

Research Article

Prevalence of Tobacco use and Nicotine Dependence in a Selected Rural Community of West Bengal India (2021)

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A B S T R A C T

Introduction: From traditional plant-based drugs such as cannabis, cocaine, and heroin to synthetic drugs such as tramadol, consumption of narcotic substances in India has increased manifold in recent years, according to the Global Burden of Disease Study, illicit drugs are estimated to have killed nearly 7.5 lakh people worldwide in 2017 alone. The estimated number of lives lost in India was 22,000. In India, tobacco consumption is responsible for half of all cancers in men and a quarter of all cancers in women, in addition to being a risk factor for cardiovascular diseases and COPD.

Materials & Methods: A non-experimental cross-sectional descriptive research design was adopted. Following ethical clearance data was collected using from 50 participants selected using non-probability purposive sampling, >15 years of age, able to comprehend and respond in Hindi/ English/ Bengali.

Results: Among 240 individuals the overall prevalence of tobacco use was found to be 12.9%. The Majority of tobacco users were above 45 years of age, the mean age of tobacco users was found to be 53.74 years. The pattern of tobacco use revealed that the most common form of tobacco use is chewing tobacco leaves 64.5% followed by beedi 25.80% & cigarettes 9.67%. The mean age of initiation of tobacco use was 21.1 years and the majority of them initiated tobacco use before 20 years of age & the mean duration of use was 30.94 years. The Nicotine dependency was assessed using the Fagerstrom test for nicotine dependence (both for smoked and smokeless forms).

Discussion: Tobacco consumption is widespread in India. Tobacco consumption among different ages is a matter of worldwide concern. Efforts from governmental and non-governmental organizations should be carried to address the issue of nicotine dependence and there is a need to make efforts in research, planning, designing and implementation of need-based interventions.

Keywords: Dependence, Fagerstrom Test, IEC, Nicotine, Tobacco

Introduction

Nicotine is a highly addictive chemical found in tobacco; nicotine dependence is a substance-related disorder which is an obstacle to smoking cessation among smokers. Tobacco use has become an important public health issue worldwide, especially in developing countries. The World Health Organization has reported that 60 million people died between 1950 and 2000 due to smoking-related illnesses, more than the number of deaths in World War II.¹ In India, tobacco consumption is responsible for half of all cancers in men and a quarter of all cancers in women, in addition to being risk factors for cardiovascular diseases and COPD. The World Health Organization predicts that tobacco deaths in India may exceed 1.5 million annually by 2020. WHO also estimated a prevalence of tobacco consumption of all forms at 65% and 33%, respectively, among men and women, based on small-scale studies conducted in the past. While tobacco use among men in the age group of 15-54 years increased from 47.4% to 61.8% in India over the period of 1998-2005 in rural areas, it increased from 33.6% to 50.3% in urban areas during the same period.²

According to the Global Adult Tobacco Survey (GATS) 2010, Current tobacco use in West Bengal in any form is 36.3% of adults; of which 52.3% are males and 19.3% are females. Among that Current tobacco smoking is 39.5% in males and 1.9% in females. At current cigarette smoking was found to be 19.6% of males and 0.4% of females, whereas current bidi smoking was found to be 28.9% of males and 1.6% of females. Current users of smokeless tobacco were 252.8% of males and 17.8% of females. The average age at daily initiation of tobacco use was 18.5 years in males, and 19.2 years in females. Tobacco use is the foremost preventable cause of death and disease globally as well as in India. As per the Global Adult Tobacco Survey (GATS) India, 2010, smokeless tobacco/chewing forms are the most prevalent forms with 206 million Indians using it. As such, the consequent burden of mortality and morbidity due to the consumption of smokeless tobacco is very high in India. Available evidence suggests that India shares the maximum burden of oral cancer globally.

Worldwide half a billion people die due to cigarette use each year, and approximately half of those deaths are in the 35-69 age group. The danger of tobacco smoke is not limited to the smoker; environmental tobacco smoke increases the risk of lung cancer to 30% for non-smokers.³

Several nationwide prevalence studies like the National Family Health Survey (NFHS) and Global Adult Tobacco Survey (GATS) report the proportion of the population using tobacco products in India but nicotine dependence rates are not well documented.⁴

In India, limited data exist on the ill effects of long-term use of nicotine consumed via tobacco products. Similarly, the socio-demographic predictors of tobacco smoking and chewing are poorly understood. Thus, there was a need to determine the prevalence of tobacco use and nicotine dependence among the rural population.

