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Violence, Psychological Features, and Substance Use in High School Students in Hatay: a Cross-sectional Study

Hatay'da Lise Öğrencilerinde Madde Kullanımı, Bazı Psikolojik Özellikler ve Şiddet: Kesitsel Bir Çalışma

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Objectives: To evaluate the prevalence of substance use among high school students and to examine the relationship between substance use and violence and psychological features.

Patients and Methods: A cross-sectional study was carried out in 23 high schools in Hatay in 2006 using a questionnaire consisted of General Perceived Self-Efficacy Scale, Rosenberg Self-Esteem Scale, Multidimensional Scale of Perceived Social Support, and State-Trait Anxiety Inventory.

Results: A total of 1629 students were given study questionnaire. Lifetime substance use prevalence was 38.8 for cigarette smoking, 30.5 for alcohol use, 30.1 for being drunk, 13.9 for regular smoking, 7.1 for volatile substance use, 1.1 for marijuana use, 0.8 for drug use such as heroin, ecstasy, and cocaine. Anxiety scores were higher in smokers while self esteem and self efficacy scores were higher in alcohol users. Exposure to physical violence and use of physical violence within the last year were higher in smokers and in all substance users.

Conclusion: Cigarette, alcohol and volatile substances were frequently used among adolescents. The results show that high anxiety is related with smoking, high self esteem and self efficacy are related with alcohol use. Substance use is associated with exposure to and use of violence.

Key words: Substance use; adolescence; violence; self esteem; self efficacy; anxiety.

Amaç: Bu çalışmada lise öğrencilerinde madde kullanımı sıklığını saptamak ve madde kullanımı ile şiddet ve psikolojik özellikler arasındaki ilişkiyi incelemek amaçlandı.

Hastalar ve Yöntemler: 2006 yılında Hatay'daki 23 lisede yapılan bu kesitsel çalışmada şiddet ve madde kullanımına ilişkin verilerin yanı sıra özgüven, özsaygı, sosyal destek ve sürekli kaygı ölçeklerinin yer aldığı bir anket uygulanmıştır.

Bulgular: Toplam 1629 öğrenci anketi doldurdu. Madde kullanım yüzdesi sıklık sırasına göre, hayat boyu sigara deneme 38.8, hayat boyu alkol kullanma 30.5, sarhoş olma 30.1, düzenli sigara içme 13.9, uhu, tiner, bali gibi uçucu bir madde koklama 7.1, hayat boyu esrar 1.1 ve hap, eroin, kokain gibi uyuşturucu veya uyarıcı bir madde kullanımı 0.8 olarak elde edilmiştir. Sigara kullananlarda sürekli kaygı, alkol kullananlarda özgüven ve özsaygı puanları yüksek bulunmuştur. Sigara ve diğer madde kullananlarda hayat boyu ve son bir yıl içinde şiddete uğrama ve şiddet uygulama daha yüksek idi.

Sonuç: Sigara, alkol ve uçucu madde kullanımı lise öğrencilerinde yaygındır. Bulgularımız sürekli yüksek kaygının sigara kullanımında, yüksek özgüven ve özsaygının ise alkol kullanımında etkili olabileceği yönündedir. Madde kullanımı ile şiddet uygulama ve şiddete uğrama birliktelik göstermektedir.

Anahtar sözcükler: Madde kullanımı; ergenlik; şiddet; özsaygı; özgüven; kaygı.

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Substance use is a widespread health problem around the world despite all preventive efforts. Annual marijuana use rate among young population in some European countries were reported to be 5 to 10 percent.[1] Among high school students in United States, lifetime prevalence for alcohol, smoking, and volatile substances are 90-93%, 60-70%, 10-20%, respectively.[2] The situation in Brazil, a developing country, is similar. In a study comprising adolescents between 13 to 18 years, lifetime prevalence for alcohol, marijuana, and volatile substances were determined to be 87%, 20%, and 18%, respectively.[3] A study carried out in Turkey reported lifetime prevalence of high school students for alcohol use, smoking, marijuana and volatile use as 54%, 57%, 5%, and 5%, respectively.[4] In another study, prevalence of smoking, marijuana and volatile use were reported as 64%, 4%, and 9%, respectively.[5] Studies indicate that substance use is an important public health problem in Turkey.

Adolescence and young adulthood are particularly risky stages for substance use. This period carries special importance for physical, mental, emotional, and social development of the adolescent. Introduction and first experiences generally start in this period.[2] Therefore, adolescents were selected as a target population in this study.

