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Exploring Tobacco Usage, Prevalence, and its Correlation with Socio-demographic Factors among Adults in Meerut, Uttar Pradesh

Pawan Parashar[1], Varsha Chaudhary[1,*], Saurabh Sharma[1], Sartaj Ahmad[1], Monika Gupta[1], Chhavi Kiran Gupta[2], Kaynat Nasser[3]

Abstract

Tobacco-related fatalities pose a significant public health concern, prompting the formulation of the "Cigarettes and Other Tobacco Products Act (COTPA)" aimed at combating this crisis. Assessing the population's knowledge, attitudes, and behaviors regarding COTPA is vital for its effective implementation. Consequently, this study in Meerut district utilized a cross-sectional community survey involving 183 participants to gather data, highlighting significant associations between age, gender, education, and COTPA awareness. Notably, residence did not exhibit statistical significance. Thus, there's a pressing need to heighten COTPA awareness among vulnerable groups, specifically the younger and less educated segments of the population.

Keywords: Age, education, gender, practice of tobacco residence

INTRODUCTION

Tobacco usage results in five million deaths worldwide each year. According to the World Health Organization (WHO), this surpasses the combined toll of AIDS, alcohol, other substance addictions, and accidents in terms of annual fatalities. It is projected that the number of tobacco-related deaths will rise to 10 million by the year 2025. Approximately, 500 million individuals face premature mortality due to tobacco, with a significant proportion being children and today's young adults. India bears a substantial burden, with one-fifth of global tobacco-related deaths occurring in the country, leading to over 800,000 fatalities and 12 million illnesses annually [1]. Tobacco addiction is the most widespread addiction in the world. Globally, there are almost 1.3 billion smokers, with 80% of them residing in certain countries. India, for instance, has over 300 million smokers. Tobacco use stands as the primary cause of death worldwide. Notably, tobacco is the only legally available consumer product that leads to fatalities when used exactly as directed [2, 3].

***Author for Correspondence**
Varsha Chaudhary
E-mail: mahichaudhary25@gmail.com

[1]Professor, Department of Community Medicine, Subharti Medical College, Swami Vivekananda Subharti University, Meerut, Uttar Pradesh, India
[2]Associate Professor, Department of Community Medicine, Subharti Medical College, Swami Vivekananda Subharti University, Meerut, Uttar Pradesh, India
[3]Assistant Professor, Department of Community Medicine, Subharti Medical College, Swami Vivekananda Subharti University Meerut, Uttar Pradesh, India

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Despite increased awareness about the harmful health effects of tobacco due to extensive media campaigns, its sole role in achieving a tobacco-free India is questionable. While the tobacco industry argues that it creates employment opportunities and contributes to local and national economies, its predominant impact on any nation is marked by suffering, disease, death, and economic losses. At

present, the global expenses associated with tobacco use reach hundreds of billions of dollars annually. Following extensive deliberations, the World Health Assembly officially ratified the Framework Convention on Tobacco Control (FCTC) in May 2003. This convention includes provisions for member nations to establish comprehensive legislation aimed at curbing the tobacco epidemic [4, 5].

India was among the early adopters of the Framework Convention on Tobacco Control (FCTC). On May 18, 2003, the Government of India enacted "The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) Act (COTPA)." The guidelines associated with COTPA were officially disclosed in 2004. In alignment with this legislation, smoking is prohibited in all public spaces, advertising of tobacco products is forbidden, and the sale of tobacco items to minors and within 100 yards of educational institutions is also restricted [6].

In the early years, the enforcement of this legislation was largely ineffective. The Government of India assessed the situation and amended the law, effective from October 2, 2008, incorporating additional provisions to enhance the implementation of the smoke-free law [7].

Limited research has been conducted on the awareness and attitudes of the public regarding the COTPA. To ensure the effective implementation of tobacco control measures, it is crucial to have comprehensive knowledge about the awareness, attitudes, and practices of the population towards tobacco control. Hence, the present study was undertaken among adults in Meerut District with the objective to find the prevalence of tobacco users, form and type of tobacco commonly used, and association of tobacco with age, gender, education, and residence.

