



# The Prevalence of Substance Use Disorders Among University Students, a Cross-Sectional Study

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Received 2019 November 12; Revised 2020 February 12; Accepted 2020 April 19.

## Abstract

**Background:** Substance use disorders (SUD) are serious social problems that cause physiological and psychological disorders. Adolescents and youth are known as high-risk groups for SUD.

**Objectives:** The present study aimed to investigate the pattern, prevalence, incidence, and etiology of SUD among all students studying at the Ilam University of Medical Sciences, Ilam (Iran), during the academic year 2018 - 2019.

**Methods:** In a cross-sectional study, a multistage random sampling method was used to select the participants. A self-administered questionnaire was used to collect data. This questionnaire was designed to collect information about the participant's demographic data, social data, medical and behavioral data. Data were analyzed using descriptive and inferential statistics in SPSS 16 software.

**Results:** Participants' ages mean  $\pm$  SD was  $23.5 \pm 3.2$  years old. The incidence of substance abuse was higher among men compared to women. The main observed pattern of SUD was Marijuana among consumers. The curiosity and increased memory had the highest and lowest incidence, respectively.

**Conclusions:** The incidence of SUD is high among Iranian students, and most of them have begun SUD in adolescence and because of curiosity. It is necessary to augment adolescents' and young people's awareness of the SUD and addiction consequences.

**Keywords:** Etiology, Oral Substance Abuse, Substance Use Disorders

## 1. Background

Substance use disorders (SUD) is a condition in which the use of one or more substances leads to a clinical disorder (1). Nowadays, SUD has become a global problem and most countries in the world are involved with this problem (2). The prevalence and type of SUD varies between different countries and different jobs (3, 4). About 7% of Americans over the age of 12 years have SUD (5). Based on a study, approximately 15% of young Iranian adults have experienced a SUD (6).

In fact, the SUD is a serious social problem that causes physiological and psychological disorders (7). Results of studies confirm the lower quality of life in SUD individuals in comparison with other people (8-10). Iranian minister of internal affairs reported the SUD as the cause for 50% of divorces in Iran. Also, some mental complications such as de-

pression, suicide, interpersonal relationship disorder are serious problems among individuals with substance abuse (11). The risky sexual behaviors is very high in young men with SUD (12).

Adolescents and Youth are a high-risk group for SUD. First of all: the side effects of SUD are very high among adolescents compared with older people (13). Second, most people with SUD mention their first experience as a teenager (14). It is believed that adverse effects of substance use disorders are more serious among young individuals as over 90% of substance users experience their first use during their adolescence and later face substance use disorders and its serious adverse effects (15). The trend of SUD is increasing among Iranian youth compared with previous years (16). Based on an Iranian cross-sectional study, 19.3% of the high school students were smokers (17).

University students are other high-risk groups for SUD

(18-20). A study evaluated the associated factors with substance use among 731 French college students. The results of the study indicated that study participants had experienced tobacco in 84%, cannabis in 55%, alcohol in 37%, and heavy episodic drinking in 56% of cases (21).

Another study evaluated the use of alcohol and other drugs among 2017 nursing students. Participants mentioned the alcohol, marijuana, sedatives, and opioids consumption in 36.9%, 6.8%, 4.6%, and 2.6% of cases, respectively (22). Studies show that substance abuse threatens Iranian youth as well, especially medical students (23, 24).

So far, several factors have been identified as risk factors for SUD. Mental disorders are an important factor in increasing the risk of substance use (25). Kendler et al. (26) reported genetic and environmental factors as important factors of drug abuse disorders.

## 2. Objectives

In the present study, we aimed to investigate the pattern, prevalence, incidence, and etiology of SUD among all students studying at the Ilam University of Medical Sciences during the academic year 2018 - 2019.

## 3. Methods

### 3.1. Design

A cross-sectional study was conducted to investigate the pattern, prevalence, incidence, and etiology of SUD among all students studying at the Ilam University of Medical Sciences during the academic year 2018 - 2019. A multi-stage random sampling method was used to select the participants. First, 3 faculties were randomly chosen from the Ilam University of Medical Sciences (Iran). Consequently, 376 university students were selected as the sample group. Since all questionnaires with incomplete or chaotic information were eliminated from the research process, data from 285 questionnaires were analyzed.

### 3.2. Questionnaire

A self-administered questioner was made by the research group to collect data. This questionnaire was designed to collect information about the participant's demographic data, including age, gender, number of siblings, history of chronic disease, place of residency, level of education and history of failing during compulsory education); social data including lost parents, parents were living together during childhood or adolescence, parents'

education and job, and behavioral data, including criminal history, SUD status, SUD among relatives and friends and most favorite leisure activities.

Data were analyzed using descriptive and inferential statistics by SPSS software. Tables, charts, mean, mean  $\pm$  SD and percent were used in descriptive statistics.

In Inferential statistics, the association between depression and qualitative variables was determined by using  $\chi^2$  and Fisher Exact test.