Objectives

1. To assess the prevalence of tobacco, use in the selected rural community of West Bengal.
2. To identify the pattern of tobacco, use among selected rural communities of West Bengal.
3. To determine the level of nicotine dependence among tobacco users in selected rural communities of West Bengal.
4. To create awareness regarding the harmful effects of tobacco use using information brochures among tobacco users in the selected rural community of West Bengal.

Materials & Methods

A non-experimental cross-sectional descriptive research design was adopted. Following ethical clearance data was collected using from 50 participants selected using non-probability purposive sampling, >15 years of age, able to comprehend and respond in Hindi/ English/ Bengali. Individuals suffering from psychiatric illness & Individuals using other substances like alcohol, heroin, cocaine etc. were excluded from the study. 54 households were visited and data was collected over a period of one month. Each member fulfilling the inclusion was asked to participate in the study maintaining confidentiality.

For data collection, the tool consists of two parts-Part A: Demographic Performa consisting of the following items. It consists of 12 items to collect information regarding demography which includes age, gender, the primary form of tobacco use, age of initiation, total duration of use, the major problem faced, ever tried to quit, and motivation to quit. Part B: Fagerstrom test for nicotine dependence (Standardized tool). It consists of a total of 6 items available in two forms- smokeless tobacco use/smoking, time is taken to complete the tool- 10 min & total score = 10.

Table 1. Level of Dependence

Total Score	Level of Dependence
1-2	Low dependence
3-4	Low to moderate dependence
5-7	Moderate dependence
8+	High dependence

Results

Among 240 individuals the overall prevalence of tobacco use was found to be 12.9%. The Majority of tobacco users were above 45 years of age (70.96%). The mean age of tobacco users was found to be 53.74 ± 19.05 years, 93.54% were males and 6.45% were females, 22.58% were educated above matriculation & 54.83% belonged to middle-lower status. The pattern of tobacco use revealed that the most common form of tobacco use is chewing tobacco leaves (n = 20, 64.5%) followed by beedi (n = 8, 25.80%) and other forms like a cigarette, pan etc. (n = 3, 9.67%). The mean age

of tobacco use initiation was 21.13 ± 5.45 years, and most (n = 21, 67.74%) initiated tobacco use before 20 years of age. The Mean duration of use was 30.94 ± 16.06 years as the majority (n = 15, 48.38%) used tobacco for a duration ranging from 21–40 years. The Nicotine dependency was assessed using the Fagerstrom test for nicotine dependence (both for smoked and smokeless forms). 100% of tobacco users were found to have nicotine dependence. The mean score of nicotine dependence was 4.32. The level of dependence among tobacco users ranged from low to moderate (n = 15, 48.38%), moderate (n = 14, 45.16%) and high-level dependence was found in 6.45% (n = 2).