MATERIALS AND METHODS

The current investigation constituted a community-based cross-sectional survey conducted in the Meerut district, following approval from the Institutional Ethics Committee of Subharti Medical College, Meerut, Uttar Pradesh. The study involved adults aged 18 and above who expressed willingness to take part. Before the interview, every participant was offered written consent, and they had the choice to either willingly take part in or abstain from participating in the study. The sample comprised 183 individuals, and data collection was carried out through interviews conducted in the local language, utilizing a structured schedule.

Information on socio-demographic variables, level of education, gender, and residential area was obtained.

Statistical analysis was done using R. Software version 2.6-2, after entering the data in Microsoft Office Excel, 2007. Relevant variables were analyzed by computing proportions and percentages. Statistical significance was determined with a p-value of less than 0.05.

RESULTS

Among 183 participants of the study, 110(60.10 %) were male and 73 (39.90%) were female.

The majority of 106(57.92%) belonged to the age group 20–31 years. The literacy rate among the participants was found to be very high in this study. Maximum of 110(60.10 %) were graduates and 30 (16.39%) respondents were professionals although 27(14. 75%) were having education up to 12th standard. 158 (86.33%) of respondents belonged to urban areas and 25 (13.66%) belonged to rural area. Regarding the current use of tobacco products, 80 (43.71%) of the study population was found to be currently exposed to tobacco products. Out of them, 50 (62.5%) were current smokers, and 30(37.5%) currently using smokeless tobacco (Tables 1 and 2).

Table 1. Socio-demographic variables of respondents (N=183).

Socio-demographic variables	No. and %
Age-wise distribution	
18–20 years	37 (20.21%)
21–30 years	106 (57.92%)
31–40 years	32 (17.48 %)
More than 40 years	08 (4.37 %)
Gender-wise distribution	
Male	110 (60.10%)
Female	73 (39.90%)
Education-wise distribution	
Illiterate	02 (1.09%)
Up to 5th standard	04 (2.18 %)
Up to 12th standard	27 (14.75 %)
Graduate	110 (60.10 %)
Postgraduate	10 (5.46%)
Professional	30 (16.39 %)
Residence-wise distribution	
Urban	158 (86.33%)
Rural	25 (13.66%)
Practise of tobacco use	
Current users	80 (43.71%)

Table 2. Form and type of tobacco used.

Form of tobacco used	Number (%)
Smoke users	50 (62.05%)
Smokeless users	30 (37.05%)
Types of tobacco smokers (n=50)	
Bidi	18 (36%)
Cigarette	30 (60%)
Hukka	02 (04%)
Tobacco smokeless (n=30)	
Gutkha	15 (50 %)
Khaini	04 (13.33%)
Betal chewing with tobacco	06 (20%)
Jarda	05 (16.66 %)

Table 3. Duration of tobacco use.

Duration of tobacco use (in years)	No. (%)
<5	45 (56.25%)
5–10	20 (25%)
10–15	10 (12.05%)
15–20 and above	05 (16.25%)

Within our investigation, cigarette smoking emerged as the predominant form of tobacco use, constituting 60% (30 individuals). Bidi smoking, at 36% (18 individuals), ranked as the second most prevalent form of tobacco consumption. Additionally, tobacco chewing represented 37.5% (30 individuals) of the overall tobacco consumption. Gutkha chewing 15 (50%) was the major form of tobacco chewing in this study. Betal chewing with tobacco 06 (20%), khaini 04 (13.33%) and a combination of tobacco with areca nut and lime preparation Jarda 05 (16.66%) were also popular and highly addictive tobacco products.