### 3.3. Ethical Consideration

This study was registered at the ethical committee of the Ilam University of Medical Sciences (no.: 22.52.98.2308). Informed consent was obtained from all participants before enrollment in the study. To enhance confidentiality, all questionnaires were completed anonymously, and only required information was collected.

## 4. Results

Participants' ages mean  $\pm$  SD was  $23.5 \pm 3.2$  years, with a range from 18 to 50. Most of the participants used to live in a Governmental dormitory (no.: 229/285). The demographic and clinical characteristics of study participants are presented in Table 1.

The frequency and incidence of SUD were higher among men compared to women. This difference was statistically significant ( $P = 0.000$ ) (Table 2).

The results showed that the highest incidence of the main pattern of substance used disorder was observed among Marijuana consumers and consumed. Also, the heroin and psychotropic substance users have the lowest prevalence. The incidence and prevalence of the main pattern of SUD among the study participants are presented in Table 3.

In the assessment of motivations or reasons behind SUD, curiosity and increased memory had the highest and lowest prevalence, respectively. The relationship between assessed motivations or reasons behind SUD and incidence and prevalence are presented in Table 4.

Considering the evaluation of the first-time consumption, 4% of consumers had less than 15 years old, 2% of consumers had 15 - 18 years old and 94% of consumers had 19 or more years old.

## 5. Discussion

This study was conducted to identify the pattern, prevalence, incidence, and etiology of SUD substance

**Table 1.** Demographic Variable of the Study Participants<sup>a</sup>

Variable	Values
<b>Gender</b>	
Male	96 (33.7)
Female	189 (66.3)
Total	285 (100)
<b>Educational level</b>	
Associate	15 (5.3)
BA	144 (50.7)
MA	14 (4.9)
GP	111 (39.1)
Total	284 (100)
<b>Location</b>	
Native	31 (11.1)
Private dormitory	6 (2.1)
Governmental dormitory	229 (81.8)
Living with friends	8 (2.9)
Single life	6 (2.1)
Total	280 (100)
<b>Fathers job</b>	
Non-governmental	154 (54)
Governmental	131 (46)
Total	285 (100)
<b>Mothers job</b>	
Non-governmental	237 (83.1)
Governmental	48 (16.9)
Total	285 (100)
<b>Fathers education level</b>	
Illiterate	58 (22.4)
Primary	33 (12.7)
Diploma	62 (23.9)
BA	82 (31.7)
MA	14 (5.4)
PhD	10 (3.9)
Total	259 (100)
<b>Mothers education level</b>	
Illiterate	88 (34.4)
Primary	42 (16.4)
Diploma	72 (28.1)
BA	51 (19.9)
MA	1 (0.4)
PhD	2 (0.8)
Total	256 (100.0)

<sup>a</sup>Values are expressed as No. (%).

abuse among students of the Ilam University of Medical Sciences.

The incidence and prevalence of SUD were reported in 20% and 9.5% of all study participants, respectively. The incidence and prevalence difference was statistically significant between men and women.

The results of a report in 2014 stated that a large num-

ber of adults aged 18 or older are involved in substance abuse. In fact, nearly 20 million of all adults  $\leq$  18 years old had a history of SUD during 2013, including approximately 16 million with alcohol use disorder and 6 million with illicit drug use disorder (27). One study reported the substance abuse as a major problem in 9.4% of the American population older than 12 years (28). Substance abuse often affects most segments of society, so that 10% to 15% of Americans are substance abusers (26). One Iranian study reported that about one-third (30.3%) of Iranian high school students had a history of substance abuse at one or more times, and 13.86% of all study participants were currently using substances (29). In another Iranian study, about 8% of students had substance abuse and most of them were living in dormitories (30).

Our results showed that the incidence of SUD among men was 9 times higher than women (45% vs. 5%). Consistent with our results, Narrow et al. reported a two-fold higher risk of substance abuse for men than women (31).

Ahmadi et al., in consistent with our results, reported the higher prevalence of substance abuse among Iranian men than in women (29).

In the evaluation of the type of abused substance, the highest incidence was reported in marijuana consumption (14%). However, the most prevalent use was in tramadol users (6.3%). The trend of marijuana abuse is growing worldwide. So that the prevalence of US marijuana abuse was 4.1% in 2001 - 2002 and 9.5% in 2012 - 2013 (32). This increasing trend has even occurred in pregnant women. The prevalence of marijuana abuse increased from 2.37% in 2002 to 3.85% (95% CI: 2.87% - 5.18%) in 2014 (33). However, cigarette smoking has the highest incidence among Iranian high school students (25.4%) (29).

However, in our study, curiosity was the most common cause of SUD, but the history of substance abuse in the family was the most common cause of SUD. In a study of 12 441 high school seniors, "consumption to reduce pain" was the motivation of 45% of nonmedical users (34). Also, in an Iranian study, seeking pleasure and release of tension were the most common reasons for substance abuse among 397 Iranian high school students (29). Some students feel unsuccessful in their academic performance. Therefore, they use ADHD medication to enhance the ability to study and achieve academic success (35).

