

# Estimation of the Prevalence of Tobacco Consumption among Rural Women in South India using Mixed Methods Analysis

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## Abstract

**Background:** Tobacco consumption is a public health problem in Tamil Nadu. **Objectives:** The current study was done to estimate the prevalence of tobacco consumption among rural women and to identify the sociodemographic characteristics with high prevalence of tobacco consumption. **Materials and Methods:** It was a community-based cross-sectional descriptive study conducted among women  $\geq 18$  years of age. Mixed methods were employed to obtain the comprehensive picture about the substance use among women. Multistage random sampling method was used to interview 210 women using a semi-structured and pretested schedule. This was followed by key informant interviews, in which nine women were interviewed. Frequency distributions and Chi-square test were employed to study the association. In addition, manual content analysis was done to identify the reasons for the initiation of tobacco consumption and the measures to curb the practice. **Results:** The prevalence of tobacco consumption among the women was estimated as 15.2%. Women in the lower socioeconomic status group showed a higher prevalence of tobacco consumption than the middle and high socioeconomic status group. All 32 (100%) women were consuming tobacco products in the smokeless forms. Further, 28 (87.5%) women were not willing to quit tobacco consumption. **Conclusion:** The prevalence of tobacco consumption among the women was estimated to be above expectation of the national figures. Lower socioeconomic class and poor educational status were found to be major determinants for tobacco consumption among rural women.

**Keywords:** Gutkha, Tamil women, tobacco, tobacco quitting

## INTRODUCTION

The World Health Organization has declared the tobacco epidemic as one of the largest public health threat and a major concern for policy-makers and health professionals.<sup>[1]</sup> This is not only because of the associated mortality each year (7 million) but also due to the increased out-of-pocket expenditure on health, burden on the health system, and impaired the quality of life. In addition, it is an alarming concern that four-fifth of the smokers worldwide are from low- and middle-income nations.<sup>[1,2]</sup>

Tobacco consumption has been linked with the development of variety of illnesses.<sup>[1-4]</sup> Even though, tobacco consumption has been quite common among men, the past few decades have witnessed a rapid surge among women as well.<sup>[5-7]</sup> The epidemiological analysis of various studies has revealed that women not only have a short latent period from the initiation of substance use to the onset or progression of the substance

use disorders but are also even more susceptible to the adverse medical, psychiatric, and social consequences.<sup>[7-12]</sup>

In low- and middle-income nations, owing to the lack of awareness about the adverse effects and social stigma, a significant proportion of women are not able to avail appropriate health-care services.<sup>[13-16]</sup> The findings of the National Family Health Survey-4 revealed that 1.5% and 3% of urban and rural women in the reproductive age group were tobacco consumers in Tamil Nadu.<sup>[9]</sup> However, due to the

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lack of precise estimates regarding the prevalence of tobacco consumption among women in rural settings in India; the policy-makers lack adequate evidence and find it difficult to mobilize the existing resources. Thus, the current study was planned to estimate the prevalence of tobacco consumption among rural women and to identify the sociodemographic characteristics with higher prevalence of tobacco consumption among the study participants.

## MATERIALS AND METHODS

A community-based cross-sectional descriptive study of 6-month duration was conducted in the Sembakkam village, the rural field practice area of a tertiary health care institute of Tamil Nadu. All women above the age of 18 years, residing in the village, and who were willing to be a part of the study were enrolled in the study, while women who were unable to participate due to any reason were excluded from the study.

The sample size of the study was calculated as 210 based on the prevalence of substance use among women in a study done in Northern part of India, which was 22.3%.<sup>[7]</sup> The multistage random sampling method was employed, and in the first stage, simple random sampling was done using a lottery method, and the first house was selected. This was followed by the employment of a systematic random sampling, under which every third house was selected in the village, till the desired sample size was met. In case, there were no eligible women in the house, the very next house was selected.

### Study tool

A semi-structured schedule was prepared in the English in accordance with the study objectives and subsequently translated into the local language (Tamil) of the study participants and back-translated to English to check for the consistency and the clarity. The schedule was pretested on 20 women, who were also satisfying the inclusion criteria, and they were interviewed by the principle investigator to know about the feasibility of the study and reliability of the tool. Further, based on the reported observations, the data collection tool was modified. The results of the pilot testing were not included in the findings of the main study. The Cronbach's alpha of the tool was 0.839, suggesting that the items had relatively high internal consistency.

### Data collection

#### Stage 1

In the study area, the first household was selected randomly using lottery method, and subsequently, each of the second household in the village was visited in the north to south direction covering the entire village. From each of the selected household, all the women aged above 18 years were interviewed face-to-face using the pretested schedule after establishing a rapport with them. This process continued till the desired sample size was achieved.

