

Original Research Article

Prevalence, patterns and reasons for ever use of tobacco among adult males in a rural field practice area of a tertiary healthcare institute of Haryana: a cross-sectional study

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ABSTRACT

Background: Tobacco use continues to be a major public health challenge worldwide and remains highly prevalent in rural populations due to easy accessibility and misconceptions regarding its benefits. Therefore, this study estimates the prevalence, patterns, and reasons for ever use of tobacco among adult males residing in a rural field practice area of a tertiary healthcare institute of Haryana.

Methods: A community based cross-sectional study was conducted in the catchment area of Primary Health Centre Agroha, Hisar, Haryana. A total of 350 adult males were selected through systematic random sampling. Data were collected using a predesigned and pretested interview schedule and analyzed using SPSS version 26.0.

Results: Nearly two-thirds (63.1%) of the study population had experimented with tobacco at least once in their lifetime. Of these, 88.7% were regular users and hookah (46.2%) was the most commonly used smoking product. The majority (90.0%) of the participants reported initiating tobacco use between the ages of 15-25 years and multiple reasons (66.1%) were predominantly observed for initiation of tobacco use.

Conclusions: Ever use of tobacco was highly prevalent among adult males in the study area, with most users being regular smokers. Early age tobacco initiation highlights the need for strengthened community-based preventive interventions, tobacco control, and cessation services in rural settings.

Keywords: Adult males, Ever use of tobacco, Patterns, Prevalence, Reasons

INTRODUCTION

Despite decades of tobacco control efforts, tobacco remains a leading public health threat.¹ The global impact of tobacco consumption is alarming, with an annual rise of 8 million deaths worldwide, a figure expected to escalate to 10 million by 2030, disproportionately affecting developing countries where 70% of these premature deaths occur.²

In India, data from the Global Adult Tobacco Survey (GATS) depict a concerning scenario.³ Approximately 19.0% of men, 2.0% of women, and 10.7% (99.5 million)

of all adults are current tobacco smokers. Smokeless tobacco use is prevalent among 29.6% of men, 12.8% of women, and 21.4% (199.4 million) of adults. Combining all forms, 42.4% of men, 14.2% of women, and 28.6% (266.8 million) of adults use tobacco in some capacity. Given this epidemiological context and its enormous health burden, it is essential to understand the detailed patterns of tobacco use in India, especially among adult males.

Tobacco consumption in India is diverse, spreading across various smoked products bidis, cigarettes, hookahs, pipes, and cigars and smokeless forms, notably

paan masala, gutka, and khaini. There exist significant regional and gender disparities; males consistently have higher usage rates compared to females.⁴

Tobacco use remains deeply rooted in rural areas, often sustained by socio-cultural acceptance and myths regarding its benefits, such as stress relief and increased pleasure.⁵ The tobacco industry's aggressive marketing tactics, easy product availability, and cultural normalization perpetuate sustained demand. Additional factors such as familial tobacco use, peer influence, and product accessibility strongly influence patterns of tobacco consumption.⁶ Cultural acceptance and myths concerning tobacco's perceived benefits, especially within rural areas, pose formidable barriers to behavior change and emphasize the importance of culturally tailored interventions.^{4,5}

Despite national tobacco control initiatives and a growing body of research, significant gaps in understanding remain, particularly regarding complex, context-specific patterns of tobacco use among men in rural India. Available studies often focus on urban or broader populations, sometimes neglecting the unique socio-cultural, economic, and environmental factors influencing rural tobacco behaviors.⁵ Keeping all the above facts in mind, need was felt to assess the prevalence, patterns and reasons for ever use of tobacco by adult males in the catchment area of Primary Health Centre (PHC) Agroha, Hisar, Haryana.

METHODS

Study design and area

A community based cross-sectional study was carried out in the catchment area of primary health centre (PHC) Agroha, district Hisar, Haryana. PHC Agroha is one of the rural health training centres of the department of Community Medicine in Maharaja Agrasen Medical College, Agroha. So, taking operational feasibility into consideration, PHC Agroha was selected.

Study period

This study was conducted for a period of 12 months from the commencement of the study.

Study population

Adult men who had been residents of villages that come under the catchment area of PHC Agroha.

