

Examination of substance-use and its psychological signs among the spes students

Engin Gezer

Mustafa Kemal University, School of Physical Education and Sports, Hatay, Turkey.
gezerengin@gmail.com

Abstract: The study was descriptively undertaken in order to discover the psychological signs of substance-use among the students who studied at the schools of physical education and sports and to determine whether or not there was a significant difference between substance-use and psychological signs. The sample of the study was composed of 273 students (106 female students and 167 male students) who studied at the Schools of Physical Education and Sports of Mustafa Kemal University and whose mean age was 21.93 ± 1.88 . The psychological signs were measured using Brief Symptom Inventory (BSI) which was developed by Derogatis and the validity and reliability tests of which were made by Şahin and Durak. The analyses of the data were performed with percentage calculations, frequency analyses and Mann Whitney-U test. As the result of the study, there were statistically significant differences between smoking, volatile substance-use and narcotic substance-use, and psychological signs among the students. It was found out that BSI subscale scores of the students who smoked and used volatile substance and narcotic substance were significantly higher than those who did not smoke and use volatile substance and narcotic substance. As for alcohol use, there was no difference among the students.

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1. Introduction

In the general sense, dependency may be described as being under an influence created by an irrepressible hunger for an object, person or thing or as being under the control of a different power and reflects a pathological behavior related with human's mental activity. Although dependency damages people's psychological and physical health or social lives; it is a condition in which people experience an uncontrollable desire and hunger to repeat and to continue the obsessive situation. When we talk about dependency; a dependency for chemical or herbal substances, which are also called drugs, come into mind (3).

Use of addictive substances is regarded as a serious health problem in the world. Substance-use has more and more been increasing particularly among the developing countries despite some measures taken (4,5). The researches on substance-use in other countries and in Turkey focus mainly on primary school education period and high school education period (5). Yet, substance-use is also a serious problem in higher education (university education) in terms of public health and educational life (6).

Adolescence is a potentially risky period of crisis during the growth. When adolescents, who are occupied with identity development process and experience heavy inner conflicts, face with a risk factor; they develop health problems. Members of adolescence period carry risks or a combination of risk factors and therefore, it is thought that they need help more compared to other people (7). That the age of

substance-use starts generally with youth makes it a problem of youth age, too (8). Adolescents are an important risk group for the start of substance use (9).

The studies indicate that young people start substance-use for various reasons such as to enjoy, to answer social and emotional needs, to move away from the problems, to seek for adventure or to challenge (10).

Smoking is the most common and the most important type of substance dependency because it is easy to obtain, is legal to use and is the transition substance regarding substance dependency such as heroin, cocaine, alcohol and cannabis (11). Smoking is a crucial problem not only for our country but also other countries. Today, 1.1 billion people smoke in the world and it is estimated the number of the smokers will have exceeded 1.6 billion (12).

Universities play a key role in educating human power of a country which is the determinant of development level of that country (13). -With the end of adolescence-; university period, which becomes a step between taking responsibility for social life and reaching independence, is described as a physical, psychological and social maturity period, too (14).

Students who start university education in a new city suddenly find themselves in a different academic, economic, cultural and social setting. This new lifestyle is different from the past lifestyle in terms of educational experiences, human relations and social life and students –in this foreign place- are obliged to take their individual life responsibilities on their own (15).

During this transition period; some students develop effective coping skills against the problems faced while other cannot meet the needs and demands created by the new developmental roles in this new setting and may experience some problems during the adaptation period to university life. The young individuals who cannot cope with the problems may undergo some behavioral disorders such as depression and general anxiety, academic failure and problems in interpersonal relations and social adaptation (16). When these above mentioned problems and the knowledge that psychiatric problems generally start during adolescence period are together taken into consideration; it may be argued that university students constitute an important risk group for psychological disorders (17, 18).

University education aims at not only providing the students with professional qualities and skills but also training young individuals who become satisfied with themselves, their life roles and social relations; find the life meaningful, produce ideas, have missions and are productive and healthy (19). Education given to those who have psychological problems will not be effective enough and thus it will be difficult for the individuals with poor educational level to be efficient in their profession and society (20).

The age to start substance has been decreasing and substance-use, which has increasingly been spreading in our country and in the world, has been turning into a crucial problem. It is emphasized that sports keep people away from bad habits and are both physiologically and psychologically important in the society. Although there are many researches conducted among different student groups and university students; we are of the opinion that the present study is important because there is not enough number of researches conducted on SPES students. As a conclusion; the study aimed at investigating the correlation between psychological signs and dependence levels among the students who received sports education.

