Epidemiology of Addiction Susceptibility in the Students of West Azerbaijan Islamic Azad Universities

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Abstract: The purpose of this study is to investigate the prevalence of addiction susceptibility (AS) from the viewpoint of psycho-social development in the students of West Azerbaijan Islamic Azad Universities. Through the identification of potential drug abuse contribute to the guidance in programs of drug demand reduction. The study population consisted of undergraduate students who were aged 18 to 41 years. 592 students participated in this study and were chosen using cluster random sampling method from Islamic Aza Universities of Urmia, Khoy, Makou, Mahabad and Boukan. Data were gathered through Addiction Susceptibility Questionnaire - Student Version (ASQ-SV) based on their gender, major, and academic years. Results showed the prevalence of students AS is 4.4 percent. Prevalence of AS in male students is more than females, the single more than married, younger more than older, students of agricultural and engineering departments more than other departments and regular users of cigarettes more than occasional users and non-users of cigarettes. Knowing this information is essential to drug demand reduction programs that male students, singles, low age, students of agricultural and technical departments and students who use cigarettes occasionally or permanently are the most important target groups for primary prevention programs.
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Introduction

Addiction is a complex multifactor disease. Various biologic, psychological, social and spiritual factors have an important role in addiction (Galanter, 2006). Addiction is better understood in the context of a multifactor developmental process, which considers predisposing factors during growth and development (Zeinali, Vahdat and Eisavi, 2008). From this point of view, drug abuse and addiction are developmental phenomena. There is an increase in the prevalence of substance abuse and addiction with age (Young et al, 2002). On the other hand, studies have shown that susceptibility to addiction increases with age in adolescents. From 14 to 19 years of age, susceptibility to addiction increases but there is a decrease in susceptibility at 20 years of age (Vahdat and Zeinali, 2009). In addition, there are gender differences in drug abuse and addiction, with reports of higher prevalence rates in males compared to females (Young et al, 2002; Ramsay and Partridge, 1999). Studies on the relationship between marital status and addiction have shown that alcoholics are generally young, single, male and cigarette smoker (Barnes, Murray, Patton, Bentler and Anderson, 2000). Studies carried out in Iran show that prevalence of drug abuse among married individuals is less than that among single individuals (Akbari Zardkhaneh et al, 2011).

Mohammadpour Asl, Fakhri, Rostami and Vahidi (2007) evaluated the prevalence of drug abuse and the relevant factors in adolescents in Tabriz and reported that 77.4% of adolescents have never smoked, 18.2% have experienced smoking and 4.4% are regular smokers. Chen, Sheth, Elliot and Yeager (2004) reported dependence on nicotine in 8% of 13-18-year-old schoolchildren. Ahmadi (2003) concluded that of 6 individuals experiencing cigarette smoking, one might become a regular smoker. Early cigarette smoking, regular smoking, and recent smoking are related with use of alcohol and drug abuse (Cho, Hallfors and Iritani, 2007). Addiction occurs only in a small percentage of nicotine, alcohol and opium users, who use these substances for a long time: for example, approximately 12-15% of alcohol drinkers, 5-10% of nicotine users and 1-2% of opium users. These studies have shown that not all the individuals who exposed with addictive drugs develop dependence or addiction. Transition from abuse to addiction is low. Despite long-term cigarette smoking, drinking alcohol and use of opium, some users do not develop addiction. On the other hand, some individuals become addicted after only a few exposures with addictive drugs (Hiroi and Agatsuma, 2005). Dependence occurs only in a small percentage of individuals who use addictive drugs, indicating significant differences in personal susceptibility to drug abuse (Agatsuma and Hiroi, 2004). According

to the "Addict Prone Theory" some individuals are prone to addiction due to personality problems or disorders and if they are exposed to addictive drugs, they will become addicted. However, if an individual is not susceptible, they will not become addicted (Gendreau and Gendrea, 1970). Research finding has shown that unhealthy developmental backgrounds and susceptibility to and readiness for addiction play a fundamental role in addiction. Barnes et al (2000) carried out a longitudinal study and proposed "addiction-prone personality" theory, reporting that addiction-prone personality trait leads to use of alcohol and drug abuse. Franke et al (2003) made allusions to the development of such susceptibility and readiness during various stages of growth and development and reported that individuals who develop addiction to drugs might have different psychological risk factors compared to those who have access to additive drugs but do not develop drug addiction.

