Prevalence of substance use and awareness about its ill effects among people residing in a rural village in Chamarajanagara district, Karnataka

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ABSTRACT

Introduction: Usage of substances like alcohol, tobacco and other additives leads to major socio-economic problems along with many harmful health effects. In India, 14.6% of population use alcohol and 28.6% of the population use tobacco products. This study attempts to assess the prevalence of alcohol, tobacco and substance use and to assess the awareness of ill effects of these substances, among a rural community in Chamrajnagara District, Karnataka.

Methods: A cross-sectional study was conducted in a village in Chamarajanagara district by house to house survey. The sample size was estimated to be 244. Data regarding substance use habits and awareness was collected using a pre-validated, semi-structured questionnaire by interview method and was analysed using SPSS Version 23.

Results: The total prevalence of substance use was found to be 27%. Among the study participants, 22% have used tobacco at least once in a lifetime and prevalence of alcohol use was 8.2%. A minority of 1.2% have used other substances also. The most common reasons for initiating and continuing substance use were peer pressure and time pass or leisure. Among the total study population, 80.7% and 77.7% were aware of the health problems related to tobacco and alcohol respectively.

Conclusion: Regardless of the high awareness of health problems related to alcohol and tobacco use, the usage was high among the rural population. So more effective behavioural change communication strategies should be designed and implemented in the area to improve the practice among the rural population.

1. Introduction

Psychoactive substances refer to those substances which when taken or administered into one's system affects the mental processes.¹ The harmful use of psychoactive substances like illicit drugs and alcohol refers to substance abuse. Repeated substance use can further pave the way to dependence syndrome which is an aggregation of physiological, behavioural and cognitive dysfunction with a constant desire to take the drug, a higher priority being given to the drugs over daily activities, increased tolerance and physical withdrawal state.² According to the World Health Organization, 275 million people have used some illicit drug at least once in 2016. Globally, alcohol use accounts for 3.3 million deaths every year.³ In India 62.5 million people consume alcohol. It is a major risk factor for cardiovascular diseases, cancers, road traffic accidents, liver and pancreatic diseases and psychiatric problems and dependence.⁴ The adverse effects of alcohol also includes physical and

mental harm to family members, co-workers and the general public.⁵ Change in lifestyle, stress, increased availability and peer pressure have all been found to affect this behaviour.⁴

In India 28.6% of the population use tobacco. 8 lakh people in India die every year due to tobacco-related diseases.⁶ In Karnataka, 22.8% population use tobacco in some form.⁷ Tobacco is used in cigarettes, bidis and smokeless forms like khaini, pan and gutka. Khaini and bidi are the most commonly used forms in our country. On an average, an Indian smokes about 6.2 cigarettes per day while in the lower socio-economic group, the use of bidi is much higher. 70–80% of male smokers' smoke at home increasing the risk of passive smoking.⁸ According to Global adult tobacco survey (GATS) 2016–2017, in India, 92% of adults believes that smoking causes serious illnesses and 96% believe that smokeless tobacco can cause serious illness.⁷

Globally, 31 million people have drug use disorders.³ According to the world drug report 2016, the prevalence of cannabis, opiates and

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amphetamine use in south-east Asia was found to be 0.6%, 0.3% and 0.6% respectively.⁹ The problem is more rampant in adolescents with data suggesting that among the cannabis and opium users of our country, 3% and 0.1% belong to less than 18 years category respectively.¹⁰ Keeping this background in mind, the aim of this study was to assess the prevalence of alcohol, tobacco and substance use and to assess the awareness of ill effects of these substances, among a rural community in Chamrajnagara District, Karnataka.

2. Methods

A study of cross-sectional design was conducted in a rural village in the district. The sampling method chosen for the study was multistage random sampling. Among the three talukas of Chamaraganagara district, Kollegala taluk was selected randomly to perform the study. The study area, Ramapura village was selected randomly by lottery method from the Kollegala taluk. The sample size was estimated to be 244 using the prevalence of substance abuse of 72.5%,¹¹ observed from a similar study in a rural population in the country using the formula $4pq/d^2$ where p = prevalence of substance abuse (72.5%), q = 100- p (27.5%) and d = allowable error (5%). A non-response rate of 10% was also taken into account while calculating the sample size. The study was conducted for a period of two months in Ramapura village of Chamaraganagara. The centre of the village was identified by the observers with the help of local residents and all four directions were noted. One direction was selected by simple random method and all the houses in that direction was selected for the study. All the residents in a house with a minimum age of 15 years and permanently residing in the area were included and residents not willing to participate were excluded from the study. An ethical clearance was obtained from institutional ethical committee prior to the study. An informed consent was taken from the study participants before the process of data collection.

Demographic details, habits of tobacco, alcohol or any other addictive substance use, awareness about ill health effects of the same were collected using a pre-validated, semi-structured questionnaire by interview method. The Data collected was entered in Microsoft Excel spreadsheet and was analysed using SPSS Version 23 (licensed to JSS AHER). The prevalence's were represented as percentages. Bar chart was used to depict the percentage of awareness about substance use. Chi square test was done to find the associations from the data.

