

RESEARCH ARTICLE

Women and Tobacco Use: Discrepancy in the Knowledge, Belief and Behavior towards Tobacco Consumption among Urban and Rural Women in Chhattisgarh, Central India

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Abstract

Background: Tobacco consumption has become pandemic, and is estimated to have killed 100 million people in the 20th century worldwide. Some 700,000 out of 5.4 million deaths due to tobacco use were from India. The era of global modernization has led to an increase in the involvement of women in tobacco consumption in the low income and middle-income countries. Tobacco consumption by females is known to have grave consequences. **Objectives:** To assess: (1) the tobacco use among urban and rural women; (2) the discrepancy in the knowledge, belief and behavior towards tobacco consumption among urban and rural women in Durg-Bhilai Metropolitan, Chhattisgarh, Central India. **Materials and Methods:** The study population consisted of 2,000 18-25 year old young women from Durg-Bhilai Metropolitan, Chhattisgarh, Central India, from both urban and rural areas. Data were collected using a pretested, anonymous, extensive face to face interview by a female investigator to assess the tobacco use among women and the discrepancy in the knowledge, belief and behavior towards tobacco consumption among urban and rural individuals. **Results:** The prevalence of tobacco use was found to be 47.2%. Tobacco consumption among rural women was 54.4% and in urban women was 40%. The majority of the women from urban areas (62.8%) were smokers whilst rural women (77.4%) showed preponderance toward smokeless tobacco use. Urban women had a better knowledge and attitude towards harms from tobacco and its use than the rural women. Women in rural areas had higher odds (1.335) of developing tobacco habit than the urban women. **Conclusions:** Increased tobacco use by women poses very severe hazards to their health, maternal and child health, and their family health and economic well-being. Due to the remarkably complex Indian picture of female tobacco use, an immediate and compulsory implementation of tobacco control policies laid down by the WHO FCTC is the need of the hour.

Keywords: Tobacco - women - Chhattisgarh - India - rural - urban - knowledge

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Introduction

Tobacco is the leading preventable cause of death which is estimated to have killed 100 million people in the 20th century worldwide and could kill 1 billion in the 21st century (Shifalika et al., 2010). Strikingly nearly 700,000 out of the 5.4 million deaths due to tobacco use were from India (Tobacco Control in India, 2004). Tobacco consumption in India is responsible for half of all cancers in men and quarter of all cancer found in women (Rani et al., 2003). India holds the second position in the world for production and stands third in the consumption of tobacco (Bansal et al., 2005). 182 million (16.6%) out of the 1.1 billion smokers worldwide, live in India, which makes a whopping consumption of 102 billion cigarettes

per year. Cigarette consumption is considered to be the conventional practice of the people of middle and upper socioeconomic status group, which in India accounts for meager one-third of tobacco consumption (Murray, 1996). About two-thirds of tobacco consumed is in the alternative form such as bidis, chewable tobacco (betel quid, gutkha, mawa and khaini-chewed in the oral cavity and snuff- inhaled through nose and creamy snuff; which is a tobacco paste marketed as dentifrice.), powdered tobacco (Local brands of packed chewing tobacco products) which are considered to be consumed by the people from lower socioeconomic strata of the society (World Health Organization, 1997; Tiwari et al., 2014). Due to these many varieties of tobacco use in India, it emerges as a great public health challenge when compared with

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other countries (Tiwari et al., 2014) and also the mixture of smoke and smokeless tobacco forms makes the Issues in Tobacco control in India a more complex issue and raise many questions and doubts for tobacco control intervention designs (Danawala et al., 2014). Assessment in any manner has proved that consuming tobacco is one of the significant global public health problems and is an important risk factor for causing cancer in both men and women (Soma et al., 2005).

Men were considered as the predominant users or consumers of tobacco and tobacco related products previously and when compared in proportion, women tobacco users were very less, and that too were in the High Income Countries (HICs). But era of Global modernization has led to an increase in the involvement and indulging of women in tobacco consumption in the low income and middle-income countries (LMICs) where the epidemic is growing (Amanda et al., 2012).