As discussed above, recent studies and views have strongly indicated, from different perspective, that there is liability and susceptibility to accepting and using addictive drugs. In fact drug abuse and dependence do not occur abruptly; rather, addiction is a long process during which deviant personality traits and characteristics, thoughts and opinions, behaviors, lifestyles, social and family relationships and feelings and emotions develop, making the individual susceptible to addiction. A large number of systematic studies have been carried out on drug abuse and addiction (Mohammadpour Asl et al, 2007; Ahmadi, 2003; Ayatollahi, Mohammadpour Asl and Rajaeefar, 2005). However, there are only a small number of studies on susceptibility to addiction, with conflicting results. Vahdat (2005) evaluated susceptibility to addiction among 14-20-year-old high school students in Urmia based on APS (Addiction Potential Scale), which is one of the three sub-scales of MMPI-2, developed by Weed, Butcher, Mckenna and Ben-Porath (1992). The results showed that 43.2% of students had very low and low susceptibility, 42.8% had moderate to severe susceptibility and 14.1 had very high susceptibility. Vahdat and Zeinali (2009) carried out an epidemiological study on AS in Iranian high school students using ASQ (Addiction Susceptibility Questionnaire) and reported an addiction susceptibility rate of 3.4%.

Dehkordian (2003) showed, using a researcher-made questionnaire, that human science, arts, medical and engineering students have the highest and lowest readiness and tendency, respectively, for drug abuse. In another study by Kordmirza, Azad and Eskandari (2003), using APS, it was shown that arts, human sciences, engineering and medical sciences students have the highest and lowest tendency, respectively, for drug abuse. Vahdat (2005) showed that contact with smoking friends had a very important role in smoking cigarettes. There was a significant relationship between smoking experience and contact with smoking friends on one hand and AS on the other. A study by Vahdat and Zeinali (2009) showed a significant negative relationship between occasional and/or regular smoking of cigarettes and AS.

In the present study, AS was evaluated from a psycho-social development viewpoint (Zeinali, Sharifi, Enayati, Asgari and Pasha, 2011). The psycho-social development viewpoint was introduced by construction and development of addiction susceptibility questionnaire (ASQ, Zeinali and Vahdat, 2011). From this point of view, addicts have different life experiences during childhood and adolescent developmental periods, compared to healthy individuals, making them susceptible to addiction. Addicts have more aberrant lifestyles, social and family relationships, thoughts and believe, feelings and emotions and risky behaviors compared to healthy individuals (Zeinali et al, 2008). The present study aimed to evaluate the prevalence of AS among university students, at a time when susceptibility to addiction exists but there is no addiction. Evaluation of the prevalence of AS provides valuable information which can be used in drug demands reduction programs because such programs should use information of groups in which addition is being developed, i.e. individuals susceptible to addition, rather than information about addicted groups. The aim of the present study was to evaluate the prevalence of addition susceptibility, from a psycho-social viewpoint, in students of Islamic Azad University branches in the Western Azerbaijan Province, Iran, through the identification of drug abuse susceptible individuals contribute to the guidance of drug demand reduction programs.

Method

Participants

The study population consisted of undergraduate students aged 18 to 41 years of Islamic Azad Universities in West Azerbaijan Province. The study sample comprised 592 students who were chosen with regard to gender, major and academic semester from Islamic Azad Universities of Urmia, Khoy, Makou, Mahabad and Boukan using a cluster random sampling method. Before data collection, approval from the institutional ethical committee was obtained and the nature of the questionnaires was explained to the students. After declaration, each student signed an informed consent form.

Materials and Procedure

Data were gathered using the Addiction Susceptibility Questionnaire- Adolescent Version (ASQ-SV; Zeinali, 2013). The ASQ-SV includes 40 items and 4 factors (risky behaviors, life style and social relationships, personality characters, and emotions and Beliefs). It is scored using a 3-point Likert-type scale (1 = disagree, 2 = slightly agree and 3 = strongly agree). The items with factor loadings between β = 0.30 to 0.76 were properly loaded on 4 factors. Also, the criterion validity of the original ASQ was determined through simultaneous implementation with the Addiction Potential Scale (Weed, Butcher, McKenna & Ben-Porath, 1992) and was estimated as .62 (Zeinali & Vahdat, 2011). The reliability of ASQ-SV was .90 and that of its factors were .70, .81 .74 and .81 estimated by Cronbach's alpha (Zeinali, 2013). In the present study, the reliability of the ASQ-SV and its factors were estimated .90, .76 .80, 70 and .76 by Cronbach alpha method respectively. The criterion validity of the ASQ-SV was estimated with the Substance Use Risk Profile Scale (SURPS; Woicik, Stewart, Pihl & Conrod, 2009) as r = 0.59, p<0.001. Data collection was conducted during class time, with the permission of the faculty dean and teachers. Data were collected by the leading author. The questionnaires were administered at an appropriate time to avoid damaging the curriculum. The students were required to communicate any problems they encountered with the questionnaires at the time they completed the questionnaires.

