ORIGINAL ARTICLE

Prevalence and Correlates of Substance Use in rural Bhubaneswar – A Community based Cross sectional Study

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Abstract

Background: Substance use is an ever-increasing public health problem in the Indian society. Besides being a personal health risk, it is also a social and economic issue. The present study was undertaken to find out the prevalence and pattern of substance use in rural Bhubaneswar, Odisha. **Material & Methods**: A cross sectional community-based study was undertaken in rural Bhubaneswar in two phases, a pre survey qualitative assessment followed by the quantitative assessment. The prevalence, pattern and habit of use of different psychoactive substances were accessed using a predesigned pretested questionnaire among 574 study participants of greater than ten years of age. **Results**: The prevalence of use of at least one substance was 44.1%. Tobacco (smokeless) was the most commonly used substance followed by alcohol and smoked tobacco. Male gender, age greater than 40 years, joint family and being illiterate were the important predictors of substance use. **Conclusions**: A predominance of smokeless tobacco consumption was found in our study. Family members' being the source of introduction in majority of users is a matter of serious concern. Community based intervention strategies can be helpful in targeting the rural population for deaddiction and delivering a social message for curbing the use of harmful substances.

Keywords

Substance-Related Disorders; Tobacco; Alcohol; Smokeless

Introduction

Substance use is increasingly being seen as a major political, social and health challenge worldwide. As per World Health Organization (WHO), substance use is a practice of consuming harmful and hazardous use of psychoactive substances.(1)

India alone accounted for 15% of the global mental, neurological, and substance use disorder burden according to the Global Burden of Disease Report 2015.(2) Tobacco kills over one million people in India annually and is the fourth leading cause of Non-communicable diseases, which account for 53 percent of all deaths in India.(3,4,5) It's of no surprise

that India is the second largest producer as well as consumer of tobacco in the world.(6,7)

Substance use primarily depends on the nature of the substance used, individual's personality and immediate environment of the user.(8) The most highly used substances include tobacco (smoked and smokeless), alcohol, sedative (hypnotics), natural and synthetic opioids, cocaine, cannabis, amphetamine and hallucinogens. (9) India has one of the highest rates of oral cancer in the world, with over 50% attributable to smokeless tobacco use.(10) The changed pattern of opioids consumption, from natural to synthetic opioids has increased the incidence of psychiatric morbidities in the heavy working class such as daily laborers, agricultural and construction workers.(11)

Aims & Objectives

1. To find out the prevalence and pattern of different type of substance use in rural Bhubaneswar, Odisha.
2. To know their habit, pattern and attitude towards substance use.

Material & Methods

Study type, area and duration: This community based cross sectional study was conducted between June to July 2017 in Ranasinghpur revenue village of rural Bhubaneswar block, Khurda district, Odisha. The village constitutes the rural suburbs of Bhubaneswar city, capital of Odisha.

Sample size and study population: In the absence of relevant data about the prevalence of substance use in rural population of Odisha, a prevalence of 43.4% was taken as per the study carried out by Sarangi *et al* on adolescents in urban slums of Sambalpur, Odisha.(12) The sample size calculated was 531. Contemplating a non-response rate of 10%, final sample size was taken as 574.

Inclusion and Exclusion criteria: Individuals above ten years of age who gave written informed consent for the interview were included. Those critically ill, bed ridden or had cognitive impairment were excluded.

Data collection and analysis:

The study was carried out in two phases:

Pre-survey qualitative assessment:

The various socio-cultural factors that may have an impact on substance use were assessed by qualitative methods to improve our pre-understanding on underlying dynamics in rural settings. Free listing exercise was undertaken with purposively selected key informants having representation from each age group, sex and caste for exploring locally available substances and the reasons for their use. The analysis of free listing exercise was used for questionnaire development and deciding the domains of interview schedule. The findings of qualitative assessment and the WHO ASSIST Version 3.0 questionnaire was used for developing a locally relevant structured questionnaire for the present study.(13) The study tool consisted of questions in the following domains:

a) Socio-demographic profile
b) Different types of substance used in the last one month
c) Behavioural pattern of substance use

It was pilot tested among fifty individuals in an adjacent village and accordingly modified.

