

## A Household Study on the Prevalence of Substance Misuse in Tehran: The need for other methods to estimate the prevalence

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**Objective:** Substance misuse is a major public health threat in Iran. The total number of addicts in Iran is estimated to be between 700,000 and 4,000,000. A few limited household studies on the prevalence of substance misuse have been performed in Iran.

**Method:** The residents of the sixth district of the municipality of Tehran who were over the age of 15 were selected as the study population. The sample size was 2,705. The instrument of the study was face-to-face interviews.

**Results:** 184(6.8%) of the subjects had used at least one substance in their lives and 142(5.2%) used a substance during the month before the interviews. 132(4.88%), 10(0.37%), 3(0.11%), 5(0.19%) and 4(15%) of the subjects reported the use of alcohol, opium, opium residue, heroin, and cannabis respectively during the month before the interviews.

**Conclusion:** The estimate and profile of substance use are different from other methodologies. This household study indicated lower than expected prevalence of opioids and higher than expected alcohol use. Indirect estimation methods are probably more appropriate for the prevalence studies of substance misuse in Iran.

### Key words:

*Data collection, Epidemiologic methods, Iran, Prevalence, Substance related disorders*

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Substance misuse is a major public health threat in Iran. The emergence and rapid distribution of intravenous drug use along with the transmission of infectious diseases such as HIV and HCV have added further load on the burden.

Due to the cultural factors and legal restrictions on substance misuse in Iran, attaining a definite estimate of prevalence and incidence of substance abuse is difficult. In recent years, some estimates have been made based on various studies. Namely, the studies of rehabilitation centers and treatments, the judiciary system and prisons, limited household surveys, rapid situation assessment, opioids testing to issue various licenses and qualifications, for key informants and local authorities, and the annual consumption of opiates in the nation (1-4). According to the mentioned studies, the total number of addicts in Iran is estimated to be between 700,000 and 4,000,000 (4). These estimations, however, are in-accurate and crude.

The Iranian Welfare Organization in collaboration with the United Nation's International Drug Control Program (UNDCP) performed a Rapid Situation Assessment during 1998-1999. In this study, a total of 1,472 substance abusers were recruited from three groups: individuals referring to treatment centers, prisoners and street addicts using snowballing method of sampling. According to this study, the authors claimed that at least 700,000 drug addicts are present in the nation and

the most prevalent substances are opium, heroin, opium residue and hashish (1). In another research, Iran's Health Ministry in collaboration with the United Nations Office of Drug and Crime carried out a study in 2002 with extensive sampling from patients who were referred to emergency wards in 85 Cities across the country (Iran). The result indicated the presence of 3,762,000 opioids users among which 2,547,000 were problem users (2).

There are a few household studies aimed to evaluate the use and misuse of the substances in Iran (5). Household surveys of drug misuse are in the process in several other countries in order to study and monitor drug misuse and abuse. These studies play a role as a part of a whole range of prevalence-estimation methodologies. (6-9).

The household survey studies have some advantages and disadvantages. They may fail to cover high-risk groups such as the homeless or those living in institutions. There may be differences in drug use of respondents and non-respondents. Respondents may not always be honest or accurate about their drug use. Methodological shortcomings such as studying non-representative samples, non-response and measuring errors, inevitably affect the data sources open to drug researchers (10). However, a major advantage of such surveys lies potentially in the application of probability sampling technique which enhances the generalizability of survey's findings to the target

Table 1- The prevalence of substance use in the month prior the interviews †

Substance	Males (n=1175)		Females (n=1526)		Total (n=2701)	
	Number	percent	Number	percent	Number	subject percent
Alcohol	107	9.1%	25	1.63%	132	4.88%
Opium	8	0.68%	2	0.13%	10	0.37%
Opium residue	3	0.26%	0	0%	3	0.11%
Heroin	3	0.26%	2	0.13%	5	0.19%
Cannabis	4	0.34%	0	0%	4	0.15%
Non-responsive	9	0.76%	7	0.46%	16	0.59%

† The total number and percent of opioids users are 14 and 0.52% respectively.

population. Moreover, these surveys enable the flexible tailoring of data collection to the key research issues such as initiation or experimentation, which are not captured by other drug use indicators (6-9).

**Materials and Methods**

The study is a cross-sectional household survey that was carried out in 2004. The study's population consisted of residents of the sixth district of the municipality of Tehran who were over the age of 15. According to the reports of the Iran Center of Statistical Data, the population older than 15 in this area reached 216,921. There are 59,112 families in this area with the mean size of 3.67. This area is selected by "Tehran Institute of Psychiatry and Mental Health Research Centre" for comprehensive population health surveys.

The Sample was selected through multistage stratification and systematic randomization. The "blocks" with the definition of Iran Center of Statistical Data comprised the study clusters. In the first step, 81 clusters were selected randomly. In the next step, all of the household members older than 15 were selected out of every 10 houses to constitute the study samples, using systematic randomization within the clusters. Among the sample size of 2,701, 43.5% were male and 56.5% were female. The mean age of subjects was 40.2 (SD=17.4). Data was gathered using face-to-face interviews.