Inclusion criteria

Adult men who had been residing in villages under the catchment area of PHC Agroha and were willing to participate in the study.

Exclusion criteria

The eligible population who were not willing to participate in the study, and adult men who were suffering from any mental or severe illness were excluded.

Sample size

The minimum sample size was estimated on the basis of current prevalence (34.5%) of tobacco use among men in any form in Hisar (Haryana) as per National Family Health Survey-5 (2019-2021).⁶

$$n = Z_{\alpha/2}^2 pq / L^2$$

Therefore, the minimum sample size required to conduct the study was 347. In all, 350 study subjects were enrolled in the study.

Sampling technique

The rural field practice area of PHC Agroha caters seven villages, i.e., Agroha, Mirpur, Kuleri, Khasa Mahajan, Fransi, Siwani Bolan, and Sabarwas. Study subjects were selected from the list prepared from the latest survey carried out by the health workers in that area. Further, in order to get the required sample size of 350, fifty study subjects from each village were selected by systematic random sampling from the list.

Study tool

Primary tool in this study was a predesigned and pretested interview schedule for collection of information.

Data collection and analysis

The tool for data collection was administered by the investigators themselves. The data were analyzed by using Statistical Package for Social Sciences software (SPSS version 26.0). Written permission was obtained from the Institutional Ethics Committee for Human Research, Maharaja Agrasen Medical College, Agroha, Hisar (Haryana) to conduct this study. The purpose of the study was explained to the study subjects in their own language before the study.

RESULTS

Nearly two-thirds of the study population had experimented with tobacco at least once in their lifetime (Figure 1).

Among individuals who reported ever use of tobacco, the initiation was predominantly (90%) observed during late adolescence and early adulthood (15-25 years) suggesting early age of exposure as a critical concern (Figure 2).

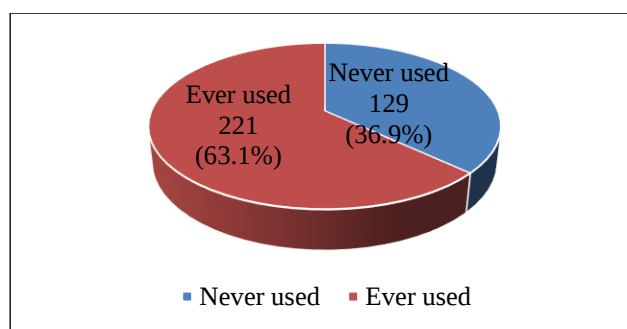


Figure 1: Prevalence of ever use of tobacco among adult males (n=350).

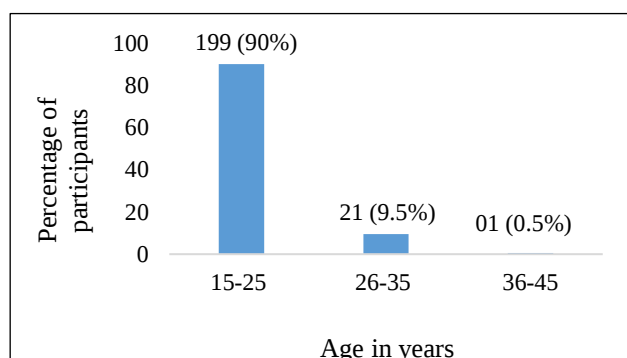


Figure 2: Age at first time of ever use of tobacco in any form (n=221)

Majority (88.7%) of the respondents were regular tobacco users, while non-regular users were very few (11.3%). Analysis of preferences for smoking products revealed that hookah was the most commonly (46.2%) used tobacco product, followed by 28.5% of study subjects who used hookah along with bidi (Table 1).

Table 1: Patterns and types of tobacco products ever used by the study subjects (n=221).

Parameters	Number	Percentage
Status of ever use of tobacco in any form		
Regular users	196	88.7
Non-regular users	25	11.3
Types of smoking products used		
Cigarettes only	09	4.1
Bidi only	33	14.9
Hookah only	102	46.2
Bidi + Hookah	63	28.5
Cigarettes + Bidi + Hookah	14	6.3
Total	221	100

The majority of participants reported initiating tobacco use due to multiple reasons (66.1%), whereas parental influence was the least commonly reported reason for tobacco initiation, accounting for 8.1% of the participants (Table 2).