#### Stage 2 (key informant interview)

In the second stage, nine key women (viz., three teachers, two

anganwadi workers, one temple priest, one health-care worker, one shopkeeper, and one woman from the postal department) residing in the study area were identified and interviewed face-to-face after developing a rapport with them. They were interviewed regarding two main areas, why do you think women are starting to consume tobacco products; and in your opinion, what measures should be taken to curb the practice of tobacco consumption. The responses were recorded in the form of interviewer notes by a trained female notetaker and were expanded later. These responses were subsequently coded and then eventually categorized.

### Ethical considerations

Ethical clearance was obtained from the Institutional Ethics Committee before the start of the study. Written informed consent was obtained from the study participants before obtaining any information from them.

### Statistical analysis

For the quantitative data, the data entry was done in the Microsoft Excel 2007, and statistical analysis was done using Statistical Package for Social Sciences version 23.0 (IBM, Bangalore, Karnataka). Frequency distributions were calculated for all the variables, and Chi-square test was employed to identify the sociodemographic characteristics with higher prevalence of tobacco consumption. For the qualitative data, manual content analysis was done and inductive approach was adopted.

## RESULTS

The prevalence of tobacco consumption was found to be 15.2% (32/210) among the rural women. Table 1 depicts the

**Table 1: Distribution of socio-demographic characteristics and tobacco consumption**

Sociodemographic characteristics	Tobacco consumption		P
	Yes	No	
Age-group (years)			
18-40	8 (11.4)	62 (88.6)	0.13
41-60	24 (17.1)	116 (82.9)	
Religion			
Hindu	9 (13.6)	57 (86.4)	0.33
Christian	23 (16.0)	121 (84.0)	
Education			
Illiterate (no formal education)	19 (27.9)	49 (72.1)	0.0001
Literate (formal education)	13 (9.2)	129 (90.8)	
Marital status			
Married	27 (16.1)	141 (83.9)	0.25
Single	5 (11.9)	37 (88.1)	
Occupation			
Housewife	14 (13.1)	93 (86.9)	0.18
Others	18 (17.5)	85 (82.5)	
Socioeconomic class			
Lower	17 (24.6)	52 (75.4)	0.018
Middle	8 (8.5)	86 (91.5)	
Upper	7 (14.9)	40 (85.1)	

distribution of the various sociodemographic characteristics and the consumption of tobacco products. It was found that women in the lower economic status group had higher prevalence of tobacco consumption than women who were from the middle to high socioeconomic status. The mean age at the initiation of tobacco was  $27.4 \pm 3.6$  years in the present study, while the mean duration of tobacco consumption was  $13.5 \pm 2.8$  years.

Almost 26 (81.3%) of the women gave a positive history of tobacco consumption, and all women who were consuming tobacco were using in smokeless forms. Further, 5 (15.6%) of the tobacco chewers reported the complaints of development of recurrent oral ulcers, of which only 2 (40%) availed health services. In addition, it was reported that 28 (87.5%) women were not willing to quit tobacco. Table 2 represents the various reasons cited by women for their unwillingness to quit tobacco. All of them responded that tobacco has become a part of their daily lives and thus they do not want to quit tobacco.

Each of the key informant interviews lasted for 20–30 min, and after doing content analysis, the following results were obtained:

Reasons to start the consumption of tobacco products among women: a wide range of potential reasons were identified from the viewpoints of different informants:

### Family attributes

Consumption of tobacco products by father/spouse/brother/grandparents or other relatives; acceptance of the existing practice in the family as a norm; instructions from the elder people to purchase tobacco products from shop and getting some reward in exchange; effective laxative, etc.

### Peers

Friends in school/workplace consuming tobacco products; liking the fun involved in hiding and consuming; school trips or excursions, etc.

### Lack of awareness

About the adverse effects associated with tobacco consumption; no doctor/health-care personnel counsels about the side effects of tobacco consumption; the message printed on tobacco products does not make any sense, etc.

### Myths and misconceptions

Tobacco consumption is not linked with any side effects;

tobacco is good for dental caries; only if you drink alcohol with tobacco, complications results, otherwise no problem; tobacco consumption is good for image, etc.

### Accessibility

Tobacco products are readily available in all shops; affordability; no strict adherence to the rules by the shop owners to not to sell tobacco products to children; continuous presence of tobacco products in home itself, etc.

Measures to curb the practice of tobacco consumption: on performing the manual content analysis of the transcript, following were the targeted stakeholders:

### Family members

Adults and elder members of the family should not consume tobacco or its products at least inside home; neither tobacco products should be available in the home and nor junior members should be asked to get them from the shops, etc.

### Schools/workplace

Teachers should act as a role model and create awareness about the side effects of tobacco, tobacco-free campus, etc.

### Mass media

More frequent display of advertisements highlighting the side effects of tobacco; involvement of personality in mass media campaigns; stars (movies/political leaders/sportspersons) should not consume tobacco products on screen; etc.

### Health sector

Distribution of pamphlets or the use of televisions in health facilities for depicting the message; proper counseling by all levels of health professionals; measures to counter the myths associated with tobacco, etc.

