating disorders.[3] The risk of alcohol abuse increased as the potential eating disorder increased in students. When the studies conducted with students in the literature on this subject were examined, the results were consistent with our findings.[29,49,55] They used eating and alcohol/substance use as a defense mechanism to cope with emotional stress. The expectation that the used substance would make them feel better causes more and additional substances to be used with each use.[56] Furthermore, as the reward neurotransmitter dopamine regulates satisfactory and motivating responses to food intake, repeated stimulation of these reward pathways may also cause concurrent eating, alcohol and substance use.[25] At the same time, the tendency towards addictive substances for weight control is increasing in adolescents, which raises the problem of smoking, alcohol, and/or substance use. Initially, smoking is the easiest to gain access to, then alcohol use and subsequently substance use may start.[26]

Conclusion

In conclusion, in the present study, of the university students (n=477), 8.0% are at high risk for eating disorders, while 9.2% of them at high risk for alcohol abuse and 1.9% of them for substance abuse. The risk of eating disorders, alcohol abuse, and substance abuse are correlated with each other. It has been determined that students who are at risk of eating disorders are also at risk concerning alcohol and substance abuse. It is seen that the coexistence of these two diseases in young people with frequent risky behaviors leads to severe complications. Inadequate management of both disorders may lead to increased/recurrence of symptoms and hinder treatment. Identifying the risk groups among young people and making comprehensive assessments should be prioritized for early diagnosis and treatment. Family, school and health professionals should identify deficiencies in nutritional habits, harmful substances used in weight control, and preventing addiction, and it is recommended that training for the determined issues should be planned.

Conflict of interest: There are no relevant conflicts of interest to disclose.

Peer-review: Externally peer-reviewed.

Authorship contributions: Concept – S.Ö., A.İ.; Design – S.Ö., A.İ.; Supervision – S.Ö., A.İ.; Fundings - S.Ö., A.İ.; Materials – S.Ö., A.İ.; Data collection &/or processing – S.Ö., A.İ.; Analysis and/or interpretation – S.Ö., A.İ.; Literature search – S.Ö., A.İ.; Writing – S.Ö., A.İ.; Critical review – S.Ö., A.İ.