Table 2: Reasons for ever use of tobacco products by the respondents (n=221).

Parameters	Number	Percentage
Reasons for ever use of tobacco in any form		
Peer pressure	27	12.2
Curiosity	30	13.6
Parental influence	18	8.1
Multiple reasons	146	66.1
Total	221	100

Note: *Multiple reasons include combination of peer pressure, curiosity, and parental influence

DISCUSSION

In the present study, 63.1% of the study subjects reported having ever tried tobacco in any form. The findings of the present study demonstrate substantial concordance with those reported in several comparable investigations. A closely similar prevalence of tobacco use was observed in the study by Jan et al, wherein 63.4% of participants reported ever using tobacco in any form, thereby indicating a comparable level of lifetime tobacco exposure across the two study populations.⁷ In a similar context, Rajaram et al reported an overall tobacco use prevalence of 54.8%, which, although moderately lower than that observed in the present study, remains broadly comparable in magnitude.⁸ Likewise, the findings of Gupta et al, who documented a tobacco use prevalence of 52.6%, and Srivastava et al, who reported an overall prevalence of 50.4%, reflect prevalence levels that are only marginally lower and closely aligned with the present observations.^{9,10} Collectively, these comparisons suggest that the extent of lifetime tobacco use identified in the present study is largely consistent with that reported in other studies conducted in comparable populations, indicating an overall similarity in tobacco use patterns.

In the present study, initiation of tobacco uses predominantly occurred during late adolescence and early adulthood, with 90.0% of participants reporting initiation between 15 and 25 years, followed by 9.5% between 26 and 35 years and only 0.5% between 36 and 45 years of age. Similar findings have been reported in earlier studies. Arunkumar et al observed that 59.8% of smokers had initiated smoking before 25 years of age, indicating a comparable pattern of early initiation, although the proportion was lower than that observed in the present study.¹¹ Likewise, Jan et al documented that 51.1% of participants initiated tobacco use during adolescence (10-19 years), with a substantial proportion commencing use at 20 years or above, further supporting the predominance of early initiation.⁷ Imtiaz et al also reported early initiation of smoking, with 56.1% of current smokers initiating at or before 19 years of age and 43.9% initiating after 19 years.¹² Findings of early age tobacco initiation highlights the need for strengthened community-based preventive interventions, tobacco control, and cessation services in rural settings.

Further, regular use of tobacco predominated in the present study, with 88.7% classified as regular users and 11.3% as non-regular users. A similar dominance of sustained use was observed in Jan et al, where 80% of users reported daily tobacco use, while 20% used tobacco occasionally.⁷ This indicates that in both studies, regular consumption constituted the major pattern of use.

The present study observed that hookah was the most commonly used smoking product, reported by 46.2% of participants. This was followed by combined use of bidi and hookah in 28.5% of respondents. Exclusive bidi smoking was reported by 14.9%, while exclusive cigarette smoking was relatively low at 4.1%. Additionally, 6.3% of participants reported the use of all three smoking products- cigarette, bidi, and hookah indicating the presence of multiple-product smoking behavior in a proportion of the study population. These findings indicate a predominance of traditional forms of smoking, particularly hookah, along with notable mixed-product use. Comparable observations were reported by Jan et al, who documented hookah smoking in 62.2% of participants.⁷ In the same study, cigarette smoking was reported by 24.4% of respondents, while 13.3% reported combined use of hookah and cigarettes. Although the proportion of hookah users was higher than that observed in the present study (62.2% versus 46.2%), both studies consistently identify hookah as the most commonly used smoking product. Furthermore, the presence of combined product use was evident in both studies, with 28.5% (bidi and hookah) and 6.3% (cigarettes, bidi and hookah) of participants in the present study reporting mixed-product use and 13.3% reporting combined hookah and cigarette use in the comparison study. Overall, these findings suggest that hookah use, either alone or in combination with other smoking products, constitutes a significant component of smoking behavior in certain populations.

