

Substance Abuse Among High School Students in Zahedan

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Background: In order to maintain and promote social health, special attention should be directed towards risky behaviors and the relevant effective factors especially in high-risk groups.

Objectives: This study was aimed to identify the prevalence of substance abuse and its related factors among adolescents in Zahedan, Southeast of Iran.

Materials and Methods: This cross-sectional study included a total of 1000 randomly-selected boy and girl high school students by cluster sampling method. Goldberg's general health questionnaire and the risk behaviors questionnaire were used for collecting data. Data were analyzed using SPSS software and descriptive statistics (i.e. frequency and percentage).

Results: The incidences of first experience of water pipe smoking (hookah), chewing tobacco (Nas), tramadol, drugs and alcohol were 21.5%, 6.1%, 4.7%, 4.2% and 7.2%, respectively. The results the incidence in total also showed that 3.5% of the students started smoking in 2010. In addition, lifetime experience and annual incidence of these behaviors was 2 - 5 times more likely among adolescents with a family member or a friend who uses substances, compared with those without a history of substance use. Furthermore, such behaviors were 2 - 3 times higher in adolescents with abnormal general health compared with the normal ones.

Conclusions: Based on the results, the prevalence and incidence of risky behaviors particularly the age at the first experience among students is worrisome. Thus, it is imperative to begin prevention programs for younger adolescents.

Keywords: Adolescent; Dangerous Behavior; Substance Abuse

1. Background

Currently, addiction to illicit substances is one of the social and healthcare problems (1). Based on the report by the United Nations office on drugs and crime, 5% of the world population uses illicit substances (2). In Iran, the statistics showed that 1.2 - 3.3 million people use drugs (3). Despite a relative drop in substance use rate in developed countries, it is rapidly increasing in developing countries (e.g. Iran), particularly among youth population (2). According to World Health Organization's report on adolescent drug abuse prevention, 4% of self-reported substance users were under 15 years old and 24.4% of the substance users started using substances between 15 - 19 years of age (2).

Studies have reported the following items as the main factors of adolescent substance use experiences: easy access to substances; being a short, fast, and low-cost way to feel good; peer groups acceptance; reducing stress and

distressing emotions and depression; a way to encounter with life pressures and feel strong and calm (4). In fact, adolescence is associated with an increase in risk of starting substance use and addiction (5). Furthermore, it is worrying how young adolescents are inclined toward smoking cigarettes, drinking alcohol and other substances, because the majority of adolescents, who start substance use in the early years of their adolescence, will continue its consumption in future and in fact it is the cause of adults' addictions. Moreover, substance abuse in this stage is associated with social and mental problems in youth and adulthood (6, 7). Additionally, data suggests that adolescent substance users are involved with phenomena such as robbery, violence, academic failure, disorganized thinking, reduced psychosocial adjustment and reduced problem-solving skills, social isolation, and depression (8).

Implication for health policy/practice/research/medical education:

The study shows the frequency of common substance use among adolescents in Southeast region of Iran. It suggests establishing comprehensive school-based health promotion campaigns targeting the health promoting behaviors in teenagers, including prevention and drug cessation.

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Previous studies have shown that the most common substances among European and Australian adolescents are hashish and alcohol, respectively. An epidemiological study in The Netherlands showed that 85% of high school students have drunk alcoholic beverage at least once and 58% of them used substances one month before the survey (7). Studies showed that alcohol use was one of the critical factors of adolescents' mortality (9). A nation-wide research in Iran by Sedigh Sarvestani (2004) (10) on junior high school and high school students showed that the most commonly-used substances were tobacco (33.3%) and alcohol (15.8%), respectively. Researches on different races showed that Asian adolescents consume less alcohol in comparison to their peers in other parts of the world (11). Substance use and addiction are the social problems that engage most of the valuable assets of the country, specifically the adolescents and youth, and also most of the detrimental complications; thus, planning and interventional approaches are imperative. Therefore, the first step toward prevention is to study the epidemiology. On the other hand, to the best of our knowledge, there are a limited number of researches on risky behaviors including substance use in Iranian young people.

2. Objectives

Accordingly, this research aimed at studying the prevalence of substance use and its relevant factors among high school students in Zahedan in 2011.

3. Materials and Methods

Using cluster random sampling method, this cross-sectional study included 1000 female and male high school students in Zahedan located in Sistan and Baluchistan province. First, a list of high schools in Zahedan was provided and four high schools (two female and two male high schools) in region one, and six (three female and three male high schools) in region two were randomly selected. Afterward, three to four classes were randomly selected from each high school based on their students' population. Iranian versions of the questionnaire of high risk behaviors (12) and Goldberg's general health questionnaire (13) were used to collect data. Iranian version of high risk behaviors was designed by Bakhshani with appropriate validity and reliability (12). The general health questionnaire was designed to screen nonpsychotic mental disorders at hospitals and communities. In this research, the 28-item form of Goldberg and Hiller's general health questionnaire were used. This questionnaire composed of four subscales, each with seven items. These four subscales were somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. The total score for an individual is calculated by adding up their scores

of these four subscales. The Cronbach's alpha was between 0.78 and 0.93, and its reliability was reported by between 0.83 and 0.90 in previous studies (14). The questionnaires were given to 1000 students and they were asked to fill voluntarily and anonymously. Students were also informed that all the information will be kept confidential and analyzed only in groups. Of 1000 questionnaires, 16 were excluded and their information was not entered for analysis because they were not returned or completed. The information of the remaining 984 questionnaires was analyzed using SPSS (Illinois, the USA) version 18 and descriptive indices including the mean, frequency and percentages.