GATS (Global Adult Tobacco Survey) India revealed that more than one-third (35%) of adults in India use tobacco in some form or the other. Among them 21% adults use only smokeless tobacco, 9% only smoke and 5% smoke as well as use smokeless tobacco. The estimated number of tobacco users in India is 274.9 million, with 163.7 million users of only smokeless tobacco, 68.9 million only smokers, and 42.3 million users of both smoking and smokeless tobacco. The prevalence of overall tobacco use among males is 48% and that among females is 20%. Nearly two in five (38%) adults in rural areas and one in four (25%) adults in urban areas use tobacco in some form. Prevalence of smoking among males is 24% whereas the prevalence among females is 3%. The extent of use of smokeless tobacco products among males (33%) is higher than among females (18%). One in two males and one in ten females in India use tobacco in some form or the other. About one third of adult males smokes and/or chews tobacco. Among females, chewing tobacco is more common than smoking and only a small proportion of females smoke tobacco (GATS, 2010) but previous studies have reported oral cancer to be more commonly found in women than in men (Loyha et al., 2012).

The increased risk for diseases like cardiac diseases, lung cancer, oral & pharyngeal cancers, tuberculosis are shared by both men and women who consume tobacco, but women also experience risks which are unique to them or higher than in males. Tobacco smoking has been debated to be a risk factor to be associated with breast cancer, as there have been evidences that carcinogens present in the smoke from tobacco could be transported to the breasts through lipoproteins and albumin of plasma, however most observational studies could not find a strong association (Joanna, 2014). Moore and Sobue, in a study on strategies for cancer control on an organ-site basis, reported that smoking cigarette can play some role in breast cancer (Moore and Sobue, 2010). Cervical cancer, a leading cause of cancer death in developing countries has a link with women indulged in smoking. Also evidences support links between active tobacco use and exposure to breast cancers. Also the devastating effect of maternal tobacco use on fetal development has been well established. Women involved in smoking have higher risk (25%) of developing

heart disease than do the male smokers (Amanda et al., 2012). Smoking tobacco is the established cause of Lung cancer, which is the most common type of cancer in the world and is the leading cause of death in both women and men (Arife et al., 2015). The cancer burden in India is expected to get doubled by the next 20 years which may be attributed to many factors viz. increase in the population, increase in tobacco consumption and government efforts to gain control over non-communicable diseases (Lala et al., 2015).

Attributed to the low prevalence of smoking among females, they still remain a huge untapped and unbroached market and what now seems to be a prime venture for the tobacco marketing company. The tobacco marketing strategists have increased their focus in a country like India, where tobacco use by women and girls has been considered inappropriate since centuries (Brandt, 1996; Bansal et al., 2005). Various lucrative advertisements, campaigns, attractive designing of packets, embarking features like characteristic size, taste, shape are being given focus by the tobacco industries to exploit to target women into the tobacco net (Bansal et al., 2005; Sushma, Sharang, 2005). The global scenario of tobacco use by females is widely complex, concerning a wide array of tobacco products available and to respond to varied factors like tobacco marketing, globalization, urbanization, modernization and upgrading in the women's status and roles (Pathania, 2011).

Chhattisgarh, a state in Central India, ranks 17th in terms of population and 10th in terms of area in the country. The state is on the urge of fast track development average GSDP (Gross State Domestic Product) growth rate between 2004-05 and 2011-12 was about 15.0 percent ().

Data from the GATS (Global Adult Tobacco Survey) 2010, Chhattisgarh, India revealed that Current tobacco users in any form constitute 53.2% of adults; 63.9% of males and 41.6 % of females. Current tobacco smokers constitutes of 12.6 % of adults; 20.9 %% of males and 3.7% of females. Current users of smokeless tobacco constitute 47.2% of a adults; 52.5% of males and 41.6% of females (GATS, 2010).

Despite of this increase in tobacco consumption in females, tobacco control has yet largely remained gender blind. A little is being understood and recognized, regarding the importance of understanding in the context of the involvement of girls and women in tobacco use and a very scarce information is present on the above stated and that too no such study has till date being reported for Chhattisgarh state. So this study makes an effort to assess: 1) the tobacco use among urban and rural women; 2) the discrepancy in the knowledge, belief and behavior towards tobacco consumption among urban and rural women in Durg-Bhilai Metropolitan, Chhattisgarh, Central India.

