ORIGINAL RESEARCH

Psychosocial Health Levels and Substance Use Frequency of Intern Students Studying Health Sciences in Turkey

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Main Points

- The psychosocial health levels of the students were at an acceptable level.
- One in five students were at risk group for psychosocial health and substance use.
- It was determined that factors such as gender, department, acadmic success, difficulty in classes, and post-graduation anxiety affected psychosocial health status and substance use of the students.

Abstract

This study was conducted to determine the psychosocial health levels, substance use frequency, and factors affecting the students in the faculty of health sciences. A total of 681 senior year students studying in the faculty of health sciences in Sivas Cumhuriyet University between March 20 and April 15, 2018 were included in this descriptive and cross-sectional study, which constituted 86.4% of the students at the university. Data were collected using student identification form, depression anxiety stress scale, and substance use information form. Student t, Mann-Whitney U, Chi-squared, and Kruskal-Wallis tests, ANOVA, and Pearson correlation analysis were used for statistical evaluation. It was determined that 16.9% of the students used substances such as cigarettes, alcohol, narcotic drugs, and heroin/hashish during internship. The depression and stress levels were found to be normal, and the anxiety levels were mild according to the students' depression, anxiety and stress scale mean scores; 14.2% of the students had severe depression, 20.9% had severe anxiety, and 9.4% had severe stress. Depression, anxiety, and stress levels of students who used substances were found to be higher. The students preferred smoking, alcohol, and substance use as a coping method due to the psychosocial problems.
Keywords: Anxiety, depression, health sciences, student, substance

Introduction

Intern students who study in the faculty of health sciences are future health professionals (Steyl & Phillips, 2011). These students may experience more psychosocial health problems than those who study in other faculties (engineering, education, etc.) because of their intensive curriculum, obligatory class attendance, participation in clinical practice (very intensive clinical training), as well as constantly dealing with people's health conditions and care (Mannapur et al., 2010; Sreeramareddy et al., 2007). In addition, senior students who are one step away from starting their profession may face psychosocial health problems owing to lack of professionalism, future anxiety, and anxiety about finding a job (Canbaz et al., 2007). Psychosocial problems and complaints can negatively affect life (Ilhan et al., 2014), reduce academic success (Ibrahim & Abdelreheem, 2014; Sreeramareddy et al., 2007), and impair professional development (Madebo, Yosef, & Tesfaye, 2016), and these are not immediately noticed by students themselves and by their educators.

The psychosocial problems encountered in addition to the complexity of puberty during the university years might lead students to use substances such

as cigarettes, alcohol, and heroin as a method of coping (Atlam & Yuncu, 2017; Madebo, Yosef, & Tesfaye, 2016). Students may start to use substance for various reasons such as to resemble adults, belong to a group, be accepted, interact easily in social settings, and for recreation (Atlam & Yuncu, 2017; Turhan, Inandi, Ozer, & Akoglu, 2011). While it has been reported that the use of substances such as cigarettes, alcohol, amphetamines, heroin, and cocaine was found to be widespread among university students in some studies (Dhanookdhary et al., 2010; Osman et al., 2016); in other studies, it has been reported that there was a negative relationship between students' psychosocial health status and addiction to smoking, alcohol, and drugs (Ilhan, Bahadirli, & Toptaner, 2014; Okasaka, Morita, Nakatani, & Fujisawa, 2008; Tavolacci et al., 2013; Yazici & Ak, 2008).

Students studying in health sciences can have an influence on the health and behaviors of other students and individuals by creating behavioral patterns for people. In this context, intern students should be well aware of the consequences of having risky health behaviors (Steyl & Phillips, 2011). It is thought that this study will contribute to health professionals and the literature by presenting psychosocial aspects of students' health status and their substance use-related health behaviors, and by helping the detection of at-risk students and health-threatening factors.

Methods

Purpose
The study was conducted descriptively and cross-sectionally to determine the psychosocial health levels, substance use frequency, affecting factors, and to identify risky student profile of senior intern students who study health sciences.