4. Results

From the total adolescents participated in this study, 58.5% were male and 41.5% were female. Age group of 14 - 16 and 17 - 19 comprised 68.3% and 31.7% of the population, respectively. According to Table 1, water pipe smoking was the most common habit in different age groups and genders. Cigarettes and alcohol were the second and third frequently substances used by adolescents, respectively. Table 2 shows the incidence of substance use in adolescents. Hookah smoking was the most prevalent habit among adolescents participated in this survey. In total, 21.5% of participants reported initiation of water pipe smoking one year prior to the survey. Alcohol and chewing tobacco, as shown in Table 2, were ranked as the second and third commonly-used substances, respectively. The results also showed the role of family and friends' involvements in attracting and substances abuse and its continuation (Table 3). According to these findings, substance use or misuse by a family member play a major role in lifetime experience of substance use of young people. In comparison, the significant role of friends who used substances is visible at the beginning of drug abuse or misuse by youths. According to the results displayed in Table 4, substance use among adolescents with abnormal general health is two to three times higher than adolescents with normal general health. Statistical Z-test analysis of the two populations showed that lifetime experience of substance use is significantly ($P < 0.05$) higher in youths with abnormal general health compared with those with normal general health for all behavioral items with an exception for chewing tobacco.

Comparably, the onset of chewing tobacco was considerably lower among healthy adolescences than those with abnormal general health ($P < 0.05$). Furthermore, the onset of alcohol and opioids were notably lower in teens with normal general health than those with abnormal general health ($P < 0.05$). However, the differences in the onset of other behaviors were not statistically significant.

Table 1. The Prevalence of Substance Use Among Students (2010-2011)

Behavior	Prevalence, %				
	Total	Age, y		Gender	
		17 - 19	14 - 16	Male	Female
Hookah	35	36.5	34.5	40.2	27.5
Cigarette	11.4	16.7	7.4	9.1	12.1
Alcohol	9.7	14.3	7.6	9.4	10
Opioids	7.9	13	5.5	6.9	9.3
Chewing tobacco	8.4	12.4	6.5	8.8	7.9
Tramadol	8	10.5	6.9	6.8	9.8

Table 2. The Incidence of Substance Use Among Students (2010-2011)

Behavior	Incidence, %				
	Total	Age, y		Gender	
		17 - 19	14 - 16	Male	Female
Hookah	21.5	21.7	21.6	25.2	16.4
Cigarette	3.5	5.1	2.3	3.8	3.0
Alcohol	7.2	11.1	5.4	7.0	7.5
Opioids	4.2	7.8	3.6	4.7	5.3
Chewing tobacco	6.1	8.2	5.1	6.8	5.1
Tramadol	4.7	3.6	3.5	4.1	5.5

Table 3. The Prevalence and Incidence of Substance Use in Students Caused by the Presence of a Family Member or Friend as a Substance User (2010-2011)

Behavior	Onset of Substance Use, %		Lifetime Experience, %	
	Friends	Family Member	Friends	Family Member
	Hookah	31.4	19.3	31.1
Cigarette	9.1	19.0	7.4	28.9
Alcohol	22.5	4.7	5.6	34.2
Opioids	13.7	3.4	4.6	28.2
Chewing tobacco	20.0	3.3	4.7	25.0
Tramadol	15.2	2.6	4.7	26.4

Table 4. The Prevalence and Incidence of Substance Use in Students According to General Health Status (2010-2011)

Behavior	Onset of Substance Use, %		Lifetime Experience, %	
	Abnormal General Health	Normal General Health	Abnormal General Health	Normal General Health
	Hookah	22.6	19.0	40.1
Cigarette	4.8	2.2	14.1	7.3
Alcohol	10.8	3.7	15.9	4.7
Opioids	8.2	2.4	11.2	5.2
Chewing tobacco	7.9	3.9	9.7	6.5
Tramadol	5.7	3.2	11.4	5.2