### Miscellaneous

No sale of tobacco products to minors and girls; display of warning messages in the entire village; selection of a group of people from the village itself to create awareness about the adverse effects of tobacco, etc.

## DISCUSSION

The current study was done to estimate the prevalence of tobacco consumption in a rural area. It was found that 24 (75%) of the women from the 41 to 60 years age group were tobacco users. In contrast, the findings of a survey done in Nepal indicated that majority of the women tobacco users were from the age group of 45–69 years.<sup>[16]</sup> This could be due to the specific study objectives in the study done in Nepal, in which estimates were taken from a survey which was primarily done for noncommunicable disease risk factors.<sup>[16]</sup>

The prevalence of tobacco consumption in our study was found to be 15.2% among the study population. In contrast, the findings of another study done in central India among the women residing in both the rural and urban areas, the prevalence was 54.4%.<sup>[17]</sup> Further, it was reported that the prevalence of tobacco consumption among women was quite

**Table 2: Reasons for unwillingness to quit tobacco**

Reasons for unwillingness to quit tobacco (n=28)*	Total (%)
No harmful effects of tobacco experienced	27 (96.4)
Stress relief	14 (50)
Part of daily life	28 (100)
Not aware about side effects of tobacco	15 (53.4)
Not aware about merits associated with quitting tobacco	19 (67.9)
Tobacco products are quite cheap	23 (82.1)

\*Some participants gave more than one reason

common in a rural area than in an urban area.<sup>[17]</sup> This could be due to the lack of awareness activities and poor sensitization of the general population, including women.<sup>[17]</sup>

In the current study, 19 (59.4%) of the tobacco users were illiterate, which is an alarming finding. On a similar note, educational status was found to be one of the most common predisposing factor for a tobacco user.<sup>[18,19]</sup> Furthermore, in the present study, women in the lower economic status group had higher prevalence of tobacco consumption. Similarly, socioeconomic class of the women has been identified as a strong potential risk factor and has been attributed with a tobacco user.<sup>[20,21]</sup>

Lack of awareness among women about tobacco and its associated side effects could be the probable reason for illiteracy, and lower socioeconomic status being statistically associated with a tobacco user in any form.<sup>[18-21]</sup> In our study, 5 (15.6%) of the tobacco users reported presence of recurrent oral ulcers. Similarly, the findings of different epidemiological studies revealed the presence of oral mucosal lesions among the tobacco users.<sup>[22,23]</sup>

It was quite surprising that none of the women surveyed were consuming tobacco in beedi or other smoking forms. All 32 women were consuming tobacco with (29 [90.6%]) or without (3 [9.4%]) pan (gutkha) in the study population. In contrast, the findings of different studies have indicated that tobacco is being consumed in both the smoke as well as smokeless forms.<sup>[14,16-18]</sup> This could be due to the prevailing sociocultural practices in the region, wherein women never smoke as it is being considered a wrong and an unhealthy practice.<sup>[4,7,17,19]</sup>

Further, only 4 (12.5%) of the tobacco users expressed their desire to quit tobacco, while remaining 28 (87.5%) felt no need to quit tobacco as it was a part of their daily routine. The findings of various studies have indicated a varied understanding among the women about the harmful use of tobacco.<sup>[17,24]</sup> In-fact, about 27 (96.4%) of the women who were consuming tobacco products reported that till date they have not experienced any harmful effects of the tobacco. This clearly indicates a lack of awareness among them and is a direct indicator to ensure the strengthening of the awareness activities in the region.

At the same time, studies have indicated that social pressures, including use of the husband or family members and positive beliefs about tobacco acts as a major barrier in the accomplishment of tobacco quitting.<sup>[25-27]</sup> Furthermore, 23 (82%) women reported that the tobacco products which they are consuming are quite cheap, and this reflects that the policy-makers have failed to levy high taxes on the tobacco and its products.<sup>[2,7]</sup> The results of qualitative analysis depicted a wide range of factors which played a significant role in the initiation of tobacco consumption among women. Similar kinds of results have been employed in studies done across different parts in the developing nations.<sup>[28-30]</sup>

## Limitation

The study was conducted in a single rural village and on a small sample size and thus the generalization of the study findings to the entire nation cannot be made. Any generalization will require a multicentric study or should be conducted on a large sample size to enable us to draw meaningful conclusions.

## CONCLUSION

The prevalence of tobacco consumption among the women was estimated to be above expectation of the national figures. Lower socioeconomic class and poor educational status were found to be major determinants for tobacco consumption among rural women. However, considering the fact that women were the target population of the study, who are often neglected both in terms of medical care or treatment seeking, and also in research, there is a definite scope to carry out further research in this area. Moreover, nearly 90% of the women were not interested in quitting tobacco, and thus, there is an immense need to strengthen the awareness activities in the region.

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## Conflicts of interest

There are no conflicts of interest.

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