2. Material and Method

2.1. Research Model

The study was conducted in a descriptive model. Qualitative research approach was employed.

2.2. Population and Sample

The population of the study was composed of the students who studied at the schools of physical education and sports at state universities in Turkey.

The sample of the study was consisted of 273 students (106 female students and 167 male students) who studied at the Schools of Physical Education and Sports of Mustafa Kemal University and whose mean age was 21.93 ± 1.88 .

2.3. Data Collection Tool

The data collection tool was composed of two parts: The first part "Identity Information Form" included the questions about the students' personal information and smoking habit, alcohol-use, volatile substance-use and narcotic substance-use. The second part included "Brief Symptom Inventory (BSI)" used to measure psychological signs of the students.

2.3.1. The Scales used

2.3.1.1. Personal Information Form

The form, which was designed by the researcher, included personal information such about gender, class, the place where the students had lived before the university, parental status, income level of the family, the place where the family lived currently, whether or not parents were employed, students' income and their hobbies.

Also, the questions that addressed dependency – namely, the basic aim of the study- were included in this form. The dependency status of the students was interpreted according to the answers given to the questions which were asked to the students. The answers given to the questions about smoking habit, alcohol-use, volatile substance-use and narcotic substance-use were interpreted that they used that substance. The questions asked were as follows:

1. –Even if just for once- did you try smoking, alcohol, volatile substance and narcotic substance at any period of your life -?
2. Now, do you still smoke, drink alcohol, use volatile substance or narcotic substance?

Any students who answered yes to both of the questions above were accepted as a smoker, alcohol, volatile substance and narcotic substance abusers.

2.3.1.2. Brief Symptom Inventory-BSI

Brief Symptom Inventory-BSI which was developed by Derogatis and the validity and reliability tests of which were made by Şahin and Durak was used in order to measure the psychological signs of the students of the School of Physical Education and Sports (1, 2).

Brief Symptom Inventory-BSI was invented from Symptom Check List (SCL-90) which can measure the psychological signs of the students in a reliable and valid way and is the short form of Symptom Check List_90. It includes various aspects of self-measurement scales.

BSI is a five point rating scale with 53 questions in which individuals' different psychological signs are described and measured. Subjects who answer the 53 questions mark one of the options "(0) Never, (1) a little, (3) somewhat, (4) much and (5) very much". Each item/question is scored between 0 and 4

according to whether or not the students have psychological signs and according to the option the students mark if any. The BSI subscales are as follows: hostility, somatization, depression, anxiety and interpersonal sensitivity. There is a grading key for each subscale according to the item number of the subscales. With the grading key, the students mark each question of the subscales between 0 and 4 and thus, the score of the subscale is obtained.

“Anxiety” includes such symptoms and behaviors as restlessness, fear, anxiety, tension, nervousness, panic, nausea, diarrhea, urinary frequency, feeling of short of breath, sweating, frequent breath and is composed of 13 items.

“Depression” includes such symptoms and behaviors as worry, pessimism, loneliness, unhappiness, negative feelings about the self, suicide tendency, loss of interest and uncertainty and is composed of 12 items.

“Interpersonal sensitivity” includes such symptoms and behaviors as personal inadequacy and inferiority and self deprecation, guilt and is composed of 12 items.

“Somatization” includes many relapsing somatic complaints not due to the any physical disorder such as faint, aches and pains in chest and abdomen, short of breath, nausea, dizziness and is composed of 9 items.

“Hostility” includes such symptoms as nervousness and tension, annoyance, lack of confidence, irritability, urges to beat and to harm someone, to break things, frequent arguments and uncontrollable outburst of temper and is composed of 7 items.

2.4. Data Collection

The questionnaire forms were distributed by the researcher to the students and they filled in the forms.

23 forms were not evaluated because they were incorrectly filled in or there were missing answers.

2.5. Data Analysis

Statistical analyses of the data obtained were performed using Portable IBM SPSS Statistics v19 program. Minimum and maximum values of the mean scores obtained from the BSI subscales were presented in tables.

Cronbach Alpha internal consistency coefficients of the Brief Symptom Inventory Subscales were 0.88 for Depression, 0.90 for Anxiety, 0.90 for Interpersonal Sensitivity, 0.82 for Somatization and 0.77 for Hostility.

The results of the inventory were similar to the results of Turkish form of the inventory. In the validity and reliability tests performed by Şahin and Durak (1994); Cronbach Alpha internal consistency coefficients of the Brief Symptom Inventory Subscales were 0.85 for Depression, 0.81 for Anxiety, 0.80 for Interpersonal Sensitivity, 0.71 for Somatization and 0.72 for Hostility (2).

