Prevalence of Consumption of Smokeless Tobacco Products and Exposure to Second-Hand Smoke among Women in the Reproductive Age Group in a Rural Area of Koppal, Karnataka

B. Y. Yuvaraj, Vijaykumar P. Mane, L. Anilkumar, Mallappa Biradar, Virupakshappa Nayaka, Rashmi Sreenivasamurthy[1]

Department of Community Medicine, Koppal Institute of Medical Sciences, Koppal, [1]HEERA Foundation, Bengaluru, Karnataka, India

Abstract

Background: Tobacco use is one of the most important causes of death and disease globally. Nearly one-third of the population in India uses tobacco, and smokeless form is culturally acceptable even among women. **Objectives:** (1) To estimate the prevalence of consumption of smokeless tobacco (SLT) products among women in the reproductive age group in the study setting. (2) To determine the various factors associated with the consumption of SLT. (3) To estimate the prevalence of exposure to second-hand smoke among the study participants. **Materials and Methods:** A cross-sectional study was conducted in the field area of primary health center Irkalgad, Koppal in March 2018. A cluster sampling technique was used and a total of 829 women were included. Data were collected using pretested and semi-structured questionnaire and analyzed using the Epi info software version 3.5.4 (Centers for Disease Control and Prevention" (CDC), Atlanta, Georgia, United States of America). **Results:** The prevalence of consumption of SLT products was 17.85%, and the most common product consumed was tobacco with betel quid. Tobacco consumption was found to be significantly associated with age, literacy, marital, and employment status of the study participants. **Conclusion:** The present study concludes that SLT consumption is high among women in the reproductive age group in the study setting and identifies multiple determinants for effective planning of interventions.

Keywords: Literacy, marital status, smokeless, tobacco, women

Introduction

The tobacco epidemic is one of the biggest public health threats the world has ever faced to date. Tobacco use being a major risk factor for a number of chronic diseases is one of the most important causes of death and disease globally. Tobacco kills nearly 6 million people each year globally, of which around 5.4 million are due to direct use of tobacco while remaining 0.6 million are a result of exposure to second-hand smoke.[1-3]

India is predominantly affected because of its geographically diverse and heterogeneous smokeless and smoking forms of tobacco use among its population. With over one-third of the population using tobacco, India makes significant contributions to the global burden of disease attributable to tobacco. Each year tobacco use kills about 1 million Indians and is responsible for half of all the cancers in men and a quarter of all cancers in women in addition to other noncommunicable diseases.

Further, tobacco-related healthcare costs accounted for more than 1% of the gross domestic product in India (2011).[2,4-8]

As per the Global Adult Tobacco Survey (2009), nearly 35% of adults in India use tobacco in any form, with 47.9% of males and 20.3% among females, and the average age at initiation was 17.9 years. Nearly one-third (29.9%) of adults were exposed to second-hand smoke at the workplace, 52.3% at home, and 29% at other public places. Smokeless tobacco (SLT) is available in many forms in India and is widely used by all the social groups, including women, especially in rural areas. There is a

Address for correspondence: Dr. Vijaykumar P. Mane,
Department of Community Medicine, Koppal Institute of Medical Sciences,
Gangavathi Road, Koppal - 583 231, Karnataka, India.
E-mail: vijaymane01@gmail.com

Access this article online

Quick Response Code:

Website:
www.ijcm.org.in

DOI:
10.4103/ijcm.IJCM_88_19

wide spectrum of morbidity and mortality related to SLT use, both among men and women. Besides being at risk for cancers of the oral cavity, esophagus, and pancreas, and a number of cardiovascular diseases just like men, women also face adverse reproductive outcomes and developmental effects in their offsprings, including stillbirth, preterm birth, and low birth weight. Furthermore, the relative risk of all-cause mortality due to SLT use is higher among women than men.[3,8,9] In spite of this, very few studies have been done on the prevalence and determinants of SLT consumption among women, especially in the reproductive age group. Hence, the present study was undertaken with the following objectives.

Objectives of the study

1. To estimate the prevalence of consumption of SLT products among women in reproductive age group in the study setting
2. To determine the various factors associated with consumption of SLT
3. To estimate the prevalence of exposure to second-hand smoke among the study participants.