Quantitative assessment (Survey):

A complete enumeration of all the households of the village was done with the help of Accredited Social Health Activist (ASHA), health worker of the village. As per the data obtained, the total population of the village was 1413 with 252 households. A landmark i.e temple in the middle of village was chosen for the study and the house nearest to the temple was chosen as the first house for interview. The interviewer moved in the right hand direction and systematic random sampling was undertaken taking every alternate household. All the eligible individuals from a single household were taken. Houses that were locked on three subsequent visits were excluded from the study. The investigator interviewed persons fulfilling the inclusion criteria with the help of the pre-designed and pre-tested questionnaire till the requisite sample size was achieved. Analysis of data was done using Statistical Package for Social Sciences (SPSS) version 17.0. (Chicago, SPSS Inc)

Working definition:

The interviewer asked for substance(s) used by the respondent and the consumption history in the preceding 30 days.

Ethical approval and consent:

The permission for carrying out the study was obtained from Institutional Ethics committee. Interview was conducted in their home at a secluded environment ensuring the privacy of the participant. A female attendant accompanied the interviewer to take care of the ethical problems arising during the interview of female participants, especially adolescent and unmarried females in rural set up.

Individuals were first informed about the study objectives in Odia, the local language and written consent was taken. In case an individual was aged less than 18 years assent was taken from the parents or guardian. The information given by the respondent was not disclosed to anyone including his/her spouse and other family members. People having behavioral and addiction issues and those willing to quit were counselled and advised to seek care from the nearest tertiary care hospital, All India Institute of Medical Sciences (AIIMS), Bhubaneswar

Results

Out of the 574 study participants interviewed, 299 were males and 275 females (47.9%). The majority of individuals were in age group of 19-39 years (42 %, 126 males, 115 females). The socio-demographic characteristics of the study population are described in [Table 1].

Prevalence and pattern of different type of substance use

We found a prevalence of use of at least one substance to be 44.1% (253) in the last one month. The respondents conceded to using tobacco (both smoke and smokeless form), alcohol, cannabis, bhang, marijuana, morphine (afima/brown sugar). Most of the individuals used more than one substance. The used substances were classified as primary, secondary, tertiary according to their order of preferences or choice. The most commonly used primary substance was tobacco in chewed form (82.94%) followed by alcohol (11.51%), whereas tobacco smoking (3.97%), marijuana (1.59%) were less commonly used primary substance. [Table 2] Alcohol was the most prevalent second and third substance (29.3% and 25% respectively) used among multi-drug users. Out of 253, 241(95.2%) respondents were using any form of tobacco. Most of the smokeless tobacco users used gutkha (56%) followed by gudakhu (21%).

More than half of substance users (59.2%) were more than 40 years. Majority of them were males (57.5%). The odds of being male and being a substance user was three times more than that of female. Nearly one fourth (26.0%) of users were illiterate and had five times more risk of being substance user than literates. [Table 3]

Habit, pattern and attitude towards substance use

Most substance users took the substance daily (88.50%) followed by twice weekly (6%). More than half of the users used substance(s) solitarily (62.40%). Maximum users took by oral route (81%) followed by users taking the substance(s) by both oral and smoking (17%). Exclusive smokers were very less in the surveyed sample (only 1.2%). [Table 4]

Only 24 (9.5%) substance users admitted that substance use had led to a decrease in their work efficiency while majority of users had an opinion that substance use had no effect on work. Most of the respondents who used substance(s) admitted to have a member in the family (father/mother / close relative in joint family) who also had a history of substance use (87%). Very minimal (1.60%) number of users had ever tried / contemplated to stop the use of substance(s) during the last one month. Family members were the main source of introduction in users (54%). Next in line were friends, peer group (25%) and personal experimentation/curiosity (18%) on the part of the respondent. [Figure 1]

