Prevalence of Drug Abuse in India through a National Household Survey

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Abstract

Nowadays use of various drugs of abuse is a major public health problem in developing countries like India. The present article is based on the data under a study, National Household Survey of Drug Abuse (NHSDA) in India sponsored by the Ministry of Social Justice and Empowerment (Government of India) and the United Nations Office of Drugs and Crime (UNODC) that was undertaken with the objective of evaluating extent of use of various drugs of abuse in India. A total of 40697 males (12 to 60 yrs old) from all randomly selected households through multistage random sampling approach living in erstwhile 25 states of India (as defined by the 1991 Census) were interviewed face to face by trained interviewers using a questionnaire specifically developed and validated for this study. The weighted prevalence of ever use of any drug was 63.7\% and that during last 30 days was 61.2\%. Tobacco was the most commonly used psychoactive substance, 56\% ever used and 53.8\% used in the last 30 days. Prevalence of ever use of alcohol was 19.6\%, whereas in the last 30 days it was 15.5\%. Percentage of cannabis use, ever and in the last 30 days was 3.8 and 2.7\% respectively. Use of opium was only 0.6\% (ever) and 0.4\% in the last 30 days. Heroin use was present in 0.2\% of the male population in both, ever use and last 30 days. Tobacco and alcohol outnumber illicit drug users in terms of extent of their use and, therefore, pose huge public health challenges. There is need for the continuing medical education programs emphasizing hazards of using various drug abuses. Further, lessons learnt from this survey would help improve the design and implementation of the subsequent surveys.

Keywords: substance abuse; licit drug; illicit drug; data collection instrument; sample weights

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Introduction

Substance abuse is still one of the foremost public health and social problems and is responsible for a large proportion of preventable morbidity and mortality. This is evident by the Global Burden of Disease study (Murray and Lopez, 1997), which found that mental and addictive disorders are among some of the most burdensome disorders. Many nations thus have conducted household surveys and other methods to determine the extent of substance abuse that leads to
effective policy making and ultimately aim at controlling the public health situation (Coulthard et al., 2002; Substance Abuse and Mental Health Services Administration, 2004; Australian Institute of Health and Welfare, 2002). In India the information gathered so far is based primarily on epidemiological studies conducted at various times and at no more than a few sites at one time. The limitation of such data is obvious. First, it does not reflect the national burden and second, it has at the most only regional policy implication. It became possible to conduct a nationwide survey, National Household Survey on Drug Abuse (NHSDA), on the extent of substance use and its related disorders through the efforts of the Ministry of Social Justice and Empowerment, Government of India (GOI) and the United Nations Office on Drugs and Crime (UNODC). This study is one of various components under the National Survey of the Extent, Patterns and Trends of Drug Abuse in India sponsored by above agencies. India with its massive population, diverse regional characteristics, changing demographic profile and economic disparity also poses interesting questions for researchers in drug abuse.

The sanctioned use of cannabis in certain parts of the country existed for a long time. To a certain extent sanctions also existed for use of alcohol and raw opium. There has, however, been a change in the extent of use of these substances over the years. There exists a body of literature that indicates the use of both illicit and licit substances in the various parts of the country. The data is also available from various sub-groups of the population as college students, non-student youth and general population. The surveys have had some drawbacks. First, most surveys used instruments whose reliability and validity had not been established. Details of training of field investigators were also not reported and the inter-rater reliability is not known (Ray, 1998; Government of India, 1997). Second, these surveys do not provide national level prevalence but only selected regional prevalence. Finally, the comparability across studies is also hampered by the different methodology used by different authors.

In summary, many drug abuse surveys including general population surveys have been conducted in various parts of the country from time to time, but a truly representative national survey has not yet been done. It was therefore needed to carry out rigorously implemented national level survey that estimates the extent and nature of the drug abuse at national level. This study was mainly aimed to measure prevalence of licit (tobacco, alcohol and prescription medications) and illicit (opiates and cannabis) drug use in a representative national sample. It also aimed to study socio-demographic correlates of drug use.