Materials and Methods

Study design

The study design involves cross-sectional community-based study.

Study setting

Field practice area of primary health center (PHC) Irkalgad, Koppal Taluk, Koppal District.

Study duration

The duration of the study was 1 month (March 2018).

Study population

The study population consisted of all women in the reproductive age group (15–49 years) in the study setting.

Sample size

Minimum sample size calculated was 560 with an absolute precision of 4%, significance level of 0.05 and design effect of 2, taking 12.8% prevalence of consumption of SLT products among women in India as per recent estimates[10] and we included 829 women in the reproductive age group as the study participants in the study.

Sampling technique

Cluster sampling technique was used for sample selection. All the 11 villages in the field practice area of PHC, Irkalgad, were considered as clusters, and 6 such clusters were selected by simple random sampling. In each of the selected cluster, house-to-house visit was done, and all the women in the reproductive age group (15–49 years) were included as participants in the study.

Exclusion criteria

1. Women not found in the house at the time of visit
2. Women residing in the study area for a period of <6 months
3. Temporary visitors/guests to the house.

Data collection

A semi-structured questionnaire was prepared by modifying the Global Adult Tobacco Survey questionnaire[11] and was used for data collection from the study participants after taking informed consent.

Statistical analysis

Data analysis was performed using the Epi info software version 3.5.4 (Centers for Disease Control and Prevention" (CDC), Atlanta, Georgia, United States of America).

Ethical clearance

Ethical clearance was obtained from the Institutional Ethics Committee, Koppal Institute of Medical Sciences, Koppal.

Results

The prevalence of the consumption of SLT products among study participants was found out to be 148 (17.85%) in the present survey. Of them, majority, i.e., 114 (77.02%) were daily consumers, and the rest were occasional. Further, it was found out that 3 (0.36%) women in the study were past consumers and are currently not consuming any tobacco products. Majority, i.e., 79 (53.37%) of them consumed tobacco with betel quid followed by plain tobacco and tobacco with pan in 40 (27.02%) and 15 (10.13%) of participants, respectively. When enquired about reasons for initiation of SLT consumption, majority, i.e., 64 (43.24%) quoted parental use of tobacco products as the influencing factor for them to start consuming tobacco products followed by sibling use and peer use in 37 (25%) and 18 (12.16%) of the participants, respectively. Effect of the movie was quoted by only 2 (1.35%) and the rest 27 (18.24%) told to have initiated on their own for various reasons like to get relief from a toothache, to get relief from cough and even 2 (1.35%) participants have told pregnancy as the reason for initiation.

Table 1 shows current consumers of smokeless tobacco products according to their consumption patterns/behaviors. When enquired for age at the initiation of consumption, majority, i.e., 99 (66.89%), told to have started consuming tobacco products in the age group of 16–30 years, and the mean age at initiation was 23.57 ± 9.08 years. Majority, i.e., 54 (47.36%) of daily consumers were consuming tobacco products three to four times a day, and nearly one third, i.e., 30 (26.32%) participants even consumed 5 or more than that in a day as seen in the table. Only less than half, i.e., 60 (40.54%) among current consumers were willing/planning to quit the habit, and of those 60, majority, i.e., 42 (70.0%) however, had already attempted to quit the same within the past 12 months of the survey.

Table 2 shows prevalence of current consumption of smokeless tobacco products among study subjects according to certain socio demographic variables. In the present study, the prevalence of consumption was found to be directly proportional to the age of the participants and inversely to their literacy, and the association was found to be statistically significant ($P < 0.05$)

for both the variables. Similarly, the prevalence of consumption of SLT products was significantly more in working and married women compared to their counterparts, as seen in the table. However, we found no significant association ($P > 0.05$) between tobacco consumption and the type of their families.

The prevalence of regular exposure to second hand smoke at home and the workplace was found to be 115 (13.87%) and 52 (6.27%), respectively, in the present study.