Results

At first, descriptive results of the study will be presented, and then the prevalence of AS in students based on demographic indices will be presented. The means and standard deviations of the students' AS according to gender, marital status and age are given in Table 1.

Table 1. The mean and standard deviation of the students' AS according to gender, marital status and age

Variables		M	S	t	df	P-value
Gender	Male	59.83	12.67	4.13	455	0.001
	Female	55.85	9.13			
Marital status	Single	58.19	11.34	1.98	453	0.053
	Marred	55.08	10.56			
Age	18 - 25	58.26	11.52	F 3.53	3 450 453	0.015
	26 - 30	57.83	12			
	31 - 35	56.85	7.68			
	36 - 41	50.84	7.96			

Table 1 shows that male students, unmarried students and younger students had greater mean scores of AS females, married and older students, respectively.

Before presenting the prevalence of AS, statistical norms of the Student version of the AS questionnaire is presented.

Table 2. Statistical norm of ASQ-SV for students

Statistical norm of ASQ-SV	Scores	CP%	P%
Normal (non Susceptible)	0 – 69	85.1	85.1
Suspicious (Moderate Susceptible)	70 – 80	95.6	10.5
Susceptible (High Susceptible)	81 – 120	100	4.4

Table 2 shows, 85.1% of students lie in the normal range, 10.5% in the suspicious range and 4.4% in the susceptible range.

Table 3. The overall prevalence of AS, prevalence according to gender and marital status

prevalence		Suspicious		Susceptible	
		f	P%	f	P%
overall prevalence		48	10.5	20	4.4
gender	male	33	14.7	17	7.6
	female	15	6.4	3	1.3
marital status	Single	41	11.4	17	4.7
	Marred	7	2.3	3	3.1

Table 3 shows, 10.5% of students suspected of, and 4/4% are susceptible to addiction. Prevalence of AS in male students is higher than that in females and rates among the unmarried were higher than that among their married counterparts.

Table 4. Prevalence of AS according to age

age	Suspicious		Susceptible	
	f	P%	f	P%
18 - 25	37	11.2	17	5.1
26 - 30	7	12.1	3	5.2
31 - 35	3	7.5	0	0
36 - 41	1	4	0	0

Table 4 shows that the prevalence of AS decreases with increasing age. As for ages above 30 years, the prevalence of AS is zero.

Table 5. Prevalence of AS according to departments

department of education	Suspicious		Susceptible	
	f	P%	f	P%
Humanities	10	7.9	4	3.1
Engineering	16	13.6	8	6.8
Medical	1	1.9	1	1.9
Agriculture	13	20	4	6.2
Science	8	8.5	3	3.2

Table 5 shows the prevalence of AS in students of agricultural and engineering departments are high while those of the Medical faculty students are low.

Table 6. Prevalence of AS according to Smoking

Smoking	Suspicious		Susceptible	
	f	P%	f	P%
non-users	33	8.4	12	3
occasional	8	28.6	2	7.1
regular	7	21.2	6	18.2

Table 6 shows that the prevalence of AS in regular users is higher than that in occasional users and rates among occasional users are higher than among non-users of cigarettes.

Discussion and Conclusion

The results showed that the mean of student's AS decreases with advancing age. Male students, unmarried students and younger students had greater mean scores of AS females, married and older students, respectively. The prevalence of AS among the students was 4.4%. The Prevalence of AS in male students is higher than that in females and rates among the unmarried are higher than that among their married counterparts. The prevalence of AS decreases with increasing age. The prevalence of AS in students of agricultural and engineering departments are high while those of the Medical faculty students are low. The prevalence of AS in regular users is higher than that in occasional users and rates among occasional users are higher than among non-users of cigarettes. The results of the present study showed that addiction occurs in only a small percentage of the population who become susceptible to addiction during life. The results of this study showed that 4.4% of university students were susceptible to addiction, consistent with the results of studies carried out by Agatsuma and Hiroi (2004), Flagel et al (2003), Hiroi and Agatsuma (2005), Zeinali et al (2008), Vahdat and Zeinali (2009), and also consistent with the "Addict Prone Theory" introduced by Gendreau and Gendreau (1970). Drug abuse and dependence is a developmental phenomenon, which increases in prevalence in adolescents with advancing age (Young et al, 2002). In other words, AS gradually forms at young ages and the age variable is considered an important factor in AS. The results of this study confirm the results mentioned above that the mean and prevalence of AS fully follow the pattern of the variable of age. In addition, the results showed that the mean and prevalence of AS of university students (youth) decrease with age. AS decreases from 18 to 41 years of age. Zeinali and Vahdat (2009) reported that AS of high school students increases with age. There is an increase in AS from 14 to 19 years of age;