Materials and Methods

The detailed methodological appraisal including study design, data collection instrument, sample design and implementation, sample size and reporting domains, sampling design, details of locating the Primary Sampling Unit (PSU), details of selecting households, procedures for segmentation of large villages and selection of segments, Selection of Census Enumeration Blocks (CEBs) in urban areas, household selection in CEB, sample weights, training of staff, survey mode, overview of interviewing, field quality control, data management and analysis is already published (Dwivedi et al., 2014).
As reported earlier, this study involved a representative sample of males between the ages 12 and 60 years from erstwhile 25 different states of India. To cover the target sample at national level, a multistage probability sampling approach was used. A duly validated (results not listed) instrument developed by the central coordinating centre was used. This instrument was used at each of the 18 coordinating centers involved under the study. The respondents were interviewed using face to face interview method by trained interviewers. To make sure that the work done by each team is acceptable, quality checks were performed in the specific manner: (i) the team supervisor did an independent survey of ten percent of selected households in each of the selected PSU/segment. This also helped for inter-rater reliability, which was carried out simultaneously (results not listed); (ii) the centre coordinators scrutinized the forms for completeness and errors before the data was either transmitted or entered on the pre-circulated Excel worksheet; (iii) at least one visit was made by member of central coordinating center to each site; (iv) midway Review Meetings were organized at Delhi, Calcutta and Chennai to monitor the progress of the survey at all the participating centers; (v) separate visits by central investigators were made to those centers that failed to participate in the midway review meetings; and (vi) manual checking of 10% Proforma at each of the 18 local coordinating centers were also done thoroughly to maintain high quality of data.

In the present study, the planned number of the primary sampling units to be covered was 906 of which 905 (99.9%) could be covered. The total sampled screening included 108,186 individuals across the 19,588 households. The eligible respondents as per the inclusion
criteria were 49,041 of which 40,697 (82.9%) could be interviewed. The national level crude and the weighted prevalence of drug use are reported in this article. The national level weighted prevalence was obtained by assigning weight to each of the individual case within the domain (rural/urban) in the related state (Dwivedi et al., 2014) in few of their differentials were also observed.

Table 3. Drugs use (prevalence) in general population among males (Percent)

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Area (Year)</th>
<th>Tobacco</th>
<th>Alcohol</th>
<th>Cannabis</th>
<th>Heroin</th>
<th>Other opiates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channabasavanna et al</td>
<td>Karnataka 1990</td>
<td>34.7</td>
<td>-</td>
<td>5.1</td>
<td>0.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Singh et al.</td>
<td>Manipur 1992</td>
<td>-</td>
<td>19.8</td>
<td>1.7</td>
<td>1.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Mohan et al.</td>
<td>Jodhpur, Lucknow, Delhi 1993</td>
<td>38.9</td>
<td>15-20</td>
<td>0.3-0.5</td>
<td>0-0.5</td>
<td>0.02-1.2</td>
</tr>
<tr>
<td>Mohan and Desai</td>
<td>Delhi 1993, Delhi 1994</td>
<td>27.5</td>
<td>13.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Mohan et al.</td>
<td>District based survey (U.P., M.P., Manipur, Nagaland, Mizoram, W.B.) 1998</td>
<td>39.0-65.7</td>
<td>3.6-31.8</td>
<td>0.1-6.1</td>
<td>0-1.1</td>
<td>0.0-1.9</td>
</tr>
</tbody>
</table>

Results

In randomly selected 19,588 households, there were 108,186 individuals. The mean number of individuals per household was 5.5± 2.5; and median as 5.0 (range 1-33). The mean age of the population was 27.5 ± 16.9 years with median age being 25 years (range 1 - 105 years). There were 60,259 (55.7%) males and 47,927 (44.3%) females. Most of the subjects were from the nuclear family and about 77% subjects were from rural background. The eligible males as per the inclusion criteria (males 12-60 years) were 49,241 of which 40,697 (82.7%) could be finally interviewed. The overall rate of non-availability of response (including non-respondents) was 17.3 % (Dwivedi et al., 2014). There was however a vast variability in this rate among the coordinating centre