However, in the design of our study, we considered an equal number of male and female students and also requested that anonymous questionnaires be completed to increase the confidentiality of the information, but incomplete questionnaires were more common among men

**Table 2.** Comparison of the Incidence and Prevalence of substance Abuse Among Consumers Based on Gender<sup>a</sup>

Variable	Incidence		Total	Prevalence		Total
	Yes	No		Yes	No	
<b>Gender</b>						
Male	44 (45)	52 (55)	96 (100)	27 (28)	69 (71)	96 (33.33)
Female	10 (5)	178 (95)	188 (100)	1 (0.5)	188 (99.5)	189 (66.66)
<b>Total</b>	<b>54 (20)</b>	<b>230 (80)</b>	<b>284 (100)</b>	<b>28 (9.5)</b>	<b>257 (90.5)</b>	<b>285 (100)</b>
<b>P value</b>	0.000		0.000			

<sup>a</sup>Values are expressed as No. (%).

**Table 3.** Incidence and Prevalence of the Main Pattern of Substance Used Disorder Among the Study Participants<sup>a</sup>

Pattern	Incidence Per 100 Subjects, Valid Cases = 284	Prevalence Per 100 Subjects, Valid Cases = 284
<b>Hashish</b>	7 (2.5)	0 (0)
<b>Opium</b>	21 (7.4)	7 (2.5)
<b>Heroin</b>	2 (0.7)	1 (0.4)
<b>Crystal</b>	3 (1.1)	1 (0.4)
<b>Combined substances</b>	3 (1.1)	2 (0.7)
<b>Psychotropic substances</b>	2 (0.7)	1 (0.4)
<b>Marijuana</b>	40 (14)	15 (5.3)
<b>Tramadol</b>	31 (10.9)	18 (6.3)
<b>Total</b>	<b>54 (19)</b>	<b>28 (9.8)</b>

<sup>a</sup>Values are expressed as No. (%).

than women. This may suggest the participants' mistrust of the researcher as a limitation for the study.

### 5.1. Conclusions

The incidence and prevalence of SUD are high among Iranian students. There was a statistically significant difference between men and women in the incidence and prevalence of SUD. Most of the students have begun substance abuse in adolescence. Curiosity was the highest cause of first-time abuse for most students. Like most areas of the world, marijuana is the most commonly abused drug among Iranian students. Therefore, it is essential that families, administrators, policymakers, and health educators be aware of the status of SUD among students because they can do proper planning to reduce its incidence and subsequent complications.

### Acknowledgments

We thank the Ilam University of Medical Sciences, participants, coordinators, and data reviewers who assisted in this study.

### Footnotes

**Authors' Contribution:** Ashraf Direkvand-Moghadam participated in the study design, literature review, preparation, and editing of the manuscript. Kosar Piri participated in the study design, data collection, preparation, and editing the manuscript. Amir-Reza Jamshidbaigi participated in the study design, data collection, preparation, and editing of the manuscript. Safoura Taheri participated in the literature review, preparation, and editing of the manuscript. Yousef Veisani: carried out the data analysis and participated in editing the manuscript. All authors reviewed the preliminary and final analyses, and the draft and final manuscripts. All authors read and approved the final manuscript.

**Clinical Trial Registration Code:** None.

**Conflict of Interests:** None.

**Ethical Approval:** This study was undertaken with the approval of the ethical committee of the Ilam University of Medical Sciences (no: 22.52.98.2308).

**Funding/Support:** This study was supported by Ilam University of Medical Sciences.

**Informed Consent:** The aim of the study was described and informed consent was obtained from all participants before the enrollment in the study. To enhance confidentiality, all questionnaires were completed anonymously and only required information was collected.

**Table 4.** the Relationship Between Assessed Motivations or Reasons Behind Substance Use and Incidence and Prevalence<sup>a</sup>

Etiologic Factors	Incidence, Valid Cases = 284		Prevalence, Valid Cases = 284	
	Values	P Value	Values	P Value
<b>Curiosity</b>	32 (11.3)	0.000	17 (6)	0.000
<b>Fatigue</b>	1 (0.4)	0.190	0 (0)	0.902
<b>Recreation</b>	26 (9.2)	0.000	15 (5.3)	0.000
<b>Problems</b>	5 (1.8)	0.000	4 (1.4)	0.000
<b>Physical</b>	1 (0.4)	0.098	1 (0.4)	0.019
<b>Mental</b>	2 (0.7)	0.026	3 (1.1)	0.007
<b>Increased memory</b>	0 (0)	0.902	1 (0.4)	0.190
<b>Increase sexual power</b>	1 (0.4)	0.098	1 (0.4)	0.190
<b>Friends</b>	2 (0.7)	0.180	8 (2.8)	0.000
<b>Consumption in the family</b>	9 (3.2)	0.001	22 (7.7)	0.003

<sup>a</sup>Values are expressed as No. (%).

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