however, a mild decrease is observed at 20 years of age. If the results of the study by Vahdat and Zeinali (2009) and those of the present study are taken into account together, a continuous spectrum is achieved in the development of AS with the first signs appearing during early adolescence, reaching a peak at late adolescence and gradually decreasing after adolescence. Studies have shown a sex differences in the use, abuse and dependence with a higher prevalence in males compared to females (Young et al, 2002; Ramsay and Partridge, 1999). In this context, the results of the present study and other studies show a higher prevalence of AS in males compared to females (Vahdat and Zeinali, 2009), which might be attributed to a higher level of social activities in males and tolerance of higher levels of stress and facing more problems compared to females. Studies on the relationship between marital status and addiction show that alcoholics have a tendency to remain single. Married individuals have fewer problems with the use of alcohol compared to individuals who are not married; there is a high prevalence of alcohol abuse in single male populations (Barnes et al, 2000). Studies carried out in Iran show a lower prevalence rate of drug abuse in married versus single individuals (Akbary Zardkhaneh et al, 1990). The results of the present study in this respect are consistent with those of other studies. In psychology literature, too, marriage has been considered a factor in prevention of psychological problems; in determining the prognosis of treatment, marriage is considered one of the promising factors (Rosenham and Seligman, 1995). There is controversy over the prevalence of AS in different study fields of the subjects. The results of the present study showed a higher prevalence rate of AS among engineering and agricultural departments students compared to other departments and lower rates among medical sciences students compared to other departments. Dehkordian (2001) showed, using a researcher-designed questionnaire, those students in the departments of human sciences, arts, medical sciences and engineering have, respectively, the lowest and highest susceptibility to drug abuse. Another study by Kordmirza et al (2003), using APS, showed that students in the departments of arts, human sciences, engineering and medical sciences have the highest and lowest susceptibility to drug abuse, respectively. The discrepancy between the results might be attributed to the use of different tools and evaluation of AS from different viewpoints. Finally, the results of the present study showed that the prevalence of AS is higher in regular cigarette smokers compared to occasional smokers and non-smokers. The results of this study in relation to the prevalence of smoking cigarettes among school students are consistent with those of studies by Chen et al (2004), Ahmadi (2003), Cho et al (2007) and Mohammadpour Asl, et al (2007). In relation to the relationship between the age of occasional or regular smoking and susceptibility to addition, the results of this study are consistent with the results of studies by Vahdat (2005) and Vahdat and Zeinali (209), confirming them, i.e. early onset and regular smoking are considered risk factors for AS. Drug abuse is considered a multifactor disease, threatening the health of adolescents and young adults. It is a developmental phenomenon, with late adolescence to early youth being the peak period for AS. In fact, drug abuse and dependence do not occur abruptly; rather, addiction is a long-term process, during which the individual develops aberrantly, becoming susceptible to addiction. Despite access to addictive drugs, individuals do not develop addiction if they do not become susceptible. Drug addicts are individuals with drugs incorporated into their aberrant and unhealthy developmental backgrounds, rather than use of drugs making them addicted. By considering this evidence, probably the best and the first solution are to identify individuals who have addiction potential and to institute educational and therapeutic procedures before addiction develops. Therefore, epidemiological studies, especially in relation to AS, are very important. The results of this study showed that individuals susceptible to addiction have particular characteristics, the recognition of which helps identify high-risk groups and provides useful information for drug demand reduction. This information is absolutely necessary for initial preventive programs which aim to decrease demand for drugs considering the fact that approximately 4.4% of students are susceptible to drug abuse. Male students, single students, young students in the departments of agriculture, engineering and those who smoke occasionally or on a regular basis are the most important target groups for Primary prevention actions. It appears it is necessary to carry out longitudinal studies in order to understand how AS develops; such studies are recommended as future research themes. It is also recommended that epidemiological studies be carried out in Iran in other population groups in relation to AS.

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