As evident from table 1, there were 28,483 (61%) subjects who had reported use of any drugs in any form in their lifetime. But, only 23752 (58.43%) individuals reported about such use in the last 30 days. Further, the weighted prevalence for ever drug use during life time was 63.7% and during last 30 days was 61.2%. Ever use of licit drugs (tobacco, alcohol and prescribed medications) during lifetime was reported by 24393 (59.9%) where as that regarding illicit drugs (opioids, cannabis, hallucinogens, cocaine, and sedative-hypnotics
Tobacco was the most commonly used psychoactive substance, 56% ever used and 53.8% used in the last 30 days (Table 2). Further, prevalence of ever use of alcohol in the form of whisky, rum or country liquor was 24.4%, whereas in the 30 days it was 19.7%. This makes alcohol the second most commonly used substance in this population. Interestingly 22.3% of the respondents reported using alcohol and tobacco simultaneously. As obvious, prevalence of current drug use is found to be higher for higher age-groups (results not included). Percentage of cannabis use, ever and in the last 30 days was 3.8 and 2.7% respectively (Table 2). In contrast, use of opioids was scarce. Only 0.9% (384 subjects) ever used opium and 0.6% (251 subjects) in the last 30 days. Heroin use was reported by 0.1% of the population under both categories, ever use (59 subjects) and last 30 days (43 subjects). In total illicit substance (opoids, cannabis, hallucinogens, cocaine, and sedative-hypnotics without prescription and injection use) use in last 30 days was reported by less than five percent. Nine thousand and ninety-four subjects, constituting 22.3% of the eligible sample, reported using alcohol and tobacco simultaneously. Of these 27.1% had used opioids in their lifetime and about 2% reported having used in the last thirty days. This constituted about 59% of the individuals who reported opioids use ever in their lifetime and about 14.6% of those who had used opioids in the last one month. Ever sedative-hypnotic use was seen in about 0.3% individuals who had used alcohol and tobacco also in their lifetime. This constitutes 54.2% of the sedative-hypnotic users who had used alcohol and tobacco in their lifetime. Injection use occurred in about 0.3% of the subjects who had used alcohol and tobacco in their lifetime. When calculated as a proportion of the injection users ever, the multi-drug injection users constituted about 60%. As per the criteria used in this study, validated using (Cottler et al., 1998) the Composite International Diagnostic Interview-Substance Abuse Module (CIDI-SAM), but the duration criteria modified to include last 30 days, the dependent use was noted in 29.8% of the tobacco users, 16.8% of alcohol users, 25.7% of cannabis users and 22.3% of opioids users.

**Discussion**

The household survey was conducted by 18 centers across the country under the supervision of central co-coordinating center at Clinical Epidemiology Unit (CEU), All India Institute of Medical Sciences, New Delhi. The study centers were chosen in a way that they reflected the diversity in the country. Before the launch of the study, an instrument was devised incorporating the details of the household, eligible individual, drug use screening instrument and details leading to dependence diagnosis. This was validated against standard instruments. The results of the validation were found to be sufficiently adequate to undertake the study using the questionnaire. This was one of its first kinds of the nationwide survey that included a fairly national representative sample spread over throughout the country which aimed at determining prevalence of the use of licit (tobacco, alcohol and prescription medications) and illicit (opiates and cannabis) drugs, studying socio-demographic correlates of drug abuse and estimating the extent of drug dependence for alcohol and opiates for the
Table 4. Brief comparison of recent surveys on illicit drug use in selected European countries with NHSDA India