In contrast to the findings of the present study, several authors have reported differing distributions of smoking product use, with a predominance of bidi or cigarette smoking rather than hookah. Konduru et al reported that among current smokers, bidi was the predominant smoking product, accounting for 54.6% of smoking tobacco use, with other smoking products being less emphasized.¹³ Similarly, Imtiaz et al observed that bidi smoking constituted 17.6% of tobacco use, followed by cigarette smoking at 3.4%, while hookah use was negligible at 0.06%, demonstrating a markedly different distribution from the present study, where hookah use was reported by 46.2%.¹² Annadurai et al reported cigarette smoking as the most common smoking product, accounting for 64.5% of current smokers (95% CI: 58.71-70.29), followed by bidi use in 24.0% (95% CI: 18.83-29.17), with no reporting of hookah use or mixed-product smoking.¹⁶ Comparable cigarette-dominant findings were also reported by Sarkar et al, who observed cigarette use in 47.1% of participants, followed by bidi use in 15.3%.¹⁷

Further contrasting evidence was provided by Alam et al, who reported a cigarette-dominant smoking profile, with cigarette use accounting for 68.5% and hookah use

reported in 12.0% of participants.¹⁸ Corsi et al demonstrated a predominantly bidi-based smoking pattern, reporting bidi use in 65.2% of male smokers and cigarette use in 38.5%, with combined bidi and cigarette use reported by 3.8%.¹⁹ Rushender et al reported an overwhelmingly bidi-dominant pattern, with 82.0% of participants using bidi, without further stratification of other smoking products.¹⁵ Additionally, Gupta et al reported that bidi smoking predominated across all residential settings, with daily bidi smoking reported by 17.8% in urban areas, 36.7% in urban slums, and 44.6% in rural areas, while cigarette smoking remained consistently lower; hookah, pipe, or chillum use emerged as the second most preferred smoking product in rural populations.²⁰ Collectively, these studies demonstrate substantial variation in smoking product use across different populations and settings, contrasting with the hookah predominance (46.2%) and mixed-product use (34.8%) observed in the present study.

With respect to reasons for initiating tobacco use, the present study identified multiple overlapping reasons as the most frequently cited cause (66.1%), followed by curiosity (13.6%), peer pressure (12.2%), and parental influence (8.1%). Comparable findings were reported by Konduru et al, who observed that initiation among current smokers was commonly attributed to fun (42.5%) and peer pressure (39.7%).¹³ Although the categorization of reasons differed, both studies highlight the influence of social and peer-related factors in the initiation of tobacco use.

While the present study reflects a broader, multifactorial pattern of initiation, some studies have reported a more concentrated distribution of reasons. Kumari et al documented that curiosity or peer pressure accounted for 85% of tobacco initiation among males, with other reasons contributing minimally.¹⁴ Similarly, Rushender et al reported peer pressure as the predominant reason (36.0%), followed by work-related tension (23.0%), whereas curiosity and media-related influences were less frequently cited.¹⁵ These variations suggest differences in the relative prominence of initiating factors rather than a fundamental disagreement with the multi-factorial nature of tobacco initiation observed in the present study.

This study has few limitations. The study sample consisted of adult males residing in only the catchment area of PHC Agroha; therefore, we cannot generalize our findings to other areas.

CONCLUSION

The study revealed a high prevalence of tobacco consumption, as nearly two-thirds of adult males reported ever using tobacco, and the majority of these users (more than four-fifths) were regular users. The observed pattern of tobacco consumption is particularly concerning, as it is characterized by early initiation of tobacco use, predominantly in the form of hookah smoking. The findings emphasize the urgent need for strengthened tobacco control efforts at the primary health-care level, as

addressing these gaps is essential for reducing the burden of tobacco-related morbidity and promoting healthier lifestyles in rural populations.

Recommendations

Future efforts should focus on improving community awareness, promoting school- and family-based interventions, ensuring accessible cessation services, and implementing early prevention strategies. Additionally, periodic community-based surveys, qualitative studies exploring motivations and barriers to quitting, and operational research on cessation interventions are needed to generate evidence for refining tobacco control policies and programs.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee for Human Research, Maharaja Agrasen Medical College, Agroha, Hisar (Haryana). Ref. No. MAMC/IEC/2024/53 dated on 18/04/2024

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