Discussion

Bhubaneswar is one of the fastest growing cities in India in the backdrop of rapid urbanization. The rural suburbs of Bhubaneswar are in a transition phase with higher rates of migration and influence of urban culture. The easy accessibility of substances for use has worsened the situation more. The prevalence of a single substance use in our study population was found to be 44.1%. It was higher compared to study by Kokiwar PR *et al* (32.7%) in Andhra Pradesh and lower than the study conducted by Sharma B *et al* in rural Punjab (65.5%). (14,15)

Our study showed that majority (84%) were using tobacco in different forms followed by alcohol (63.3%). National Health Survey reported high prevalence for tobacco (55.8%), cannabis (3.1%) and drug use (3.6%) and low prevalence for alcohol (21.4%) and opium use (0.3%).(16) The Global Adult Tobacco Survey- 2 study showed lower rates of tobacco use (28.6%) at the national level in 2016-17. (17)

The present study findings are in stark contrast to the studies in North India by Sharma B and Chavan BS *et al* where the predominant substance use was alcohol.(15,18) Also, noticeably absent was the use of intravenous drug use. This may be due to the socio-cultural traditions and prevalent practices which differ region by region in a vast country like India. Tiwari SC also reported high prevalence for different substance use though in urban areas.(19) Gender wise prevalence of substance use was higher

among males compared to females and almost similar findings were reported by others studies. (15,16,18,20)

Smokeless tobacco was the primary substance of use in majority of the users. The burgeoning epidemics of smokeless tobacco are particularly prevalent in the rural areas because of easy availability, accessibility and comparatively lower prices. The low level of awareness of the harmful effects of smokeless tobacco does not help the cause. Since it's an age old tradition, deep rooted in rural culture many adolescents being lured into it by their families as evident by our study. The rural problem is multifaceted with poverty, stress, economic dependence and greater social acceptability of substance use. As suggested by our study findings, majority of the substance users were not motivated toward help seeking and hence require advice and treatment within their vicinity. This is further compounded by poor access to drug deaddiction centres and lack of stringent implementation of measures of control in rural areas. In view of tobacco control being a major public health challenge in India, the Government has enacted and implemented various tobacco control policies at national and sub national level like Cigarettes and Other Tobacco Products Act (COTPA). Despite national tobacco control policies in India, contextual barriers and lack of proper implementation have enabled tobacco use to persist, especially among rural populations. (21)

Education level of the population, with illiteracy being an important risk factor has been found a significant determinant for substance use as evident in our study as well as in previous studies. (22,23) An interesting finding noticed was family members were the source of introduction in majority of the users. In this context, health education focusing on prevention programs targeting families, particularly adolescents can be an effective intervention strategy. Comprehensive tobacco control programmes with a strong health education component can encourage the substance users to give up the habit along with discouraging the newer generation for falling into the trap. Community outreach programmes with linkages between health workers, community elders and teachers for planning counseling, prevention and rehabilitation activities for substance use should be undertaken. This would be of great help in targeting the masses for deaddiction and delivering a social message particularly in rural areas. The primary health care centres can function as the first point of contact for advice and treatment of substance use disorders by providing specific pharmacotherapeutic and psychosocial interventions to help quitting for those seeking help.

Conclusion

A predominance of smokeless tobacco consumption was found in our study. Family members' being the source of introduction in majority of users is a matter of serious concern. Community based intervention strategies can be helpful in targeting the rural population for deaddiction and delivering a social message for curbing the use of harmful substances.

Recommendation

Community outreach programmes with linkages between health workers, community elders and teachers for planning counseling, prevention and rehabilitation activities for substance use should be undertaken. This would be of great help in targeting the masses for deaddiction and delivering a social message, particularly in rural areas.