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of Survey</th>
<th>Data Collection</th>
<th>Target Group</th>
<th>Age Group (Years)</th>
<th>Lifetime Prevalence / Ever Use of Illicit Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>1999</td>
<td>Demographic Multiplier</td>
<td>Problem opiate or cocaine user</td>
<td>15-54</td>
<td>4.5/1000</td>
</tr>
<tr>
<td>Germany</td>
<td>2000</td>
<td>Household Survey</td>
<td>General population</td>
<td>18-59</td>
<td>21.8%- West German 11.0%- East German</td>
</tr>
<tr>
<td>Greece</td>
<td>1998</td>
<td>Household Survey</td>
<td>General population</td>
<td>12-64</td>
<td>12.2%</td>
</tr>
<tr>
<td>Italy</td>
<td>1995</td>
<td>Urine screening</td>
<td>Male army recruits</td>
<td>15-54</td>
<td>8.3/1000 for heroin IDU</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2001</td>
<td>Household survey</td>
<td>General population</td>
<td>&gt;12</td>
<td>17% for cannabis use</td>
</tr>
<tr>
<td>Spain</td>
<td>1999</td>
<td>Household survey</td>
<td>General population</td>
<td>15-54</td>
<td>5.2/1000 for opiate use</td>
</tr>
<tr>
<td>Sweden</td>
<td>2000</td>
<td>Household survey</td>
<td>General population</td>
<td>15-64</td>
<td>13%</td>
</tr>
<tr>
<td>India</td>
<td>2002</td>
<td>Household survey</td>
<td>General population</td>
<td>12-60</td>
<td>63.7%- any drug use ever 61.2%- any drug use last month 4.7%- illicit drug use last month</td>
</tr>
</tbody>
</table>

country as a whole. Compared to previous regional studies (Table 3) that measured prevalence of drugs of abuse in last 30 days in some parts of India (Ray, 1998), where tobacco use in last 30 days ranged from 27.5% to 65.7%; in this national survey use in last 30 days was 53.8% and ever use 56%, reflecting a similar prevalence pattern. Alcohol use, which is the second highest substance used, ranged from as low as 3.6% to 38.1% in last 30 days; compared to 15.5% in the present study. Extent of cannabis use ranged from 0.1 to 5.1% in the regional studies, whereas it was 2.7% in the current study.

Prevalence of other illicit drugs has always been low compared to the licit drugs. Heroin use was less than 1% in the regional surveys except in Manipur (1%) and it was not different in the current national sample (0.2%). It is not surprising since users of illicit drugs such as heroin tend to form a sub-culture and reside in a defined geographical area or in streets thus requiring other methods of survey to pick them up. However, due to obvious methodological differences as discussed previously, the earlier regional studies are not directly comparable with the present national survey. Several rapid assessment surveys have been carried out subsequently in few districts of India, particularly in the northeast (Government of India, 1997; WHO, 1999; Mohan et al., 2001; WHO, 2001). In all these surveys again, tobacco is the most commonly used substance.
(8.42 to 65.7%) and the prevalence of individual drug use in last 30 days varied from place to place.

One of the national surveys conducted around same time that needs mentioning here is the study of prevalence and extent of tobacco use in India based upon data from the National Family Health Survey (NFHS-2) conducted in 1998-1999 (Rani et al., 2003). This was a cross-sectional, household survey of 315,598 individuals 15 years or older from 91,196 households. Data from this survey provided nationally representative estimates of prevalence, and socioeconomic and demographic correlates of current tobacco consumption, both smoking and chewing among individuals 15 years and older in India. Thirty per cent of the population 15 years or older, 47% men and 14% of women were found to either smoke or chew tobacco. The prevalence was, however, possibly underestimated by almost 11 and 1.5% for chewing tobacco and by 5 and 0.5% for smoking among men and women, respectively, because of use of household informants. When the corrected prevalence is considered, this figure matches similarly with the prevalence of current tobacco use in our survey. Tobacco consumption was significantly higher in elderly population and less educated, a fact replicated in our sample. Compared to our study (results not included), however, both smoking and chewable tobacco consumption was less in Sikhs.