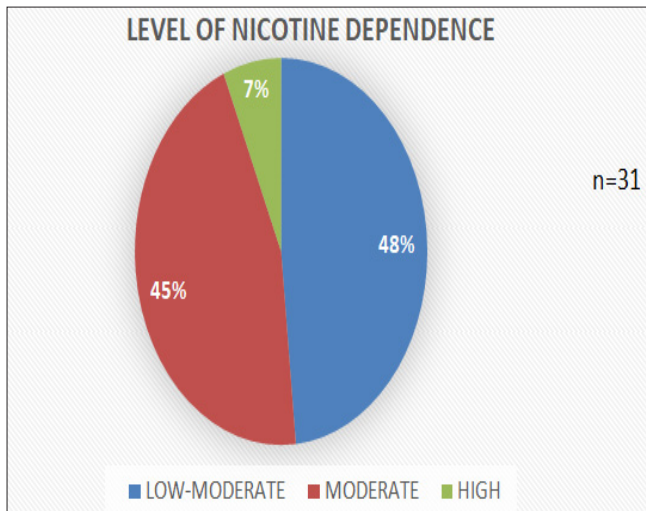


Figure 1. Level of Nicotine Dependence

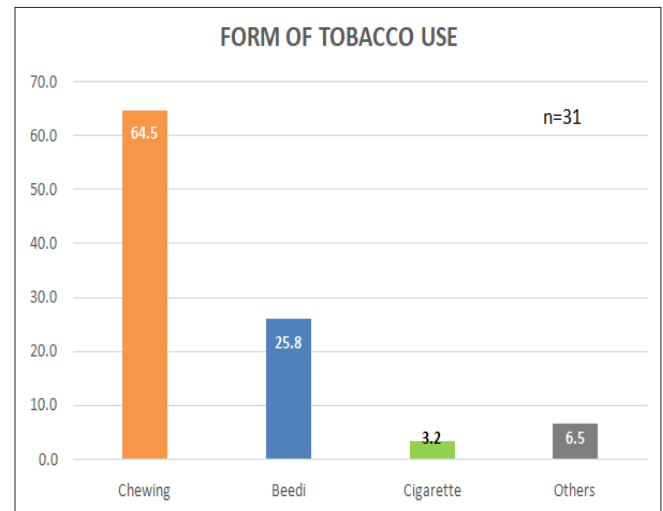


Figure 2. Form of Tobacco Use

Table 2. Association of the Level of Nicotine Dependence with Variables

Dep. Level		Age	A of Initiation	Duration
Low-Moderate	Mean	49.73	19.40	28.40
	Std. Deviation	19.23	2.44	16.78
Moderate	Mean	58.79	23.64	34.00
	Std. Deviation	19.67	6.93	16.53
High	Mean	48.50	16.50	28.50
	Std. Deviation	4.95	2.12	2.12
p-Value		0.421	0.045	0.644
Significance		Not Significant	Significant	Not Significant

Discussion & Conclusion

Tobacco consumption is widespread in India. In the present study, 12.9% of the total study population was found to be using tobacco in some or other form lesser than quoted in the previous study⁵ (23.7%). The prevalence of tobacco use was more in late adulthood which is contrary to the secondary analysis (National Family Health Survey 1998-99) done by Rani et al in the year 2003 who reported prevalence of tobacco use generally declines after the age of 50 years. The significant difference in tobacco use between males and females is found in the present study as similar to the results of Sinha et al (2003) who reported high tobacco use among males 74.15% than females 45% in a rural population in Bihar. Similar sex differences were noted in other studies also.⁶ In the present study, the average age of initiation of tobacco use was 21.13±5.45. The prevalence rate of tobacco uses and nicotine dependence was highest in the low educational status group belonging to the lower socioeconomic class which is similar to Hu M C et al. (2006) in U S.⁷

The major problem faced by the respondents was physical in nature followed by social problems which are in contrary to a study in Kerala where it was concluded that there is no significant relation between tobacco usage and general health ($p>.05$).⁸ The willingness to quit tobacco use was very low (12.9%) as in a study by Sargent et al (1998) who reported that 25.7% of subjects wanted to quit smoking. All of the study population knew about the problems related to tobacco use but they were unable to quit, insistence from a spouse was the major motivational factor identified contrary to study results depicted by Sharma et al (1990)⁹ and Hymowitz et al (1997) in which health problems were the major motivational factor among tobacco users.

Recommendations

It is recommended improved awareness & eliminate myths about smoking / tobacco use and help individuals overcome nicotine dependence by quitting tobacco usage. The study results reinforce the necessity to strengthen the existing anti-tobacco campaigns and programmers, tobacco cessation and IEC activities that can play a major role in spreading awareness and motivating to quit tobacco usage among the varying population. Also, laws related to the prohibition of smoking in public should be made more stringent to check on the public smoking menace thus putting control over passive smoking too.

Tobacco consumption among different ages is a matter of worldwide concern. Efforts from governmental and non-governmental organizations should be carried out to address the issue of nicotine dependence and there is a need to make efforts in research, planning, designing and implementation of need-based interventions.¹⁰ In

the present study as an interventional measure to spread awareness regarding the harmful effects of tobacco use an informational brochure was distributed among the nicotine-dependent individuals and door-to-door individual counselling was done to reinforce the anti-tobacco message.

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