Kolmogorov-Smirnov and Shapiro-Wilk tests were employed to test whether or not scores obtained from the inventory followed a normal distribution before the statistical analyses of the data were initiated and it was found out that observation values did not follow a normal distribution.

Because the data did not follow a normal distribution; one of the non-parametric tests -Mann Whitney U-Test- was used in order to discover whether or not there was a significant difference in the subscale scores in terms of smoking, alcohol-use, volatile substance-use and narcotic substance-use.

3. Findings

The results are shown in Table. 1-5.

Table 1. Distribution of Mean Scores Obtained by SPES students form BSI subscales

	N	Minimum	Maximum	Mean	Std. Deviation
Depression	273	0,00	43,00	11,5421	8,85499
Anxiety	273	0,00	48,00	11,4799	9,41216
Negative Self Concept	273	0,00	43,00	10,2051	8,95342
Somatization	273	0,00	31,00	7,3297	6,01051
Hostility	273	0,00	26,00	6,1978	4,75863
Severity Index	263	1,00	3,50	1,6060	0,53939
Distress Index	273	0,00	3,38	0,8822	0,66389
Symptom Total Index	273	0,00	53,00	27,4322	15,60790

BSI: Brief Symptom Inventory, SPES: School of Physical Education and Sports.

Table 2. Mann Whitney U-Test used to discover whether or not SPES students' subscale scores differed in terms of "smoking".

	Sigara	N	Mean Rank	Sum of Ranks	U	P
Depresyon	Yes	65	150,54	9785,00	5880,00	0,113
	No	208	132,77	27616,00		
	Total	273				
Anksiyete	Yes	65	152,56	9916,50	5748,50	0,068
	No	208	132,14	27484,50		
	Total	273				
Olumsuz Benlik	Yes	65	145,22	9439,50	6225,500	0,335
	No	208	134,43	27961,50		
	Total	273				
Somatizasyon	Yes	65	148,78	9671,00	5994,000	0,167
	No	208	133,32	27730,00		
	Total	273				
Hostilite	Yes	65	140,03	9102,00	6563,000	0,722
	No	208	136,05	28299,00		
	Total	273				
Semptom Rahatsızlık İndeksi	Yes	64	152,57	9764,50	5051,500	0,013*
	No	199	125,38	24951,50		
	Total	263				
Rahatsızlık İndeksi	Yes	65	150,71	9796,00	5869,000	0,109
	No	208	132,72	27605,00		
	Total	273				
Belirti Toplam İndeksi	Yes	65	139,95	9096,50	6568,500	0,730
	No	208	136,08	28304,50		
	Total	273				

*P<0.05, BSI: Brief Symptom Inventory, SPES: School of Physical Education and Sports.

Table 3 Mann Whitney U-Test used to discover whether or not SPES students' subscale scores differed in terms of "alcohol-use".

	Alkol	N	Mean Rank	Sum of Ranks	U	P
Depresyon	Yes	77	151,78	11687,00	6408,000	0,052
	No	196	131,19	25714,00		
	Total	273				
Anksiyete	Yes	77	145,15	11176,50	6918,500	0,285
	No	196	133,80	26224,50		
	Total	273				
Olumsuz Benlik	Yes	77	144,81	11150,50	6944,500	0,305
	No	196	133,93	26250,50		
	Total	273				
Somatizasyon	Yes	77	140,27	10800,50	7294,500	0,668
	No	196	135,72	26600,50		
	Total	273				
Hostilite	Yes	77	144,04	11091,00	7004,000	0,354
	No	196	134,23	26310,00		
	Total	273				
Semptom Rahatsızlık İndeksi	Yes	77	140,31	10804,00	6521,000	0,253
	No	186	128,56	23912,00		
	Total	263				
Rahatsızlık İndeksi	Yes	77	147,10	11326,50	6768,500	0,185
	No	196	133,03	26074,50		
	Total	273				
Belirti Toplam İndeksi	Yes	77	141,02	10858,50	7236,500	0,598
	No	196	135,42	26542,50		
	Total	273				

*P<0.05, BSI: Brief Symptom Inventory, SPES: School of Physical Education and Sports.

Table 4. Mann Whitney U-Test used to discover whether or not SPES students' subscale scores differed in terms of "volatile substance-use".