Psychological factors are closely related to substance use. Low self-esteem is prevalent among adolescent substance users. This relationship was found to be more significant among younger adolescents. Low self-esteem may enhance substance use or substance use may reduce self-esteem.[6] Improvements of social support and self-esteem have positive effects on recovery.[7] Previous epidemiological studies showed that sexual and physical abuse was frequent among drug users. Trauma victims use different kinds of substances to recover from the effects of trauma.[2]

In the present study, it was aimed to determine the prevalence of the substance use and evaluate the relationship between self-esteem, social support, self-efficacy, trait anxiety, and violence with substance use.

PATIENTS AND METHODS

Sample size and population

The data in this study were obtained from 23 high schools selected by systematic sampling in 2006. Total number of the schools in Hatay is 102 and population of students in the schools is 56,847. The schools were selected from five towns in the province, one of them was in central town, and the remaining four were from four different geographical directions.

Cluster sampling method was used to select the students in the schools. Sample size was calculated as 1678. Population size=56,847, estimated prevalence=10.0%, maximum error=2, and design effect= 2.0 were accepted. The statistical power was calculated 88.5% with this population and α=0.05. One classroom was assigned as a cluster, and four classrooms were randomly selected from each school by the grades. Two different questionnaires were given to subjects, and one of the questionnaires was related to another study. Approximately 15 students per classroom filled out the study form. A total of 1629 questionnaires were given to the students but 28 questionnaires were incomplete. In addition, 26 students did not accept to fill the questionnaire. The response rate was 96.7% (1575 students).

Verbal informed consent was obtained from the students. School administrator and teachers were outside the classroom while the students were filling the questionnaire. Approval of Local Ethical Committee has been obtained for this study.

Measurement tools

Socio-demographic questionnaire. Age, gender, school type, grade, family social and economical status, education level of parents, substance use status of parents and relatives, commencement age to substance use, regularity and frequency of use, substance use history lifelong and within the last year, violence history within the last year and lifelong are the variables in the questionnaire. No information on the students' identities was asked in this study.

Rosenberg Self-Esteem Scale. The scale has ten-item Likert scale with items answered on a four point scale - from strongly agree to strongly disagree.[8] Validation study of the Turkish version of the scale was performed by the Çuhadaroglu.[9] Low scores indicate high self-esteem levels.

Multidimensional Scale of Perceived Social Support. The scale was developed by Zimet et al.[10] in USA and validation of the Turkish version of the scale was performed by Eker et al.[11] in Turkey. It has 12 items and three subgroups. Each item has seven degrees. The higher scores refer to high social supports.

General Perceived Self-Efficacy. The scale was developed by Schwarzer and Jerusalem[12] in 1981, and Yesilay et al.[13] adopted into Turkish population. The scale consists of ten Likert-type items and each item has four choices.

State Trait Anxiety Scale. The scale includes 20 items and each item has four choices.[14] It was adopted into Turkish in 1998.[15]

Violence. The term of violence was defined as "the intentional use of physical force or power, threatened or actual, against oneself, another person or against a group or community that either results in or has a high likelihood of resulting in injury, psychological and sexual harm. Beating, slapping, shooting, biting, and pushing are the examples of violence" at the beginning of the violence section. And five items were used to evaluate violence.

Data analysis. The scores of the four scales were tested for normal distribution using Kolmogorov-Smirnov test and Mann-Whitney U-test was used to compare two groups in terms of non-normally distributed data. In terms of frequencies, differences between groups were evaluated using a chi-square test. Logistic regression analysis was also used to clarify independent variables' effects on the substance use. All statistical tests were two-sided, and a p value of <0.05 was accepted as statistically significant. Statistical procedures were carried out using Epi Info version 3.3.2, developed by the Centers for Disease Control and Prevention.

Table 1. Percentage of substance use and substance types (n=1575)

	At least one in …		
Substances	Lifetime %	Last year %	Last month %
Cigarette	39.3	13.9	13.9
Alcohol	30.6	9.5	6.3
Volatile	7.1	1.2	0.8
Others	0.8	0.1	0.1

RESULTS

Of the 1575 students, 50.7% were female, 49.3% were male. Overall mean age and standard deviation was 16.2±1.1. Mean education year of the mothers was 5.5±3.7 while mean education year of the fathers was 7.5±3.7.