Population and Sample
The population of the study consisted of 788 senior students studying in the school of health sciences at Sivas Cumhuriyet University between March 20 and April 15, 2018 (260 students in the department of nursing (32.9%), 73 students in the department of midwifery (9.2%), 112 students in the department of health administration (14.2%), 88 students in the department of dentistry (11.3%), 220 students in the department of medicine (27.9%), and 35 students in the department of pharmacy (4.5%)). A total of 681 students (all of them were senior students: 4th grade students of midwifery, nursing, and health management departments; 5th grade students of dentistry and pharmacy faculties; 6th grade students of medicine) who were selected with improbable sampling method, who were students at the time of research, who accepted to participate in the study, and who filled out data collection forms completely created the sample of this study (nursing 248, midwifery 68, health administration 108, dentistry 59, medicine 172, and pharmacy 26). Excluded from this study were nursing 12, midwifery 5, health administration 4, dentistry 29, medicine 48, and pharmacy departments 9 students. The participation rate was 86.4%.

Data Collection Tools
Data were collected with student identification form; Depression Anxiety Stress Scale (DASS); and substance use information form.

Student Identification Form: There were 12 questions in this form questioning the sociodemographic and academic characteristics of the students, such as age, gender, department, income status, academic success, and general health assessment.

DASS: This scale was designed by Lovibond and Lovibond in 1995, and the Turkish validity and reliability study was conducted by Akin and Cetin (2007). The scale consists of 42 items, of which 14 relate to depression, 14 to anxiety, and 14 to stress. The depression items (3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, 42) measure the level of dissatisfaction, helplessness, worthlessness, loss of interest, and low energy level. Anxiety items (2, 4, 7, 9, 15, 19, 20, 23, 25, 28, 30, 36, 40, 41) measure the level of autonomic arousal, situational anxiety, subjective anxiety, and muscle response level. Stress items (1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39) measure the level of difficulty in relaxation, nerve stimulation, easy distress and boredom, discomfort, overreaction, and intolerance. The scale is a four-point Likert-type scale with items ranging from 0 to 3 (0=does not apply to me at all, 1=applies to me to some degree or for some of the time, 2=applies to me to a considerable degree or for a good part of time, 3=applies to me very much or most of the time). The total scores of the scale range from 0 to 42 for each subscale. Depression, anxiety, and stress scores in the scale are interpreted in five categories as normal, mild, moderate, severe, and extremely severe. In terms of depression, 0 to 9 points are considered to be normal, 10 to 13 points mild, 14 to 20 points moderate, 21 to 27 points severe, and 28 and above points extremely severe. In terms of anxiety, 0 to 7 points are considered to be normal, 8 to 9 points mild, 10 to 14 points moderate, 15 to 19 points severe, and 20 and above points extremely severe. In terms of stress, 0 to 14 points are considered to be normal, 15 to 18 points mild, 19 to 25 points moderate, 26 to 33 points severe, and 34 and above points extremely severe (Akin & Cetin, 2007). In the study, the Cronbach's alpha value of the scale was 0.96.

Substance Use Information Form: This form contains six questions that identify the substances that the students used at the beginning of the university, the desire to quit substance use, etc. The form was filled by 20 students who were studying in the department of nursing before the research, and feedbacks were received to verify if the questions were correctly understood.

Data Collection
Verbal and written consents were obtained by informing students about the purpose and importance of the study before data collection. It was also stated that anyone who wished to leave the research could do so. Data collection forms were given to students in one class hour, and they were scattered and collected under observation. After the students filled out the data collection forms individually, they handed them over to the researchers. Filling the data forms took approximately 15-20 min.

Statistical Analysis
The data were interpreted in the Statistical Package for Social Sciences version 22.0 (IBM SPSS Corp.; Armonk, NY, USA) package program. The suitability of normal distribution of the data was tested by the Kolmogorov-Smirnov test. Pearson correlation analysis was used in the examination of the relationship between DASS mean scores and age. Student t test, Mann-Whitney U test, one way ANOVA, and Kruskal-Wallis test were used to compare the parameters related to gender, academic success, difficulty

in classes, and substance use. In examining the relationship between some sociodemographic and academic characteristics of students and substance use, the chi-squared test (Fisher's exact Chi-squared test when any of the eyes is smaller than 5) was used. Statistical significance was assessed as p <0.05.