DISCUSSION

Tobacco use is one of the major preventable causes of death and disease. Smoking by women in India is still socially unacceptable, and smokeless forms are, therefore, the most prevalent forms among them. Further, their easy availability

and low cost favor their increased use. The prevalence of smokeless form of tobacco consumption in the present study was found to be 17.85%, similar to the findings of other studies done in different parts of the country.[3,7,10,12-15] However, consumption patterns varied from study to study with different proportions of study participants consuming different tobacco products, which could be due to differences in study settings/periods, differences in the profile of study participants, differences in data collection techniques as well as due to sampling errors.[10,12-16]

Majority, i.e., 99 (66.89) of the women in the present study reported to have started consuming tobacco products in the age group of 16–30 years and the mean age at initiation was 23.57 ± 9.08 years similar to the findings of other studies[10,15,17-19] and use of tobacco by parents, siblings and peers/friends were the most influencing factors for them to start consuming in confirmation with other studies.[3,17-19] Tobacco use by family members not only influences young children and adolescents to initiate tobacco consumption by developing a positive and favorable attitude towards it but also plays a significant role in the continuation of the habit.

The present study found that the prevalence of SLT consumption increased significantly with advancing age and with decreasing level of literacy and was also more among subjects who were married and employed, in line with findings of other studies.[7,10,15,20] Increased tobacco consumption among less educated could be due to a lack of awareness of health hazards associated with it. Further, the prevalence of regular exposure to second hand smoke at home and workplace was 115 (13.87%) and 52 (6.27%), respectively, which is lower compared to previous studies[10,12] showing an improvement over the years. The findings of the present study emphasize

Table 1: Distribution of current consumers of smokeless tobacco products according to their consumption patterns/behaviors

Pattern/behavior	Classification	Number of subjects, *n* (%)
Age at initiation (years)	Up to 15	22 (14.86)
	16-30	99 (66.89)
	31-45	24 (16.22)
	46 and above	3 (2.03)
Frequency of consumption (number of times per day)*	1-2	30 (26.32)
	3-4	54 (47.36)
	5 and more	30 (26.32)
Planning/thinking to quit	Yes	60 (40.54)
	No	88 (59.46)
Attempt to quit†	Yes	42 (70)
	No	18 (30)

*Only daily consumers are considered here, †Only women who are planning/thinking of quitting tobacco consumption are considered here

Table 2: Prevalence of current consumption of smokeless tobacco products among study subjects according to certain sociodemographic variables (*n*=829)

Variable	Classification	Number of women, *n*	Tobacco consumption current status, *n* (%)		χ^2, *P*
			Present	Absent	
Age (years)	15-24	330	15 (4.54)	315 (95.46)	141.70, 0.0000
	25-34	255	35 (13.72)	220 (86.28)	
	35-44	158	52 (32.91)	106 (67.09)	
	45 and above	86	46 (57.5)	40 (42.5)	
Literacy	Illiterate	343	110 (32.06)	233 (67.94)	90.95, 0.0000
	Literate but below high school	189	28 (14.81)	161 (85.19)	
	High school and above	297	10 (3.36)	287 (96.64)	
Occupation‡	Unemployed	65	1 (1.53)	64 (98.47)	14.76, 0.0006
	Housewife	260	4 (16.53)	217 (83.47)	
	Employed	504	104 (20.63)	400 (79.37)	
Marital status	Unmarried	147	1 (0.68)	146 (99.32)	35.93, 0.0000
	Married	682	147 (21.55)	535 (78.45)	
Type of family	Nuclear	436	81 (18.57)	355 (81.43)	1.07, 0.584
	Joint	313	56 (17.89)	257 (82.11)	
	Three generation	80	11 (13.75)	69 (86.25)	

‡Unmarried nonworking participants were considered as unemployed and married nonworking participants were considered as housewives in the present study

the need to create awareness on the harmful effects of tobacco and also the need to enforce tobacco control policies in the community to curb this modern epidemic of tobacco use.

Conclusion

One in every six women in the reproductive age group is found to be consuming some form of SLT product in the study setting. Tobacco use by family members is identified as the most influencing factor for them to start consuming tobacco products, and the study also found advanced age, low level of literacy, being married, and being employed as risk factors for consumption of tobacco products.

Conflicts of interest

There are no conflicts of interest.