Prevalence of substance use by the periods is presented in Table 1. Of the students, 39.3% had smoke experience, and 30.6% had alcohol experience in lifetime. The percentage of volatile use in lifetime was 7.1%. Use of cannabis, heroin, drug etc. was 0.8%.

Table 2 shows the scores of psychological scales by the substance uses. In the ever-smoker, scores of anxiety ($p<0.001$) were higher and scores of self-efficacy ($p=0.023$) were lower than the others. In the current smokers, anxiety scores were higher than the others ($p=0.011$) while scores of self-efficacy, self-esteem, and social support were not significantly different.

With regard to alcohol use, self-esteem ($p=0.013$) and self-efficacy ($p=0.011$) scores were higher in the students who use alcohol and the students who are drunk at least once in lifetime. However, these scores except social support were not significantly different in the students who use alcohol in the last year from the others.

The students who thought to use a substance except for alcohol and cigarette in any time of their lives had higher anxiety scores ($p<0.001$), and lower social support scores ($p=0.004$). Exposure to physical violence and use of physical violence by substance uses were presented in Table 3. Prevalence of exposure to physical violence was higher in the students who use

Table 2. Differences in psychological scales by the substance uses

Status of substance use	Self-Efficacy Median (min-max)	R. Self-Esteem Median (min-max)	MSP Social Support Median (min-max)	ST Anxiety Inventory Median (min-max)
Cigarette smoking experience				
No	30.0 (10-40)	15.0 (8-21)	62.2 (15-84)	44.4 (23.8-77)
Yes	29.0 (10-40)	15.0 (9-23)	61.0 (17-84)	45.0 (25-74)
	0.023	0.502	0.088	<0.001
Current cigarette smoking				
No	30.0 (10-40)	15.0 (8-22)	62.0 (15-84)	44.9 (23.7-77)
Yes	29.0 (10-40)	15.5 (15-23)	61.0 (17-84)	45.4 (27-72)
	0.207	0.703	0.991	0.011
Alcohol experience				
No	29.1 (10-40)	15.0 (8-23)	61.7 (15-84)	45.0 (23.8-77)
Yes	30.0 (10-40)	16.0 (9-22)	63.0 (17-74)	44.9 (25-70)
	0.011	0.013	0.112	0.892
Alcohol use within last year				
No	29.7 (10-40)	15 (8-23)	61.8 (15-84)	44.9 (23.8-77)
Yes	30.0 (10-40)	16 (10-22)	64.0 (17-84)	45.0 (27-70)
	0.109	0.113	0.049	0.407
Volatile experience				
No	30.0 (10-40)	15.0 (8-23)	62.0 (15-84)	44.9 (23.8-77)
Yes	30.0 (14-40)	16.0 (11-21)	61.0 (20-84)	46.0 (27-74)
	0.942	0.320	0.100	0.160
Cannabis. heroine. and cocaine experience				
No	29.9 (10-40)	15.0 (8-23)	62.0 15-84)	44.9 (23.8-77)
Yes	29.5 (10-36)	15.0 (10-19)	59.5 (17-80)	47.0 (33-62)
	0.235	0.978	0.155	0.191
Idea of substance use except alcohol and cigarette				
No	30.0 (10-40)	15.0 (8-23)	62.0 (18-84)	44.9 (23.7-77)
Yes	29.0 (10-40)	15.5 (10-20)	59.0 (15-84)	48.0 (27-72.7))
	0.516	0.318	0.004	<0.001

Mann-Whitney U-test was used.

any kind of substance. Similarly, use of physical violence was higher in this group.

Table 4 shows the differences in the psychological scales by the violence status. Social support scale was lower in the students who were exposed to physical violence ($p<0.001$). At the same time, anxiety scores were also higher in this group than the other ($p<0.001$). On the other hand, no relation was observed between the psychological scales and violence use in the last year.

All of the scales were significantly correlated with each other ($p<0.001$). Correlation coefficient between self-esteem with self-efficacy, social support and anxiety were respectively 0.13, 0.22 and –0.21 ($p<0.001$). Correlation between self-efficacy with social support and anxiety were 0.22 and –0.24 ($p<0.001$). Correlation between social support and anxiety was –0.27 ($p<0.001$). Three scales except the anxiety scales were positively correlated.

Table 5 shows logistic regression analyses of factors affecting lifetime cigarette smoking and alcohol experience. With regard to smoke experience, logistic regression analysis has shown it to be associated ($p<0.01$) with age, being male, mother with low education, high anxiety scores, exposure to violence, use of physical violence in the last year, and having smoker parents.