Ethical Consideration

Written permission was obtained from Cumhuriyet University Non-interventional Clinical Research Ethics Committee (decision no: 2018-02/48). The study was conducted in accordance with the ethical standards of the Helsinki declaration.

Results

The mean age of the participants was 22.99±2.01 years, and 79.9% of them were females; 36.4% of the students were studying nursing, 25.3% medicine, 15.8% health management, 10% midwifery, 8.7% dentistry, and 3.8% pharmacy. 69.5% of the students did not choose their department willingly, and 25.6% expressed their academic success as good, 69.6% as moderate, 52.7% stated that they had difficulties in classes during the university, and 86% had post-graduation anxiety.

When depression, anxiety, and stress scores of the students were examined, depression (9.34±9.19) and stress (13.35±8.78) levels were found to be normal, and anxiety levels (8.83±8.17) were found to be mild. In addition, 14.2% of the students had severe and extremely severe depression, 20.9% had severe and extremely severe anxiety, and 9.4% had severe and extremely severe stress (Table 1).

In Table 2, a very weak positive relationship was found between age and depression, anxiety and stress levels, and depression and stress levels were significantly higher in females than males (p<0.05). Depression, anxiety, and stress levels of the students studying pharmacy were higher than those studying health administration (p<0.05). Students who did not choose their department willingly had higher stress levels, the students who perceived their academic success as below average had higher anxiety and stress levels, and students who had difficulty in the classes and used substances had higher levels of depression, anxiety, and stress (p<0.05). Moreover, depression and anxiety levels of the students who had post-graduation anxiety were much higher than those of the students who did not have post-graduation anxiety (p<0.05).

It was determined that 18.4% of the students used substances such as cigarettes, alcohol, narcotic drugs, and heroin/hashish when they started their university education, and 16.9% of them use such substances presently. Further, 13.4% of the students used substances such as cigarette when they first started university, and 11.5% used them presently; 7.5% of the students stated that they started to use substances because of their individual problems, 5.3% of them because they wanted to emulate their peers, and 4.1% them because they enjoyed it when they first started university. It was determined that 53% of the participants had a family member using cigarettes and alcohol, and 2.8% had a family member and close relatives using drugs. Of the students using the substances, 74.8% stated that they wanted to stop using the substance (Table 3).

Table 4 shows substance use conditions of students and comparison of the mean scores of DASS. Accordingly, it was determined that depression, anxiety, and stress levels were higher among students using substances (p<0.05).

Substance use rates of male students studying medicine, who evaluated their academic success as below average, who sometimes had difficulty in classes, and who had post-graduation anxiety were found to be higher (p<0.05) (Table 5).

Discussion

A university is an environment where young people live independently and for the first time, direct parental supervision is absent. However, this freedom can bring about some stressors, including responsibilities to sustain daily life and risky health behaviors to deal with these stressors (Steyl & Phillips, 2011). In this study, the psychosocial health status, substance use status, and the factors affecting the students who are to provide health services soon have been evaluated and the findings discussed in the light of the literature.

Psychosocial Health Levels of Intern University Students Studying Health Sciences

It was determined that depression and stress levels of the students in the study were normal, their anxiety levels were mild. In other studies, psychosocial health problems were found to be common among students studying in the faculty of health sciences (Ilhan, Bahadirli, & Toptaner, 2014; Madebo, Yosef, & Tesfaye, 2016; Racic et al., 2017).

Table 1.
Distribution of Depression, Anxiety, Stress Scale Mean Scores

DASS	Depression	Anxiety	Stress
Min-max score possible	0-42	0-42	0-42
Min-max score taken	0-41	0-41	0-41
Mean±SS	9.34±9.19	8.83±8.17	13.35±8.78
	n (%)	**n (%)**	**n (%)**
Normal	422 (62.0)	372 (54.6)	397 (58.4)
Mild	84 (12.2)	63 (9.3)	94 (14.1)
Moderate	78 (11.6)	104 (15.2)	121 (18.1)
Severe	55 (8.0)	53 (7.8)	46 (6.6)
Extremely severe	42 (6.2)	89 (13.1)	23 (2.8)

Table 2.
Distribution of Some Characteristics of Students and Mean Scores of Depression, Anxiety, and Stress Scale