3. Results

Among the 244 respondents, mean age group of the participants were 48 + 15.5years with a minimum age of 15 years and a maximum of 80 years. Out of 244 respondents, 48% were males and 52% were females. Majority of them were illiterate (40.2%) and 32.4% were unemployed. According to modified Kuppuswamy classification 57.4% belonged to upper lower socio-economic class. The predominant type of family noticed was nuclear family (77%) and 84.4% were married.

27% of the study participants reported usage of substance(s) once or more during their life time. The most commonly used substance in the study area was tobacco including smoking and smokeless forms (22%). The prevalence of alcohol use was 8.2% and 1.2% of study participants reported that they have used other substances like cannabis at least once. The prevalence of tobacco use in the study area among males was 45% and females was 8%. While 16.9% of males had ever used alcohol, none of the female participants admitted a history of alcohol intake. Among them 32.8% were using substances under peer pressure followed by 26.9% for time pass.

Association between various socio-demographic variables and substance usage were assessed using Chi-square test and statistical significance noted as shown in Table 1.

It was found that occupation and usage of substances were statistically significant. It showed that 47% of the clerical/shop owners/farmers were using one or the other substance. Among the 27% who are

Table 1

Association between socio-demographic variables and usage of substance(s).

Categories	Ever used substance(s)	Not used substance (s)	p- value
Gender			
Male	58 (50%)	60 (50%)	0.000*
Female	8 (6%)	117 (94%)	
Education			
Profession	1 (100%)	0 (0.0%)	0.314
Graduate & PG	1 (7.7%)	12 (92.3%)	
Intermediate/diploma	7 (19.4%)	29 (80.6%)	
High school	9 (28.1%)	23 (71.9%)	
Middle school	6 (33.3%)	12 (66.7%)	
Primary school	14 (31.1%)	31 (68.9%)	
Illiterate	28 (28.6%)	70 (71.4%)	
Occupation			
Professional	1 (16.7%)	5 (83.3%)	0.000*
Semi- professional	1 (50%)	1 (50%)	
Clerical/shop owner/ farmer	31 (47%)	35 (53%)	
Skilled worker	2 (20%)	8 (80%)	
Semi- skilled worker	7 (36.8%)	12 (63.2%)	
Unskilled worker	19 (31%)	42 (69%)	
Unemployed	5 (6.3%)	74 (93.7%)	
Type of family			
Nuclear	48 (26%)	139 (74%)	0.194
Joint	17 (31%)	38 (69%)	
Three generation family	1 (100%)	0 (0.0%)	
Marital status			
Married	54 (26%)	151 (74%)	0.735
Unmarried	6 (35%)	11 (65%)	
Widowed	5 (31%)	11 (69%)	
Separated	1 (50%)	1 (50%)	
Socio-economic status			
Upper	1 (33%)	2 (67%)	0.65
Upper middle	4 (36%)	7 (64%)	
Lower middle	18 (45%)	22 (55%)	
Upper lower	32 (23%)	107 (77%)	
Lower	11 (22%)	39 (78%)	

*p-value was found to be statistically significant.

reported of substance(s) usage, 42.4% were illiterate. It showed a statistically significant association between sex of the respondents and substance(s) usage with 49.2% of the males using one or the other substance(s). Usage of substance(s) was high among lower middle socio-economic class (45%) and 100% of substance(s) usage were found in those respondents from three generation family. It was noted that those respondents who were separated (50%) and unmarried (35.3%) were into more substance(s) usage than others even though there was no statistically significant association. Among those reported of substance(s) usage, 10 respondents (15.1%) were using both tobacco and alcohol, 2 respondents (3.03%) were using tobacco and other substance (cannabis), and 1 respondent (1.5%) was using both alcohol and cannabis.

Regarding the awareness about health problems related to substance(s) usage, 80.7% were aware of the health problems related to tobacco usage and 77.7% were aware of the health problems related to alcohol abuse as shown in graph 1.

Most of the respondents who were using substance(s) were taking it daily as shown in Table 2.

Among the substance(s) users, around 71.4% of the respondents were using tobacco daily, 61.5% were taking alcohol daily and 50% were taking other substance (cannabis) daily.

4. Discussion

The overall prevalence of substance use among the study population was 27%. The main substances used were different forms of tobacco including cigarettes, bidi, and smokeless tobacco, alcohol and other substances including cannabis. 50% of men evaluated used substances

Graph 1. Awareness about health problems related to tobacco and alcohol usage.

Table 2

Frequency of substance(s) usage.

Frequency	Tobacco	Alcohol	Other substance(s)
Once/twice	14.3%	15.4%	50%
Monthly	8.6%	7.7%	0%
Weekly	5.7%	15.4%	0%
Daily	71.4%	61.5%	50%

at least once in a lifetime while only 6% of women had a history of substance use. The results obtained regarding overall substance usage shows that prevalence was quite less among the study population in comparison with other studies from the rural areas of the country. A study conducted by Ruchi Nagpal et al. among the rural population shows that the prevalence of any addictive substance at least once in a lifetime was much higher (72.5%) among rural population in northern India. The prevalence among males was 65.2% while 34.8% of females reported substance use, which is much higher than the results obtained in this study.¹¹

The prevalence of tobacco use among the rural population of Chamarajanagara district was estimated to be 22% by this study. This includes different forms of tobacco including cigarettes, bidi, and smokeless tobacco or chewable forms of tobacco. While 8.2% of participants consumed alcohol at least once, 1.2% of participants self-admitted the usage of cannabis. The prevalence was alarmingly high among males compared to females. 50% males above 15 years reported having used harmful substances while only 6% of women used any forms of substance.