5. Discussion

The results of this study showed the highest prevalence and incidence of hookah smoking among the participants, 35% of teenagers reported to smoke using water pipe and one in five youths reported to initiate this habit one year before the survey. The survey also revealed that the second and third most-commonly used substance were cigarette and alcohol, respectively. The results also showed that adolescents may adopt many of their behaviors influence with their family members and friends. According to the findings, the use of substances by other family members plays a strong role in teenagers' choice of drugs. In comparison, a network of friends who use drugs plays an essential role in imitation of substance use. Furthermore, adolescents with abnormal general health were two to three times more likely to start using or continuing substance use than the adolescents with normal general health. Overall, the present study demonstrated that in the sample of adolescents, the three most common habits were water pipe smoking, cigarette smoking and alcohol use. According to these findings, one-third smoked using hookah among those 11.4% often/usually smoked and about 10% often/usually drank. A number of previous studies revealed the pattern and prevalence of substance use varied indifferent countries and even different regions of a country. Cigarette smoking and alcohol use were the common habits that were reported by many of aforementioned national and international studies. Nevertheless, this study along with some of recently published studies in other parts of Iran, reports the popularity of Hookah smoking among teenagers (15-22). A study on American students showed that 38.7% had experienced alcohol and 23.1% marijuana, 30 days before the survey (17). In Japan, 40% of the Japanese high school students consumed alcohol in their lifetime (18). In comparison, a study in Hong Kong on adolescents between 13 and 18 years of age showed that 30% of them used illicit substances frequently (15). This discrepancy could be seen in other countries such as Ireland where only 8.9% of Irish adolescents (with the mean age of 14) smoked cigarettes (16).

This inconsistency is similar between studies conducted in different parts of Iran. A study on substance use among the young population and adolescents in the city of Tehran showed that the main consumed substances were alcohol and then stimulants (20). In line with these results, a survey in Rasht (2005) reported alcohol and cigarettes as the first and second most prevalent substances consumed by students, respectively (20). Ghavidel in the city of Nazarabad demonstrated that the high prevalent consumed substances were respectively cigarettes, alcohol, opium, and psychoactive drugs (20). The most recent survey (2012) on the adolescents aged 13 to 18 years in ten provinces of Iran also

revealed that 14.7%, 9.8%, 1.4%, and 2.5% had experienced cigarettes, alcohol, Opioids, and other substances, once in their lifetime, respectively (8). In contrast to the abovementioned studies, in the city of Jahrom (2010), a study showed that 9.4% of senior high school students and 12.7% of preuniversity students had consumed tobacco (21). Notably, like the current study, hookah (65%) and cigarettes (46%) were the high prevalent substances among the study population in Zarandieh, Iran (20, 21). Comparably, most of available evidences along with the present study suggest various patterns of substance use by both genders and different age groups.

The dissimilarity in the prevalence and pattern of substance use among adolescents of different countries or different region of a country as well as different genders and age groups may be due to different sample characteristics, traditional and cultural backgrounds, and socioeconomic environments. A clear example for this could be explained by the findings of a research (2012) in the city of Bandar Abbas, Iran, which showed that 98.4% of the adolescents over 15 years old were exposed to environmental (second hand smoke) cigarettes smoke and 93.5% to environmental hookah smoke (23). The highest tendency of adolescents towards water pipe smoking in recent years in Iran might be due to its easy availability and high environmental exposure.

This study also indicated the essential role of family members and friends in imitation and continuation of substance use. Similarly, Ghodsi demonstrated that there is a strong relationship between smoking cigarettes and the friends who smoke cigarettes (24). The majority of other studies have also demonstrated the high influence of a close friend on smoking cigarettes, and even higher than that of a family member (24). Comparably, the results of some studies showed that smoker or drug abuser parents could expose their children to a higher risk of substance use through teaching them visually as well as transferring the attitudes to be accepted by their adolescents. Furthermore, substance use by parents affects the family functions and weakens the emotional bonding between parents and adolescents, as it causes failure in surveillance of children's behaviors by parents. Thus, adolescents in these families are at a higher risk to consume illicit substances (8). Huenber and Mancini (2004) also showed that few high-risk behaviors such as smoking cigarettes, drinking alcohol, etc. is associated with the close relationship with parents (25). On the contrary, there has been great emphasis on the point that adolescents' social orientation is more toward their peers than toward parents (26). The researches show that adolescents with friends involved with high-risk behaviors are more likely to get involved in such behaviors (27, 28). There is obvious evidence that adolescents' estimation about their

peers' behaviors is effective. In conclusion, this study provides data on the prevalence of common substance use among adolescents in Southeast of Iran. These findings pointed to the need for more concentrated health promotion campaigns targeting health promoting the behaviors in teenagers, including prevention and cessation of substance use.

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Authors' Contribution

The overall implementation of study design, data management and analysis and manuscript preparation were the results of joint efforts by multiple individuals who are listed as coauthors of this paper. Nour-Mohammad Bakhshani and Mostafa Dahmardei made a substantial contribution on study design and Questionnaire preparation. Fariba Shahhraki-Sanavi and M Mohsen Hoseinbor gave a major contribution on literature review, data collection and data entry. Alireza Ansari-Moghaddam and F Fariba Shahhraki-Sanavi analyzed and interpreted data. Nour-Mohammad Bakhshani, Mostafa Dahmardei and Alireza Ansari-Moghaddam drafted the first version of manuscript. All authors have made extensive contribution into the review and finalization of this manuscript. All the authors read and approved the final manuscript.

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