Characteristics	n	%	Depression	Anxiety	Stress
Age (Mean±SD) (year)	22.99±2.01				
Test			r=0.171*	r=0.204*	r=0.128*
Gender					
Female	544	79.9	9.71±9.24	9.05±8.07	13.71±8.78
Male	137	20.1	7.87±8.89	7.94±8.54	11.93±8.66
Test			t=2.092* Cohen's d=0.200	t=1.421 Cohen's d=0.130	t=2.123* Cohen's d=0.204
Department					
Medicine	172	25.3	11.18±10.23	9.70±9.01	14.52±9.13
Dentistry	59	8.7	11.47±11.55	10.96±11.21	15.96±10.68
Pharmacy	26	3.8	12.53±9.41	11.84±8.03	16.11±8.46
Nursing	248	36.4	8.29±7.35	8.40±6.81	12.22±7.37
Midwifery	68	10.0	8.66±9.06	7.91±7.52	13.17±8.23
Health Administration	108	15.9	7.32±9.14	7.12±7.70	12.09±9.91
Test			KW=20.551* η^2=0.032	KW=13.507* η^2=0.023	KW=15.917* η^2=0.025
Choosing the department willingly					
Yes	208	30.5	8.55±8.80	8.38±8.52	12.14±8.67
No	473	69.5	9.68±9.35	9.03±8.02	13.88±8.79
Test			t=-1.486 Cohen's d=0.124	t=-0.944 Cohen's d=0.078	t=-2.384* Cohen's d=0.199
Academic success					
Above average aaveraaverage	174	25.6	8.04±8.56	8.02±8.51	11.51±8.46
Average	474	69.6	9.69±9.44	8.81±7.93	13.90±8.80
Below average	33	4.8	11.12±8.33	13.39±8.48	15.21±8.96
Test			F=2.704 η^2=0.008	F=6.064* η^2=0.018	F=5.530* η^2=0.016
Having difficulty in classes					
Yes	359	52.7	11.20±9.99	10.36±8.98	15.31±9.27
Sometimes	269	7.8	7.33±7.92	8.13±7.61	11.56±7.58
No	53	39.5	6.88±6.69	6.93±6.61	9.20±7.76
Test			F=16.394* η^2=0.046	F=14.290* η^2=0.040	F=21.653* η^2=0.060
Post-graduation anxiety					
Yes	586	86.0	12.78±10.36	12.13±10.06	15.14±9.53
No	95	14.0	8.78±8.88	8.30±7.70	13.02±8.68
Test			Z=3.728* η^2=0.142	Z=3.599* η^2=0.137	Z=1.862 η^2=0.071

SD: standard deviation r: Pearson correlation analysis, t: Student t test, Z: Mann-Whitney U test, F: One-way ANOVA, KW: Kruskal – Wallis test, *p<0.05

Variables Affecting the Psychosocial Health Levels of Intern University Students Studying Health Sciences

It has been determined that the department affects psychosocial health level of the students. Psychosocial health levels of the students studying in the department of pharmacy were lower and those studying in the department of health administration were higher than those studying in the departments of medicine, dentistry, nursing, and midwifery. The stress level of medical students was found to be higher in studies conducted with students who studied in medicine, dentistry, and nursing departments (Ibrahim & Abdelreheem, 2014; Mannapur et al., 2010; Racic et al., 2017). Time pressure, excessive information overload, excessive working time, and the necessity of learning the information completely were among the reasons for high stress levels in medical students (Oncu et al., 2013). The low level of psychosocial health of the students in the pharmacy department may be owing to the limited

Table 3.
Distribution of Students' Substance Use (n=681)