If we look at the overall world picture of illicit drugs, worldwide the total number of drug users is now estimated at some 185 million people, equivalent to 3% of the global population, or 4.7% of the population aged 15 to 64. Cannabis ranks first in terms of the most widely used substance (close to 150 million people), followed by the ATS (Amphetamine-type stimulants). A little more than 13 million people use cocaine, and 15 million use opiates (heroin, morphine, opium, and synthetic opiates), including some 9 million who take heroin (World Drug Report, 2004). In our survey also cannabis was the most commonly used illicit drug, but ATS were very rarely used. This is quite distinct from some neighboring South Asian countries like, Thailand, Philippines, Myanmar and China where heavy production, seizure and use of stimulants have been reported (World Drug Report, 2004).

In the context of individual nations several countries have been conducting, on their own, epidemiological studies including household surveys to measure the extent and prevalence of psychoactive substance use. Office for National Statistics (ONS) conducted household Survey of Psychiatric Morbidity among Adults in the UK in 2000, where overall 30% of adults aged 16 to 74 reported current smoking. About nine out of ten people reported having any alcoholic drinks in the past year and 7% of the sample was assessed as being dependent on alcohol, which is little higher than the estimated figure in our national survey (4.6% dependent use). Eleven percent reported using illicit drug in the past year, and 6% in the past month, which is more than the prevalence found in our survey (4.7% in last month). Cannabis accounted for the majority of self-reported illicit drug use in this population. Nearly one in four (24%) reported ever using cannabis. The next most common drug reported was amphetamine, with 7% saying they had used it at some time. Crack, heroin, non-prescribed methadone and anabolic steroids had been used by less than 1% of the sample. Four per 1,000 had ever injected, 2 per 1,000 had injected regularly and 1 per 1,000 had injected in the past month (Coulthard et al., 2002).
One of the comprehensive sources of information on the prevalence of drug use and related behaviours in the USA is the National Household Survey on Drug Abuse (NHSDA) now known as, National Survey on Drug Use and Health (NSDUH). The survey has been conducted since 1971 at 1 to 3-years intervals of a representative sample of the population aged 12 and over. The NSDUH derives its estimates from a national probability sample of households, which includes more than 98% of the US population. This survey now uses the computer-aided interview (CAI), rather than a paper and pencil method. An estimated 29.8% of the population aged 12 or older reported current (past month) use of a tobacco product in 2003, similar to the rate in 2002 (30.4 percent), but much less than the prevalence found in our survey (53.8%). An estimated 50.1 percent were current drinkers of alcohol in 2003, a figure that contrasts sharply with our finding (21%). About 22.6% participated in binge drinking at least once in the 30 days prior to the survey, and 6.8% were heavy drinkers. A little above 8% of the population aged 12 or older, were current illicit drug users. Cannabis is the most commonly used illicit drug, with a rate of 6.2 percent in 2003. There were an estimated 119,000 current heroin users (SAMHSA, 2004).

The National Drug Strategy Household Survey in Australia conducted in 2001 interviewed 27,000 Australians aged more than 14 years, both males and females. Alcohol was the most accessible drug: four in five Australians aged 14 years and over were offered or had the opportunity to use alcohol in the last 12 months. Nine out of every 10 Australians had tried alcohol at some time in their lives (i.e. 90% ever use, compared to one third in our survey) and four in five had consumed alcohol in the 12 months preceding the 2001 survey. Tobacco was the second most accessible drug: one in every two Australians aged 14 years and over was offered or had the opportunity to use tobacco in the last 12 months. Almost two in every five Australians had used an illicit drug at some time in their lives and almost one in six had used illicit drugs in the previous 12 months. The average age at which new users first tried illicit drugs remained stable at 19 years of age. The most accessible illicit drugs were painkillers/analgesics and marijuana/cannabis 38.4 and 21.0% of the population respectively were offered or had the opportunity to use these drugs. Ever users of heroin accounted for 1.6% of the population (males 2.2% and females 1%) and 0.2% (males 0.3%, females 0.2%) in the last 12 months.