References

1. Ünalan D, Öztop DB, Elmalı F, Öztürk A Konak D, Pırlak B, et al. The relationship between the healthy lifestyle behaviors and eating behaviors of a group of health high school students. İnönü Üniversitesi Tıp Fakültesi Dergisi 2009;16:75–81.
2. Anastasiadou D, Parks M, Brugnera A, Sepulveda AR, Graell M. Psychiatric comorbidity and maternal distress among adolescent eating disorder patients: a comparison with substance use disorder patients. Eat Behav 2017;24:74–80.
3. Celik S, Yoldascan EB, Okyay RA, Ozenli Y. Prevalence of eating disorders in female university students and affecting. Anatolian J Psychiatry 2016;17:42–50.
4. Özbaş AA. Beslenme ve Yeme Bozuklukları. In: Gürhan N, editor. Ruh Sağlığı ve Psikiyatri Hemşireliği. Ankara: Nobel Tıp Kitabevleri; 2016. p. 565–90.
5. Ulaş B, Uncu F, Üner S. Prevalence and affecting factors of potential eating disorders among students of health higher education. İnönü Üniversitesi Sağlık Bilimleri Dergisi 2013;2:15–22.
6. Thomas J, Khan S, Abdulrahman AA. Eating attitudes and body image concerns among female university students in the United Arab Emirates. Appetite 2010;54:595–8.
7. Lipson SK, Sonneville KR. Eating disorder symptoms among undergraduate and graduate students at 12 U.S. colleges and universities. Eat Behav 2017;24:81-88.
8. Vardar E, Erzengin M. The prevalence of eating disorders (EDs) and comorbid psychiatric disorders in adolescents: a two-stage communitybased study. Turk J Psychiatry 2011;22:205–12.
9. DSM-V, Diagnostic and Statistical Manual of Mental Disorders. 5th ed., (Translation Editor, Köroğlu E). Washington DC: American Psychiatry Associstion (APA); 2013.
10. Bandini S, Antonelli G, Moretti P, Pampanelli S, Quartesan R, Perriello G. Factors affecting dropout in outpatient eating disorder treatment. Eat Weight Disord 2006;11:179–84.
11. Hudson JI, Hiripi E, Pope HG, Kessler RC. The prevalence and correlates of eating disorders in the national comorbidity survey replication. Biol Psychiatry 2007;61:348–58.
12. Root T, Pinheiro AP, Thornton L, Strober M, Fernandez-Aranda F, Brandt H, et al. Substance use disorders in women with anorexia nervosa. Int J Eat Disord 2010;43:14–21.
13. Dir AL, Karyadi K, Cyders MA. The uniqueness of negative urgency as a common risk factor for self-harm behaviors, alcohol consumption, and eating problems. Addict Behav 2013;38:2158–62.
14. Luce KH, Engler PA, Crowther JH. Eating disorders and alcohol use: group differences in consumption rates and drinking motives. Eat Behav 2007;8:177–84.
15. Hasking PA. Reinforcement sensitivity, coping, disordered eating and drinking behaviour in adolescents. PersIndivid Differ 2006;40:677–88.
16. Ziobrowski H, Brewerton TD, Duncan AE. Associations between ADHD and eating disorders in relation to comorbid psychiatric disorders in a nationally representative sample. Psychiatry Res 2018:260:53–9.
17. Killeen T, Brewerton TD, Campbell A, Cohen LR, Hien DA. Exploring the relationship between eating disorder symptoms and substance use severity in women with comorbid PTSD and substance use disorders. Am J Drug Alcohol Abuse 2015;41:547–52.
18. Bahji A, Mazhar MN, Hudson CC, Nadkarni P, MacNeil BA, Hawken E. Prevalence of substance use disorder comorbidity among individuals with eating disorders: a systematic review and meta-analysis. Psychiatry Res 2019;273:58–66.
19. Malinauskiene V, Malinauskas, R. Lifetime traumatic experiences and disordered eating among university students: the role of posttraumatic stress symptoms. Biomed Res Int 2018;2018:9814358.
20. Corstorphine E, Waller G, Lawson R, Ganis C. Trauma and multi-impulsivity in the eating disorders. Eat Behav 2007;8:23–30.
21. Davis C, Strachan S, Berkson M. Sensitivity to reward: implications for overeating and overweight. Appetite 2004;42:131–8.
22. Kluck AS, Carriere L, Dallesasse S, Bvunzawabaya B, English E, Cobb M, et al. Pathways of family influence: alcohol use and disordered eating in daughters. Addict Behav 2014;39:1404–7.
23. Nokleby H. Comorbid drug use disorders and eating disorders-a review of prevalence studies. Nordic Studies on Alcohol and Drugs 2012;29:303–14.