Characteristics		n	%
Substance use before joining the university			
	Yes	125	18.4
	Cigarette	91	13.4
	Alcohol	18	2.6
	Narcotic Drug	10	1.5
	Heroin/hashish	6	0.9
	None	556	81.6
Started using substance after joining the university			
	Yes	115	16.9
	Cigarette	78	11.5
	Narcotic drug	17	2.5
	Alcohol	12	1.8
	Heroin/hashish	6	0.8
	Hookah	2	0.3
	None	566	83.1
*Reason for using substance when started university			
	Individual problems	51	7.5
	Emulation	36	5.3
	For pleasure	28	4.1
	Desire for a friend	14	2.1
	Family longing	11	1.6
	Difficulty of classes	8	1.2
	Attitudes of lecturers	8	1.2
	Financial problems	5	0.7
Presence of individuals using cigarettes and alcohol in the family			
	Yes	361	53.0
	No	320	47.0
Presence of individuals using drugs in the family or close relatives			
	Yes	19	2.8
	No	662	97.2
Desire to stop using substance**			
	Yes	86	74.8
	No	29	25.2

* Number n has changed since more than one choice is made, **n=115

Table 4.
Distribution of Students' Substance Use and Mean Scores of Depression Anxiety Stress Scale

Substance use	n	%	Depression	Anxiety	Stress	
Yes	115	16.9	12.89±10.11	11.80±9.69	14.95±9.14	
No	566	83.1	8.62±8.83	8.23±7.71	13.02±8.68	
Test				t=4.611* Cohen's d=0.449	t=4.332* Cohen's d=0.407	t=2.184* Cohen's d=0.216

*p<0.05

number of students studying in this department. The high level of psychosocial health of the students in the health administration department may be due to not taking primary responsibility about human health and not practicing in the clinic.

Table 5.
Distribution of Some Characteristics and Substance Use of Students

Characteristics	Substance Use	Yes	No	
Gender		n (%)	n (%)	Test
	Female	73 (13.4)	471 (86.6)	X^2=23.170*
	Male	42 (30.7)	95 (69.3)	
Department				
	Medicine	35 (20.3)	137 (79.7)	X^2=12.377*
	Dentistry	10 (16.9)	49 (83.1)	
	Pharmacy	5 (19.2)	21 (80.8)	
	Nursing	49 (19.8)	199 (80.2)	
	Midwifery	3 (4.4)	65 (95.6)	
	Health Administration	13 (12.0)	95 (88.8)	
Choosing the department willingly				
	Yes	32 (15.4)	176 (84.6)	X^2=0.482
	No	83 (17.5)	390 (82.5)	
Academic success				
	Above average	25 (14.4)	149 (85.6)	X^2=29.726*
	Average	73 (15.4)	401 (84.6)	
	Below average	17 (51.5)	16 (48.5)	
Having difficulty in classes				
	Yes	64 (17.8)	295 (82.2)	X^2=12.395*
	Sometimes	17 (32.1)	36 (67.9)	
	No	34 (12.6)	235 (87.4)	
Post-graduation anxiety				
	Yes	95 (100)	0 (0.0)	X^2=5.434*
	No	20 (3.4)	566 (96.6)	
Presence of individuals using cigarettes and alcohol in the family				
	Yes	68 (18.8)	293 (81.2)	X^2=2.081
	No	47 (14.7)	273 (85.3)	

Fisher's exact Chi-squared test, Chi-squared test, *$p<0.05$

Academic factors were perceived by students as a threat to psychosocial health (Balapala & Indla, 2017). In the study, academic failure and difficulty in classes affected psychosocial health of the students adversely. In the studies conducted, students who studied in health sciences were found to experience stress due to academic factors rather than physical, emotional, and social factors (Balapala & Indla, 2017; Othman, Farooquia, Yusoff, & Adawiyah, 2013). A study found that the academic performance variables were related to the perceived stress level, and the students with high stress level had low academic performance (Madebo et al., 2016). The intensity of the clinical practice of intern students studying in health sciences may have affected the study findings.

Post-graduation anxiety affected psychosocial health levels negatively. In a study conducted with senior intern students in Turkey, students studying in the faculty of health sciences had higher post-graduation anxiety than students in other faculties (Aslan, 2015). The findings of this study show that psychosocial health level is significantly affected by future anxiety and unemployment worries.