Limitation of the study

There are some limitations pertaining to the study. The operational criteria of substance use i.e any time use of substance in last one month has been used previously in different studies. Due to time and resource constraints, the study participants were taken from a single geographic location, hence the external validity of the study needs to be examined with caution. Substance use being a sensitive issue, there can be some degree of under reporting by the users and the cross-sectional nature of the study limits an insight to the causal effect of substance use.

Relevance of the study

The study points to an increase use of smokeless tobacco in rural Bhubaneswar. Family members being a source of initiation in majority of participants' calls for comprehensive community-based outreach campaigns with targeted interventions for different family members.

Authors Contribution

PPG: Designing the study, manuscript writing and analysis; DT: Data collection and compilation, SSS: Data analysis and manuscript writing. VB: Designing the study and critical review of the paper

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Tables

TABLE 1 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF STUDY POPULATION

Characteristic		Total (n=574)	Substance users(n=253)
Gender	Male	299	172 (68.0)
	Female	275	81 (32.0)
Education	Illiterate	85	66 (26.0)
	Primary school	63	34 (13.4)

	Secondary	70	24 (9.5)
	High School	176	64 (25.3)
	Higher secondary	75	27 (10.7)
	Graduate & above	106	38 (15.0)
Occupation	Unemployed	44	19 (7.5)
	Student	114	10 (3.9)
	Home maker	164	47 (18.5)
	Daily labourers	58	50 (19.7)
	Private Job	122	75 (29.6)
	Govt. Job	23	13 (5.1)
	Retired	55	40 (15.7)
Family Structure	Nuclear	428	182 (71.9)
	Joint	146	71 (28.1)
Family income (monthly)	<Rs 10,000/-	38	20 (7.9)
	Rs 10,000- 30,000/-	338	152 (60.0)
	Rs30,000- 60,000/-	152	67 (26.5)
	Rs 60,000- 1,00,000/-	36	8 (3.2)
	>Rs 1,00,000/-	10	6 (2.4)

TABLE 2 PATTERN OF SUBSTANCE USE (N=253)

Type of drug	Primary substance	Secondary substance	Tertiary substance
Smokeless tobacco	82.93%	17.46%	1.59%
Smoke tobacco	3.97%	8.73%	5.95%
Alcohol	11.51%	29.37%	25.00%
Cannabis/Bhang/Marijuana	1.59%	1.59%	1.98%
Morphine (afima/brown sugar)	-	0.79%	0.40%

TABLE 3 ASSOCIATION BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND SUBSTANCE USE IN RURAL POPULATION

Characteristic	Substance user(n=253)	Substance non-user (n=321)	Odds ratio (95% CI)	p value
Age (in years)				
<40	103	238	0.239(0.168-0.341)	0.000*
>40	150	83		
Sex				
Male	172	127	3.244(2.295-4.585)	0.000*
Female	81	194		
Education				
Illiterate	66	19	5.64 (3.28-9.69)	0.000*
Literate	186	302		
Family structure				
Nuclear	182	246	0.781(0.536-1.139)	0.210
Joint	71	75		
Income				
<30000	172	204	1.218(0.859-1.726)	0.055
>30000	81	117		

TABLE 4 BEHAVIOURAL PATTERN OF SUBSTANCE USERS (N=253)

	Number	Percentage
Frequency of substance use		
Daily	224	88.5%
Weekly	12	4.7%
Twice weekly	15	6.0%
Fortnightly	2	0.8%
Company during substance use		
Solitary	158	62.4%
In group	16	6.3%
Both in group and solitary	79	31.3%
Route of substance use		

Oral	207	81.8%
Smoking	3	1.2%
Both Oral & Smoking	43	17.0%
Source of money to buy drug		
Personal	173	68.4%
Personal & Friends	42	16.6%
Debt	20	7.9%
Other	18	7.1%
H/o use in family		
Yes	220	87.0%
No	33	13.0%

Figures

FIGURE 1 SOURCE OF INDUCTION OF DRUG USE