In terms of alcohol use once in lifetime, age, being male, mother with low education, use of

Table 3. Exposure to physical violence and use of physical violence by substance uses

Substance use	Prevalence of violence exposure	Prevalence of violence use
Cigarette smoking experience	Yes	
No	13.1	20.7
Yes	29.0	44.4
Chi square results	X^2=5.5, p<0.001	X^2=91.1, p <0.001
Current cigarette smoking		
No	15.4	26.2
Yes	43.6	53.3
Chi square results	X^2=85.9, p=0.001	X^2=58.9, p<0.001
Alcohol experience		
No	15.6	22.3
Yes	27.5	47.0
Chi square results	X^2=27.5, p<0.001	X^2=88.7, p<0.001
Alcohol use within last year		
No	17.4	26.4
Yes	31.2	53.5
Chi square results	X^2=20.0, p<0.001	X^2=56.8, p<0.001
Volatile experience in lifetime		
No	18.5	28.9
Yes	28.8	43.4
Chi square results	X2=6.6, p =0.010	X2= 9.9, p =0.002
Cannabis, heroine, and cocaine experience in lifetime		
No	18.8	29.3
Yes	60.0	86.7
Chi square results	X^2=16.1, p<0.001	X^2=23.2, p<0.001
Idea of substance use except alcohol and cigarette in lifetime		
No	17.7	28.1
Yes	41.5	55.8
Chi square results	X^2=31.9, p <0.001	X^2=32.4, p<0.001

physical violence, alcohol use of mother, father, sister, and brother were associated (p<0.001). When mother drinks, age of first alcohol use decreased while there was no relation between father, brother, and sister drinking and age of first use (p<0.05).

DISCUSSION

Cigarette smoking was found to be the most prevalent substance use, although, we have observed lower prevalence than previous studies.[5,16,17] Results of a recent study carried out in İstanbul were consistent with the result of this study.[18] The results might indicate a decrease in the smoking prevalence. Alcohol use is the second common substance use among the subjects.

Although we have found that the prevalence of cigarette smoking and alcohol use was higher in males, prevalence of volatile use were not different by gender.

Students who experienced smoking in lifetime had lower self-efficacy scores than the other students. The relation between self-esteem and smoking is most likely reciprocal. Low self-efficacy increases tendency to substance use at the beginning and then substance use may lead to a decrease in self-efficacy. It may be beneficial in prevention if it is a cause and in treatment if it is an outcome.

Previous studies indicate that low self-esteem may enhance substance use or substance use may reduce self-esteem.[6] Although the relationship between substance use and self-esteem was emphasized in the studies we could not find any significant relationship except alcohol use.

Table 4. Differences in psychological scales by the violence status

Status of substance use	Self-Efficacy Median (min-max)	R. Self-Esteem Median (min-max)	MSP Social Support Median (min-max)	ST Anxiety Inventory Median (min-max)
Violence exposure in lifetime				
No	30.0 (10-40)	15.0 (8-21)	64.0 (22-84)	44.0 (23.8-77)
Yes	29.0 (10-40)	15.0 (9-23)	61.0 (15-84)	46.0 (27-74)
	0.292	0.281	<0.001	<0.001
Violence exposure in last year				
No	30.0 (10-40)	15.0 (8-22)	63.0 (17-84)	44.4 (23.8-77)
Yes	29.0 (10-40)	15.0 (9-23)	60.0 (15-84)	47.1 (30-70)
	0.103	0.206	<0.001	<0.001
Violence use in last year				
No	29.4 (10-40)	15.0 (8-23)	62.0 (21-84)	45.0 (23.8-72.6)
Yes	30.0 (10-40)	15.8 (9-22)	63.0 (15-84)	45.0 (27-77)
	0.743	0.413	0.902	0.585

Mann-Whitney U-test was used.

Different studies were carried out about elevation of anxiety levels and substance use.[19-21] Higher trait anxiety levels among cigarette smokers and who consider smoking or using alcohol can suggest that it is a risk factor for smoking or alcohol abuse.

Physical and sexual abuse is a risk factor for substance use. Many epidemiologic studies were carried out on this topic.[2,22] In our study, substance use is significantly higher in adolescents who experienced physical violence and also applied physical violence, which is concordant with the literature. It seems that the relation between violence and substance use is mutual.