A survey conducted by Indian Council of Medical Research in 2001 reports that overall prevalence of 'ever used tobacco' in rural areas of the state was 31.3%. The prevalence was 44.7% among males and 16.7% among females.¹² In another study conducted by P Kaur et al. in rural areas of Tamil Nadu, a bordering state to the study area, it was observed that prevalence of tobacco use among males was 60.7% while 15.1% of females used tobacco at least once in a lifetime. In the same study, they also noticed that the prevalence of alcohol use also was high among males compared to females with a prevalence of 69.8% among males and 1.3% among females.¹³ Another study by Payal Kahar, Ranjitha Misra and Thakor G Patel from rural Gujarat shows that the total prevalence of use of tobacco in any form in the study area was 18.2%. The prevalence of tobacco use was much lesser in the rural male population of Gujarat (32.2%) compared to this study group (50%). The prevalence among female population according to the study was 3.3%.¹⁴ A study by B Bhavya et al. in a similar rural setting from the

same state showed that total prevalence of tobacco, including smoking and smokeless tobacco, was 39.3%.¹⁵ A much lesser prevalence of tobacco use was observed in a study conducted in rural, semi-urban, and urban areas of Chennai by Kolappan Chockalingam et al. the overall prevalence in the rural area was only 23.7% which is almost coinciding with the results of our study.¹⁶

A statistically significant association was observed in this study between the habit of substance use and occupational status of the study participants. Tobacco and alcohol use was least among unemployed individuals. This is similar to the observation made by Barik A et al. in a cross-sectional study of a rural population using surveillance data from Birbhum Population Project (BIRPOP).¹⁷

The main reasons for substance use including tobacco and alcohol use were peer pressure and time pass/leisure. 32.8% of respondents who use substances commented that peer pressure is the main reason for initiating and continuing the use while 26.9% of those who use substances showed time pass or leisure as the reason behind using them. On reviewing the existing knowledge pool we observed that similar reasons were quoted by tobacco users in a study done by Ruchi Nagpal et al. in northern Indian rural population. The main reasons for tobacco use according to the study were "timepass", "for kick" and "peer pressure".¹¹ A contradictory observation was made in a study conducted by Daniel AB et al. from a highly literate rural community in southern India where the main reason for tobacco use was claimed to be relieving toothache.¹⁸

In this study, it was observed that 14.3% of respondents who use tobacco use it daily while 8.6% use once in a week and 5.4% use monthly. A vast majority of 71.4% had used it only once or twice. Contradictory to our result, a similar study in rural areas around Bangalore shows that 96% of smokers and 89.2% of smokeless tobacco users use them daily.¹⁵

Among the total 244 respondents, 80.7% were aware of health problems related to tobacco use while 77.7% of study participants were aware of health problems related to alcohol use. A study from northern India gives an awareness of near 75% regarding health problems related to tobacco use and 90% regarding ill effects of alcohol use.¹¹ The Indian Council for Medical Research survey in 2011 shows that in Karnataka, 61.7% of tobacco users and 78.0% of never-users reported knowledge of at least one harmful effect of tobacco.¹² From a study among urban, semi-urban and rural population around it was showed that the awareness about at least one harmful effect of tobacco among the rural study population was 93%.¹⁶ A similar level of awareness (87.4%) was noticed in the rural population of Dehradun district in Northern part of the country also.¹⁹

Strengths and limitations of the study: The study conducted was a community based cross-sectional field survey, where house to house survey of individuals was performed with a pre-structured validated questionnaire. Study participants were recruited using simple random method. Since it was a quantitative study few variables like reasons for substance abuse could not be assessed properly. A qualitative approach would have been better in understanding the personal and social determinants of substance usage.

5. Conclusion

The total prevalence of substance use among the rural population of ChamaraJanagara district was found out to be 27%. Among the total 244 study participants, 22% have used tobacco at least once in a life-time and prevalence of alcohol use was 8.2%. A minority of 1.2% have used other substances also. The most common reasons for initiating and continuing substance use were peer pressure and time pass or leisure. A statistically significant association was observed between substance use and occupational categories of study participants. The least prevalence of substance use was noticed in unemployed individuals. Among the total study population, 80.7% were aware of the health problems related to tobacco usage and 77.7% were aware of the health problems related to alcohol abuse. Regardless of the high awareness of health problems related to alcohol and tobacco use, the usage was high among the rural population of ChamaraJanagara. So more effective behavioural change communication strategies should be designed and implemented in the area to improve the practice among the rural population.

Ethical clearance

Obtained.

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Declaration of competing interest

None.

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