The interviewers had bachelor degrees in Psychology and they participated in two 4-hour briefing sessions. All of the households in the selected houses were interviewed. If one of the family members was not home, the interviewers would set up a time to meet with that member at a later time. A questionnaire of demographic data and drug use was completed by the household members.

It was designed by the research team and contained questions about the use of opium, opium residue, heroin, cannabis and alcohol by the subjects in the month prior to the interviews and their lifelong use. After two times of referring to a family, if they were not available, then, the next-door neighbor was substituted. The standard descriptive statistics and chi-square test were used to analyze the data.

**Results**

184 (6.8%) of the subjects reported the use of at least one substance throughout their lives, from whom 142 (5.2%) used substances during the month before the interviews. 16 (0.59%) of the subjects did not respond to the questions of substance use.

The most frequently used substances were Alcohol, opioids and cannabis in order of frequency. Only one heroin abuser reported injection. The substances used and their prevalence are shown in Table 1.

The mean age of substance users was 38. The mean age of alcohol, opioids, cannabis users were 36.9, 45.4, and 37.3 respectively. Substance use was most commonly seen in the 21 to 30 age group ( $p=0.01$ ). (Table 2)

**Discussion**

According to this study, 5.2% of the subjects had used at least one substance in the month prior to the interviews and only 0.59% refused to reply to the questions; both of these results were unexpected. Since psychiatric patients tend to be less likely to reply to a survey than controls (11), it is important to note that the non-responders may be substance users. If all of the non-responders are presumed to have positive response to substance use, the number of the individuals who have a positive history of substance use would reach 200 (7.4%) and the number of current users would be 158 (5.8%). Although the generalization of this study's findings to the general population must be done with great caution, it is still far less than what is expected based on other methodologies. This discordance will particularly be more dramatic if we consider that the most common substance use is alcohol and only 14 subjects (0.52%) had used opioids.

It may be presumed that this discordance may be due to

Table 2- Age distribution of the subjects and substance use during the past month

age	Total Number	Alcohol	opium	Opium residue	heroin	Cannabis
<20	412(15.2%)	17	0	0	0	0
21-30	540(20.1%)	43	2	1	2	3
31-40	489(18.2%)	24	1	1	1	1
41-50	514(19.1%)	23	3	1	0	0
51-60	351(13%)	11	2	0	2	0
60<	387(14.4%)	14	2	0	0	0
sum	2693(100%)	132	10	3	5	4

the illegality of opioids use in Iran. According to Iran's laws, the users of opioids are considered criminals if are not under treatment.

But the report of alcohol, which is also illegal, indicates that other factors such as stigma should play a more important role. Using opioids is a social stigma and people try to hide it even from their families. The exclusion of high risk groups such as the homeless may add to this discordance.

Although Abnet et al. reported a high validity of self-reported opium use in a population at a high risk for esophageal cancer in Gonbad (sensitivity = 0.93, specificity = 0.89) (12), it seems that household surveys underestimate the real substance use in the community. The low sensitivity of household surveys to estimate the prevalence of substance use has been replicated in other studies (13). Colon et al. studied the validity of cocaine and heroin use in the community. In their study, the hair test-based estimate for heroin use was 2.9 times the rate generated from the interview reports. The sensitivity for detecting heroin use was 33.3% for recent use and 66.7% for lifetime use. In other words, respondents whose tests were positive, were somewhat more willing to disclose lifetime use than recent use. The 2.9 figure is the least amount that had to be multiplied to the rate of the present study to come close to the real prevalence.

Furthermore, in this study, the positive response to substance use was higher in recent time than in the past. In other words, subjects were not willing to show the problem of substance use as a chronic and long-lasting condition. This may be comprehensible in the frame of denying the longevity of the problem.

Only one of the subjects in this study reported injecting substance use. This finding should be treated with great caution since injecting drug users are more likely to be homeless and less likely to live with their families (4).

According to this study, the most common substance used is alcohol. This finding is not in concordance with previous studies using other methodologies. Alcohol use is both forbidden by law and by Islam, the most common religion of the country. Therefore, the alcohol users do not make it public and probably deny or underreport using it especially when they are questioned in surveys and studies.

According to these presumptions, the authors suggest a much higher prevalence of alcohol use in the community and alcohol abuse and dependency may be considered as "hidden epidemic" in Iran. This is the case while selling any alcoholic beverages is illegal. Therefore, they are either smuggled in to the country or are house-made.

It may be concluded from this study that in Iran, the household study is not an appropriate method for measuring the prevalence of substance misuse. Similarly, in some other countries, this measurement should rely on the indirect methods of estimation such as multiplier-benchmark calculation, capture-recapture or synthetic estimation methods (14).

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