Compared to heroin, amphetamine use was high, 8.9% ever used and in last 12 months 3.4%. Percentage of the population (AIHW, 2002) that ever used injecting drug was 1.8% (males 2.4%, females 1.3%) and in last 12 months 0.6% (males 0.8%, females 0.3%).

The Canadian Addiction Survey (CAS) is another detailed and extensive national survey devoted to alcohol, cannabis and other drug use in Canada to determine the prevalence and frequency of alcohol, cannabis and other drug use in the Canadian population aged 15 years and older. A sample of 13,909 Canadians aged 15 years and above was compiled from a random selection of telephone numbers with a minimum of 1,000 respondents sampled in each province from December 16, 2003 to April 19, 2004. Nearly all had used alcohol in some time in their life (only 7% lifetime abstainer), in sharp contrast to 26% ever use in our national survey. Almost eighty percent of Canadians aged 15 or older reported consuming alcohol in last 12 months. (current
drinking). Lifetime or ever use of cannabis was reported by 44.5% and in last 12 months by 14.1%, which is exceedingly high compared to our sample (3.1 and 2.7%, ever and in last month respectively). Excluding cannabis, the illicit drug most commonly used during one’s lifetime was reported to be hallucinogens, used by 11.4% of respondents, followed closely by cocaine (10.6%), speed (6.4%) and ecstasy (4.1%). The lifetime use of drugs such as inhalants, heroin, steroids and drugs taken intravenously was about 1% or less of the population, almost comparable to prevalence in our survey.

Besides the UK, many European Union (EU) countries have also been collecting data on drug use prevalence within their boundaries. Face to face, postal and telephonic interviews (EMCDDA, 2003) have been conducted in countries such as the Netherlands (1997, 2001), Greece (1998) and Sweden (1998, 2001). Table 4 shows a brief description of most recent surveys on general population about illicit drug use in major European countries. Lifetime prevalence of illicit drug use in these countries varies e.g. from 11% (East German) to 21% (West German), whereas it has been much less in our survey (only 4.7%). One consistent finding in all European nations has been that cannabis is the most commonly used illicit drug, which is true for our national survey also. Lifetime use of cannabis in European countries (5%-31%) in general population surveys has been found to be higher than that of ours. Use of stimulants and hallucinogens (EMCDDA, 2004) has also been fairly present (e.g. 0.5-7% lifetime prevalence of ecstasy use), whereas, their use in our survey has been almost absent (only 10 cases each for stimulant and hallucinogen ever use).

This has been the first national survey specifically designed for estimating problem of drug use throughout India. The study sample has been representative for the whole country and the household face to face interview method was used after randomization through multi-stage probability sampling. We have, in the above discussion compared this survey with the earlier regional surveys as well as with national surveys of other countries. While this process did replicate few findings from previous studies, it has also brought some interesting and important figures for making policy decisions. For example, when “drug use” includes the concept of tobacco and alcohol use, they clearly point towards the proportion with which these two psychoactive substances outweigh the illicit drugs such as cannabis and heroin. Another regional implication is for some of the states where use of a particular substance is exceedingly high, such as tobacco use in Bihar and injecting drug use in Manipur. Finally, lessons learnt from this survey should improve the design and implementation of the next national survey and improved techniques such as computer aided interview and refinement in questionnaires would augment research methodology and aid in estimating the burden of psychoactive substance use in India.

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References


Govt. of India (1997). Rapid assessment survey on alcohol, tobacco and other substances in districts of Thoubal (Manipur), Mandsaur (Madhya Pradesh) and Barabanki (Uttar Pradesh). Report submitted to the Ministry of Health, Nirman Bhavan, New Delhi, India.


Rapid assessment survey on alcohol, tobacco and other substances in districts of Aizawal (Mizoram), Kohima (Nagaland) and Darjeeling (West Bengal) (1999). Report submitted to the World Health Organisation (India Office). Nirman Bhavan, New Delhi, India.