In our research, over half of the participants (56.25%) reported a duration of tobacco use of less than 5 years. Notably, a statistically significant difference was observed in the prevalence of tobacco use among individuals aged 31–40 years, with more than half (53.12%) in this age group engaging in tobacco consumption compared to other age groups. The use of tobacco and related products was statistically significantly higher among males (70%) than females. Furthermore, our study revealed a statistically significant increase in tobacco use with higher levels of education. While smokers were slightly more prevalent in urban areas compared to rural areas; this difference did not reach statistical significance (Tables 3 and 4).

Table 4. Association of tobacco use with age, gender, education, and residence.

Variables	Tobacco users	Tobacco non-users	Total	P value
Age-wise distribution (in years)				
18–20	03 (8.10%)	34 (91.89%)	37	P = 0.000028
21–30	19 (17.92%)	87 (82.07%)	106	
31–40	17 (53.12%)	15 (46.88%)	32	
More than 40	01 (12.5%)	07(87.15 %)	08	
Gender-wise distribution				
Male	77 (70%)	33 (30%)	110	P = 0.00001
Female	03 (4.10%)	70 (95.89%)	73	
Education-wise distribution				P = 0.0029
Illiterate	00 (00 %)	02 (100 %)	02	
Up to 5th standard	00 (00 %)	04 (100 %)	04	
Up to 12th standard	15(15.55%)	12 (44.44%)	27	
Graduate	29 (26.36 %)	81 (73.63%)	110	
Postgraduate	05 (50 %)	05 (50%)	10	
Professional	18 (60 %)	12 (40%)	30	
Residence-wise distribution				
Urban	154 (98.74%)	02 (1.26%)	158	P = 0.32
Rural	24 (96%)	0 1 (4 %)	25	

DISCUSSION

In our study, 80 (43.71%) of the study population was found to be currently exposed to tobacco products. The present study observations were higher than the national averages as observed in Global Adult Tobacco Survey (GATS) 2010 [8].

In our research, the predominant form of tobacco smoking is cigarette use at 30 individuals (60%), followed by bidi smoking at 18 individuals (36%). Tobacco chewing constitutes 30 individuals (37.5%) of the overall consumption.

Gutkha chewing 15 (50%) was the major form of tobacco chewing in this study. Betal chewing with tobacco 06 (20%), khaini 04 (13.33%) and a combination of tobacco with areca nut and lime preparation Jarda 05 (16.66%) were also popular and highly addictive tobacco products.

As per the recommendations from the Tobacco Control Foundation of India, beedi smoking holds the highest prevalence as a form of tobacco use, constituting 54%. Cigarette smoking ranks second with a prevalence of 16%, and tobacco chewing contributes to 30% of the overall tobacco consumption. The primary form of chewing tobacco is paan with tobacco. Additionally, highly addictive preparations such as dry tobacco, areca nut mixtures, like paan masala, gutkha, khaini, and mawa are also widely popular [9].

Within this study, a statistically significant observation revealed that over 53.12% of participants in the age group of 31–40 years engaged in the use of tobacco and its related products compared to other age groups. Furthermore, a significant gender disparity was noted, with a higher prevalence of tobacco product used among males (70%) compared to females. Education-wise, there was a statistically significant increase in the use of tobacco products with higher levels of education, and urban residents (98.74%) exhibited a higher prevalence compared to those in rural areas. These findings align with results reported in other studies [10, 11].

CONCLUSION

Our study revealed that 43.71% of participants are current smokers. Therefore, it is imperative to intensify efforts to raise awareness about the Act, particularly among vulnerable groups such as the younger population, individuals with lower socioeconomic status, and those with lower levels of education. The implementation of the Act should be earnestly carried out to discourage the population from succumbing to the tobacco epidemic. Initiatives should be undertaken to enhance awareness, especially among vulnerable groups like the younger age demographic and less educated individuals.

Limitations

The current study was a community-based cross-sectional investigation conducted in both urban and rural areas.

Source of Funding

None

Source of Conflict

None

Ethical Clearance

Ethical clearance was obtained from ethical committee of Subharti Medical College, Meerut.

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