As an expected result, students who were exposed to violence perceived lower social support and higher anxiety. In this study, it was established that lower social support score was a risk factor for volatile and other substances. It was previously found that family and other support systems were risk factors for substance use.[23,24]

On the other hand, no relation was observed among self-esteem and self-efficacy with violence exposure. Also no significant relation was found between physical violence use and self-esteem, self-efficacy, social support, and anxiety. Significant correlation between four scales indicates that they are valid.

Parental smoking among smokers was higher which can be explained with direct exposure to the effects of nicotine or learning theory.[25] The finding that parental smoking increases adolescent smoking whereas parental marijuana use has no effect was considered as supporting the former opinion.[26] Alcohol use of the adolescents whose parents and siblings use alcohol was significantly higher. A previous study reported similar results in relation to parental and adolescent alcohol use.[27] This fact indicates that anti-tobacco and anti-alcohol campaigns should involve the family aspect.

Although the present study was the first to be carried out in Hatay region and had a good representative sample and high response rate, there were some limitations. It could not be generalized to the whole country and adolescents other than high school students. Causal relationship between the variables in the study is not very strong because of cross-sectional methodology.

As a result, cigarette smoking, alcohol drinking and volatile substance abuse were common among adolescents in Hatay province. The results show the relationship between physical violence, lack of social support, anxiety, self-esteem and substance use. Adolescent substance use is significantly related to substance use among parents and siblings.

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Table 5. Logistic regression analyses of factors effecting life-time cigarette smoking and alcohol experience

	Cigarette smoking				Alcohol			
	p	OR	95% CI		P	OR	95% CI	
			min	max			min	max
Male sex	<0.001	2.601	1.975	3.425	<0.001	2.391	1.753	3.261
Family income	0.182				0.802			
Family income-high	0.160	2.657	0.679	10.392	0.627	1.417	0.347	5.787
Family income- satisfactory	0.194	1.837	0.733	4.603	0.613	0.766	0.273	2.149
Family income-low	0.516	1.347	0.548	3.313	0.717	0.829	0.301	2.283
Family income-very low	0.543	1.350	0.513	3.555	0.775	0.855	0.291	2.513
Father's education	0.888				0.951			
Father's education-illiterate	0.308	1.718	0.607	4.866	0.728	1.214	0.407	3.622
Father's education-literate	0.845	1.077	0.514	2.256	0.900	0.948	0.411	2.185
Father's education-primary school	0.997	0.999	0.583	1.712	0.891	0.959	0.530	1.736
Father's education-secondary school	0.707	1.116	0.631	1.974	0.503	0.807	0.431	1.511
Father's education-high school	0.756	1.087	0.640	1.847	0.723	0.901	0.505	1.606
Mother's education	<0.001				<0.001			
Mother's education-illiterate	<0.001	7.117	2.770	18.288	0.386	0.659	0.257	1.691
Mother's education-literate	<0.001	4.732	1.814	12.342	0.507	1.376	0.536	3.531
Mother's education-primary school	0.003	3.776	1.555	9.169	0.996	0.998	0.429	2.320
Mother's education-secondary school	0.073	2.305	0.925	5.741	0.603	1.259	0.529	2.998
Mother's education-high school	<0.001	6.076	2.492	14.813	0.009	3.037	1.322	6.977
Volatile use among relatives	<0.001	2.967	1.602	5.495	0.112	1.645	0.890	3.038
Mother's alcohol drinking	0.158	1.411	0.874	2.278	<0.001	0.281	0.173	0.456
Mother's cigarette smoking	<0.001	0.522	0.379	0.720	0.003	0.599	0.425	0.843
Father's alcohol drinking	<0.001	1.819	1.358	2.436	<0.001	0.255	0.189	0.345
Father's cigarette smoking	0.014	0.707	0.537	0.932	0.003	1.587	1.166	2.160
Sibling alcohol use	0.372	0.827	0.545	1.255	<0.001	0.273	0.175	0.424
Substance use except for cigarette and alcohol	0.999	0.000	0.000		0.828	0.796	0.103	6.179
Age	<0.001	1.566	1.394	1.759	<0.001	1.348	1.187	1.532
Self-efficacy	0.278	0.987	0.964	1.011	0.145	1.020	0.993	1.048
Sef-esteem	0.429	1.029	0.959	1.103	0.156	1.057	0.979	1.142
Social support	0.465	1.004	0.993	1.015	0.287	1.007	0.995	1.019
Anxiety	0.003	1.028	1.010	1.047	0.210	1.013	0.993	1.033
Violence	<0.001	2.801	2.150	3.648	<0.001	1.815	1.349	2.444

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