24. Arabacı LA, Dağlı LA, Taş G. Emotional dysregulation in substance use disorders and role and responsibilities of nurses. Journal of Dependence 2018;19:10–6.
25. Kafes AY, Ülker S, Sayar GH. Food addiction. Curr Addict Res 2018;2:54–8.
26. Gregorowski C, Seedat S, Jordaan GP. A clinical approach to the assessment and management of co-morbid eating disorders and substance use disorders. BMC Psychiatry 2013;13:289.
27. Clement S, Schauman O, Graham T, Maggioni F, Evans-Lacko S, Bezborodovs N, et al. What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. Psychol Med 2015;45:11–27.
28. Usta E, Sağlam E, Şen S, Aygin D, Sert H. Eating attitudes and obsessive-compulsive symptoms of nursing students. Sağlık Bilimleri ve Meslekleri Derg 2015;2:187–97.
29. Mann AP, Accurso EC, Stiles-Shields C, Capra L, Labuschagne Z, Karnik NS, et al. Factors associated with substance use in adolescents with eating disorders. J Adolesc Health 2014;55:182–7.
30. Karaçam Ö, Totan T. Investigation to the use of the addictive substances among the students of Ege University via multidimensional scaling. Anatolian J Psychiatry 2014;15:116–23.
31. Garner DM, Garfinkel PE. The Eating Attitudes Test: an index of the symptoms of anorexia nervosa. Psychol Med 1979;9:273–9.
32. Savaşır I, Erol N. Yeme tutum testi: Anoreksiya nervoza belirtileri indeksi. Psikoloji Dergisi 1989;7:19–25.
33. Ögel K, Koç C, Görücü S. Study on development, validity and reliability of a risk-screening questionnaire for alcohol and drug use. Psychiatry and Clinical Psychopharmacology 2017;27:2,164–72.
34. Tabachnick BG, Fidell LS. The multiple comparison (post-hoc) techniques to determine the difference between groups in researches. Fırat Üniversitesi Sosyal Bilimler Derg 2009;19:51–64.
35. Kayri M. The multiple comparison (post-hoc) techniques to determine the difference between groups in researches. Fırat University Journal of Social Science 2009;19:51–64.
36. Özdamar K. SPSS ile Biyoistatistik. 9th ed., Ankara: Nisan Publishing; 2013.
37. Eisenberg D, Nicklett EJ, Roeder K, Kirz NE. Eating disorder symptoms among college students: prevalence, persistence, correlates and treatment-seeking. J Am Coll Health 2011;59:700–7.
38. Tahiroglu AY, Fırat S, Diler RS, Avcı A. Eating disorders in male children a case of anorexia nervosa. Çocuk Sağlığı ve Hastalıkları Dergisi 2005;48:151–7.
39. The ESPAD Report 2003, Alcohol and Other Drug Use Among Students in 35 European Countries Available from: http://www.espad.org/sites/espad.org/files/The_2003_ESPAD_report.pdf. Accessed on March 12, 2018.
40. Koca B, Oguzoncul AF. The effects of smoking, alcohol, drugs, the factors effectıng drug usage, and social family support to the Students at Health Institution of Higher Education at Inonu University. Kocaeli Tıp Derg 2015;4:4–13.
41. Oguz S, Genc A, Tazel A. The condition of the university students about the alcohol use and awareness of the impact of alcohol on heart health. Adıyaman Üniv Sağlık Bilim Derg 2015;1:65–76.
42. İnanc BB. Ebelik bölümü öğrencilerinde sigara, alkol, madde kullanımını etkileyen faktörler ve aile sosyal desteği. Eur J Fam Med 2015;4:29–35.
43. Arslan HN, Terzi O, Dabak S, Peksen Y. Substance, cigarette and alcohol use among high school students in the provincial center of Samsun, Turkey. Erciyes Med J 2012;34:79–84.
44. Ögel K, Taner S, Eke C, Erol B. İstanbul'da öğrencilerde riskli davranışlar araştırması raporu. İstanbul:Yeniden Yayın no:6; 2005.
45. Atlam DH, Yuncu Z. Relationship between cigarette, alcohol, substance use disorders and familial drug use in university students. J Clin Psy 2017;20:161–70.
46. Harrell PT, Trenz RC, Scherer M, Ropelewski LR, Latimer WW. Cigarette smoking, illicit drug use, and routes of administration among heroin and cocaine users. Addict Behav 2012;37:678–81.
47. Yalcın M, Essizoğlu A, Akkoc H, Yasan A, Gurgen F. Risk factors associated with substance use among Dicle University students. J Clin Psy 2009;12:125–33.
48. Hunt TK, Forbush KT. Is "Drunkorexia" an eating disorder, substance use disorder, or both? Eat Behav 2016;22:40–5.
49. Krug I, Treasure J, Anderluh M, Bellodi L, Cellini E, di Bernardo M, et al. Present and lifetime comorbidity of tobacco, alcohol and drug use in eating disorders: a European multicenter study. Drug Alcohol Depend 2008;1:169–79.
50. Castro-Fornieles J, Díaz R, Goti J, Calvo R, Gonzalez L, Serrano L, et al. Prevalence and factors related to substance use among adolescents with eating disorders. Eur Addict Res 2010;16:61–8.
51. Gadalla T, Piran N. Co-occurrence of eating disorders and alcohol use disorders in women: a meta analysis. Arch Womens Ment Health 2007;10:133–40.
52. Ross HE, Ivis F. Binge eating and substance use among male and female adolescents. Int J Eat Disord 1999;26:245–60.
53. Krahn DD, Kurth CL, Gomberg E, Drewnowski A. Pathological dieting and alcohol use in college women-a continuum of behaviors. Eat Behav 2005;6:43–52.
54. Conason AH, Sher L. Alcohol use in adolescents with eating disorders. Int J Adolesc Med Health 2006;18:31–6.
55. Mikheeva OV, Tragesser SL. Personality features, disordered eating, and alcohol use among college students: A latent profile analysis. Pers Individ differ 2016;94:360–5.
56. Özgür M, Uçar A. Assessment of food addiction and night eating syndrome in university students living in Ankara. Ankara Sağlık Bilimleri Derg 2018;7:10–21.