References

1. Tobacco. Available from: https://www.who.int/topics/tobacco/en/. [Last accessed on 2018 Dec 26].
2. Pednekar M, Nagler ME, Pawar P, Sorensen G, Narake S, Stoddard MA, *et al*. The prevalence of tobacco use among manufacturing workers: Findings from the baseline survey of the Mumbai worksite tobacco control study. Prev Med 2016;3:1-10.
3. Smokeless Tobacco and Public Health in India. Available from: http://www.searo.who.int/india/tobacco/smokeless_tobacco_and_public_health_in_india.pdf?ua=1. [Last accessed on 2018 Dec 26].
4. Pimple S, Gunjal S, Mishra GA, Pednekar MS, Majmudar P, Shastri SS. Compliance to Gutka ban and other provisons of COTPA in Mumbai. Indian J Cancer 2014;51 Suppl 1:S60-6.
5. Goel S, Kumar R, Lal P, Tripathi J, Singh RJ, Rathinam A, *et al*. How compliant are tobacco vendors to India's tobacco control legislation on Ban of advertisements at point of sale? A three jurisdictions review. Asian Pac J Cancer Prev 2014;15:10637-42.
6. Tripathy JP, Goel S, Patro BK. Compliance monitoring of prohibition of smoking (under section-4 of COTPA) at a tertiary health-care institution in a smoke-free city of India. Lung India 2013;30:312-5.
7. Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L. Tobacco use in India: Prevalence and predictors of smoking and chewing in a national cross sectional household survey. Tob Control 2003;12:e4.
8. Goel S, Sardana M, Jain N, Bakshi D. Descriptive evaluation of cigarettes and other tobacco products act in a North Indian city. Indian J Public Health 2016;60:273-9.
9. Yadav R, Swasticharan L, Garg R. Compliance of Specific Provisions of Tobacco Control Law around Educational Institutions in Delhi, India. Int J Prev Med 2017;8:62.
10. Global Adult Tobacco Survey: Factsheet India 2016-17. Available from: https://mohfw.gov.in/sites/default/files/GATS-2%20FactSheet.pdf. [Last accessed on 2018 Mar 15].
11. Global Adult Tobacco Survey (GATS) – Core Questionnaire with Optional Questions. Available from: https://www.who.int/tobacco/surveillance/en_tfi_gats_corequestionnairewithoptionalquestions_v2_FINAL_03Nov2010.pdf. [Last accessed on 2018 Mar 15].
12. Verma P, Pandey P, Thakur A. Prevalence and determinants of tobacco consumption among pregnant women of three central Indian districts. Trop J Obstet Gynaecol 2017;34:99-106.
13. Mutti S, Reid JL, Gupta PC, Pednekar MS, Dhumal G, Nargis N, *et al*. Patterns of use and perceptions of harm of smokeless tobacco in Navi Mumbai, India and Dhaka, Bangladesh. Indian J Community Med 2016;41:280-7.
14. Sinha DN, Gupta PC, Ray C, Singh PK. Prevalence of smokeless tobacco use among adults in WHO South-East Asia. Indian J Cancer 2012;49:342-6.
15. Mishra GA, Kulkarni SV, Gupta SD, Shastri SS. Smokeless tobacco use in Urban Indian women: Prevalence and predictors. Indian J Med Paediatr Oncol 2015;36:176-82.
16. Shekhawat KS, Chauhan A, Sakthidevi S, Goyal P, Bhattacharjee S. Smokeless Tobacco: Profiling Sachets and Pattern of Use among Low Socioeconomic Population of Puducherry. Contemp Clin Dent 2017;8:225-30.
17. Jeeragyal DP, Sasidhar M, Udayar SE, John KR, Kalluri RJ. Study of perceived reasons for initiation and continuation of tobacco use among rural population. Int J Community Med Public Health 2017;4:3645-9.
18. Ravishankar TL, Nagarajappa R. Factors attributing to initiation of tobacco use in adolescent students of Moradabad, (UP) India. Indian J Dent Res 2009;20:346-9.
19. Sharma V, Hiremath SS, Puranik M, Somasundara S. Prevalence of tobacco use among 15-20 years old college students in Bengaluru city. J Indian Assoc Public Health Dent 2015;13:24-9.
20. Dasgupta A, Pal M, Paul B, Bandyopadhyay L. Predictors of smokeless tobacco consumption among women: A community based study in a slum of Kolkata. Int J Community Med Public Health 2018;5:1812-6.