	Uçucu Madde	N	Mean Rank	Sum of Ranks	U	P
Depresyon	Yes	9	186,94	1682,50	738,500	0,053
	No	264	135,30	35718,50		
	Total	273				
Anksiyete	Yes	9	170,67	1536,00	885,000	0,193
	No	264	135,85	35865,00		
	Total	273				
Olumsuz Benlik	Yes	9	171,00	1539,00	882,000	0,188
	No	264	135,84	35862,00		
	Total	273				
Somatizasyon	Yes	9	177,44	1597,00	824,000	0,117
	No	264	135,62	35804,00		
	Total	273				
Hostilite	Yes	9	187,78	1690,00	731,000	0,049*
	No	264	135,27	35711,00		
	Total	273				
Semptom Rahatsızlık İndeksi	Yes	9	177,56	1598,00	733,000	0,067
	No	254	130,39	33118,00		
	Total	263				
Rahatsızlık İndeksi	Yes	9	180,94	1628,50	792,500	0,089
	No	264	135,50	35772,50		
	Total	273				
Belirti Toplam İndeksi	Yes	9	164,28	1478,50	942,500	0,292
	No	264	136,07	35922,50		
	Total	273				

*P<0.05, BSI: Brief Symptom Inventory, SPES: School of Physical Education and Sports.

Table 5 Mann Whitney U-Test used to discover whether or not SPES students' subscale scores differed in terms of "narcotic substance-use".

	Uyuşturucu Madde	N	Mean Rank	Sum of Ranks	U	P
Depresyon	Yes	6	210,75	1264,50	358,500	0,021*
	No	267	135,34	36136,50		
	Total	273				
Anksiyete	Yes	6	198,25	1189,50	433,500	0,054
	No	267	135,62	36211,50		
	Total	273				
Olumsuz Benlik	Yes	6	196,33	1178,00	445,000	0,062
	No	267	135,67	36223,00		
	Total	273				
Somatizasyon	Yes	6	211,92	1271,50	351,500	0,018*
	No	267	135,32	36129,50		
	Total	273				
Hostilite	Yes	6	213,75	1282,50	340,500	0,016*
	No	267	135,28	36118,50		
	Total	273				
Semptom Rahatsızlık İndeksi	Yes	6	204,50	1227,00	336,000	0,018*
	No	257	130,31	33489,00		
	Total	263				
Rahatsızlık İndeksi	Yes	6	210,08	1260,50	362,500	0,022*
	No	267	135,36	36140,50		
	Total	273				
Belirti Toplam İndeksi	Yes	6	188,17	1129,00	494,000	0,108
	No	267	135,85	36272,00		
	Total	273				

*P<0.05, BSI: Brief Symptom Inventory, SPES: School of Physical Education and Sports.

4. Discussion and Conclusion

Since youth period is a period in which not only physiological changes but also psychological and social changes are experienced, it psychologically challenges the young individuals. Therefore, each young individual response differently to the psychological forces with different reactions and some of these reactions are made of psychological signs (21).

University students are obliged to cope with such problems as uncertainties about beginning a job, selection of future job, being an independent individual, increasing responsibilities, living away from the families and trying to lead their lives independently (22). Inabilities to cope with these disadvantages may cause some psychological problems among the university students (23, 24, 25).

The study aimed at discovering the correlation between substance-use and the psychological signs of substance-use among the students who studied at the schools of physical education and sports. It was found out that mean scores obtained from BSI used to determine psychological signs of the SPES students were as follows: depression: 11.54 ± 8.85 , anxiety: 11.48 ± 9.41 , interpersonal sensitivity: 10.21 ± 8.95 , somatization: 7.33 ± 6.01 , hostility: 6.20 ± 4.76 , symptom distress index: 1.61 ± 0.54 , distress severity index: 0.8822 ± 0.66389 , symptom total: 27.43 ± 15.61 (Table 1).

In the study of Şahin et al. in which the validity and reliability tests were performed to confirm the use of the inventory among adolescents; mean scores obtained from BSI were as follows: depression: 14.58 ± 10.27 , anxiety: 14.25 ± 9.89 , interpersonal sensitivity: 5.40 ± 4.99 , somatization: 3.37 ± 3.73 , hostility: 4.94 ± 3.91 , symptom distress index: 1.59 ± 0.53 , distress severity index: 0.75 ± 0.50 , symptom total: 23.52 ± 10.78 (26). When we compared our results to the results of the study of Şahin et al.; it was seen that scores of depression and anxiety were in favor of SPES students while other subscales were not.

An increase in distress severity index -accepted as the general score of the inventory- indicates the increase in distress experienced due to psychological signs (27). In the studies conducted with different university students who studied at different departments, it was discovered that there were some differences in distress severity index. In the study of Demirel et al., different university students who studied at different departments were compared using brief symptom inventory to assess their psychological signs and their distress severity index scores were found to be lower than our study (27).