Substance Use Frequency of Intern University Students Studying in Health Sciences

It is stated that substance use problem can be observed commonly among health professionals and students studying in health related departments due to their proximity to drugs (Deressa & Azazh, 2011). It was found that 13.4% of the students in the study used substances such as cigarettes when they first started university, and 11.5% of them still used this substance now. The high level of substance abuse in students when they first come to the university may be due to reasons such as being separated from the family, being independent, and emulation of their friends. In studies conducted, the frequency of substance use in students studying in health sciences was found to be 24.6-45.5% (Hagos, Asfeha, & Berihu, 2016; Meressa, Mossie, & Gelaw, 2009; Osman et al., 2016; Whitehorne, Mitchell, Abel, & Harrison, 2015). In another study conducted with health sciences students, it was deter-

mined that about one quarter of the students smoked cigarettes, half of them used alcohol, and 17% used drugs in the last 30 days (Steyl & Phillips, 2011). In a study conducted in North India, it was determined that almost one in five students abused substances, and substance use rate was higher among senior students, and the most common cause of substance use was psychological stress and special day celebrations (Arora et al., 2016). This study shows that even though the substance use rates among students are not as high as in other countries, they are still significant. This finding suggests that the awareness about the adverse effects of smoking, alcohol, and substance use in the faculty of health sciences needs to be further increased.

Variables Affecting Substance Use Among Intern University Students Studying Health Sciences

There are many risk factors (school, social, and environmental factors, etc.) that cause students to start using substances (Turhan, Inandi, Ozer, & Akoglu, 2011). Substance use rates of male students were found to be higher in this study. Similar findings were obtained from other studies (Atlam & Yuncu, 2017; Deressa & Azazh, 2011; Hagos, Asfeha, & Berihu, 2016; Meressa, Mossie, & Gelaw, 2009; Yalcin, Essizoglu, Akkoc, Yasan, & Gürgen, 2009). The low substance use in women may be related to less tolerance to cigarettes, alcohol, and drug use by women in the social structure of Turkey and to the roles ascribed to women in protection of ethical values (Atlam & Yuncu, 2017).

Substance use rates of students studying in medicine were higher in the study. Similar findings have been obtained in studies conducted with students studying in the medicine department (Atlam & Yuncu, 2017; Meressa, Mossie, & Gelaw, 2009). This study finding shows the necessity of examining the causes of substance use among medical students.

Substance use rates of students who perceived their academic success as below average and sometimes had difficulty in classes were higher. The findings of this study are in parallel with the literature (Hagos, Asfeha, & Berihu, 2016; Meressa, Mossie, & Gelaw, 2009; Yalcin, Essizoglu, Akkoc, Yasan, & Gurgen, 2009).

The Relationship Between Psychosocial Health Levels and Substance Use Behaviors of Intern University Students Studying Health Sciences

The association of substance use with high anxiety level and anxiety disorder is common (Turhan, Inandi, Ozer, & Akoglu, 2011). It is reported in the literature that substance use is a risk factor for academic failure, suicide attempts, and depressive disorder (Yalcin, Essizoglu, Akkoc, Yasan, & Gurgen, 2009). Psychosocial health status of students who use substance was found to be low. In the studies conducted with students studying health sciences, it was found that high stress levels increased the substance use rate (Madebo, Yosef, & Tesfaye, 2016; Mannapur et al., 2010). In some studies, there was an inverse relationship between substance use and psychosocial health (Ilhan, Bahadirli, & Toptaner, 2014; Okasaka, Morita, Nakatani, & Fujisawa, 2008; Sreeramareddy et al., 2007; Tavolacci et al., 2013; Yazici & Ak, 2008), or there was no significant relationship between them (Oncu et al., 2013).

Limitations and Directions for Future Research

One important limitation of this study is that the results cannot be generalized to a wider population because the study was conducted with a single university's students, with senior students who study in health sciences, who applied for a certain period of time, and agreed to participate in the study. Furthermore, information on psychosocial health level and substance use was based on self-report by the students.

In conclusion, although the psychosocial health levels of the students were at an acceptable level, almost one in five students were at risk for psychosocial health issues and substance abuse. It was determined that factors such as gender, department, academic success, difficulty in classes, and post-graduation anxiety affected the psychosocial health status and substance use of the students. In this context, getting support through psychological counseling and from guidance units, creating health promoting programs, promoting active participation of students who use substances and are in at-risk groups for psychosocial health problems, providing education to students on substance addiction and coping with stress regularly every year from the time they join the university till they graduate, and arranging adaptation programs to graduation are recommended.

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