Mean distress severity index scores of SPES

students were found to be higher than the results in the study of Demirel et al., the study in which Turkish validity and reliability tests of BSI were performed among adolescents aged between 13 and 17 and than the results in the study of Dökmen and Kışlak on university students (27,26,28). In this sense; it may be interpreted that SPES students' psychological symptom frequency was higher as far as the mean scores obtained from BSI were concerned.

In the assessment made to discover substance use among the SPES students, it was found out that smoking rate was 23.8%. This result was in line with the results of other studies conducted in our country (29, 30). In a study conducted with the students of eight Turkish universities; it was noted that 25.4% of the students smoked (32). When the findings of the studies conducted in other regions of Türkiye and our findings were compared, it was understood that smoking rate of these studies was similar.

In the assessment made to discover alcohol-use among the SPES students, it was found out that 28.2% of the students still used alcohol. This result was in agreement with the results of other studies conducted in other Turkish universities (29, 31). However, it was seen that rate of alcohol-use in Türkiye was lower than the developed countries (33, 34).

In our study, the rate of volatile substance-use was found to be 3.3% while the rate of narcotic substance-use was found to be 2.2 among the university students. But, in another study which was conducted by Turhan et al. on the university students who studied at different departments of the same university, it was discovered that the rate of narcotic substance-use was found to be 1.8 (35).

When considered the fact that SPES students receive education on sports and know the negative effect of substance-use on performance, we were of the opinion that the picture depicted by the difference between these two findings is an alarming outcome.

When our findings were compared to the findings of the studies conducted in the developed countries; the outcome, which is valid for our country, is also valid for our study and prevalence of narcotic substance-use is low (36, 37). It was seen that the rate of narcotic substance-use in the studies which were conducted with university students in different geographic regions was much lower than our results (38, 39, 40).

The comparison between substance-use –the basic component of the aim of the study- and BSI (Brief Symptom Inventory) subscales provided the following outcomes:

When the findings which were obtained after statistical assessment in relation with BSI scores of SPES students were assessed in terms of smoking

variable; it was noted that psychological symptom levels of the students differed statistically and significantly only in symptom distress index as far as smoking variable was concerned. Symptom distress index scores of the students who smoked were higher than those not smoking ($p < 0.05$) and the difference between the two groups was found to be significant (Table 2).

In the statistical assessment made in terms of alcohol-use variable; none of BSI subscale scores of SPES students gave statistically significant difference as far as alcohol-use variable was concerned (Table 3).

When the findings which were obtained after statistical assessment in relation with BSI scores of SPES students were assessed in terms of volatile substance-use variable; it was noted that psychological symptom levels of the students differed statistically and significantly in hostility as far as volatile substance-use variable was concerned. Hostility scores of the students who used volatile substance were found to be higher and more significant than those who did not use volatile substance ($p < 0.05$) (Table 4).

In the statistical assessment made in terms of narcotic substance-use, it was noted that psychological symptom levels of the students differed statistically and significantly in depression, somatization, hostility, interpersonal sensitivity, distress index and symptom distress index. These significant differences indicated the same situation in all subscales, which meant that BSI scores of those who used narcotic substances were higher and more significant than those not using narcotic substances ($p < 0.05$) (Table 5).

When the relevant literature was examined, it was noted that there were correlations between substance-use and psychological symptoms (35). But, our study was not in line with the literature in terms of some symptoms. Whereas some of the previous studies detected a correlation between self esteem and substance-use (41, 42); there were studies that did not find a correlation, like ours (43, 44).

Depression, which was a distress seen most in substance-use among the adolescents has been focused (35). Anxiety and other psychological symptoms and distresses followed depression (45). Literature states that substance-use may increase anxiety levels and aggravate anxiety disorder (46).

In other words, increased anxiety levels and anxiety disorder may increase the risk to start substance-use (43, 47).

It is emphasized that substance-use among the adolescents may be closely correlated with family structure and such factors as conflicts and problems in the family, poor family ties, poor social support in the family are important risk factors for substance-use (45).

As a conclusion; it is noted that smoking, alcohol-

use, volatile substance-use and narcotic substance-use among the students who study at the schools of physical education and sports is very common. Our study findings also point out that there are significant correlations between substance-use and psychological symptoms.

The starting point should be the fact that university students constitute an important risk group in terms of substance-use and therefore studies that will prevent substance-use should be conducted. Not only are there measures that university administrations can take but also attention of the administrative bureaucrats of the countries should be drawn so that they can take some measures on this issue.

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