Materials and Methods

Ethical approval

We obtained ethical approval from the Ethical Committee of Rungta College of Dental Sciences and Research, Durg, India and the permission from the Institutional Review Board. An information sheet

describing the purpose of the study and individuals' rights as study participants was handed to the participants to read. For individuals with inadequate literacy, the information sheet was read out by the interviewers. Written informed consent was then obtained from each person. A thumb impression was obtained from those who were unable to sign the consent form.

Source of Data

This cross sectional descriptive, household survey was conducted by the Department of Public health Dentistry, Rungta College of Dental Sciences and Research, Chhattisgarh from August 2014 to November 2014 among young women from urban and rural locations in the Durg-Bhilai Metropolitan of Chhattisgarh state in the Central India.

Study population

The study population consisted of 18-25 year old young women from Durg-Bhilai Metropolitan, Chhattisgarh, Central India.

Sample size determination and sampling procedure

Pilot study: A brief pilot study was conducted at the urban and rural data collection site among 200 young women (18-25 year old), to have an estimate of the desired sample size, to find out any flaws in the interview questions and to decide the duration and feasibility of the study. The women at the time of data collection were approached by the researcher and asked if they were over 18 years of age and want to take part in the survey. If they replied affirmatively, they were subsequently invited to participate in the study and take up the interview and the hence the prevalence of tobacco consumption was obtained.

Sampling: After obtaining the prevalence rate of tobacco consumption among females from the urban and rural area, the sample size was determined to be 2000. So it was decided that 1000 women from urban area and 1000 from the rural areas will be selected from Durg-Bhilai Metropolitan to obtain the desired sample size using a multi-stage random sampling technique.

For administrative purpose Durg-Bhilai Metropolitan has been divided into: *i) Urban:* Bhilai Municipal Corporation, Durg Municipal Corporation

ii) Rural- 80 villages: The urban locality is constituted by Bhilai Municipal Corporation and Durg Municipal Corporation. For sampling purpose, both the Municipal Corporation areas were divided into five zones viz. East zone, West zone, North zone, South zone and Central zone. 100 women from each zone, from both Bhilai Municipal Corporation and Durg Municipal Corporation were randomly selected to be included into the study sample. So, 500 women from Bhilai Municipal Corporation (urban) and 500 women from Durg Municipal Corporation (urban) were selected to represent the urban area.

The 80 villages representing the rural area were categorized under five zones viz. East zone, West zone, North zone, South zone and Central zone for sampling purpose. Five villages from each zone were randomly selected by a lottery method. From each village 40 women were recruited randomly to be a part of the sample. So, 200

women were recruited from each of the five zones which made 1000 women to be selected to form a representative sample from amongst 80 villages. Henceforth the final sample size consisted of 2000 women.

Training and calibration

The interviewer (female) was trained for conducting the interview on 50 women of the age 18-25 years. Calibration of interviewer was done on 25 women, who were interviewed by a female interviewer twice using predefined criteria and interview format, in their local language on successive weeks, and then the results were compared to know the time taken to complete the interview and variability. Agreement for assessment was 88 percent. An assistant to the investigator was also trained to enter the data correctly using the preformed interview format.

Data collection and management

Data was collected using a pretested, anonymous, extensive face to face interview (in English, Hindi as well as in Chhattisgarhi- the local language in the state) with mostly close-ended questions and a few open-ended questions to assess the tobacco use among women and the discrepancy in the knowledge, belief and behavior towards tobacco consumption among urban and rural women in Durg-Bhilai Metropolitan, Chhattisgarh, Central India. As this household survey was performed exclusively on females, a female investigator (co-author) was trained to carry out the interview to overcome any barrier to the response provided, that could rise as a result of males carrying out the interview. The interviewer had sufficient experience in conducting interviews, surveys and using the census method. The principle investigator along with the other investigators supervised the fieldwork. After explaining the purpose of the survey and the voluntary and anonymous nature of participation in the survey, the investigator and the assistant started up with the interviewing with those women who agreed to participate in the study, in a separate chamber/room (as and when available) to ensure complete privacy and unanimity to the respondents. The same interviewers conducted the survey with all the women participants included in the research. Data entry was done by two trained data entry operators using Microsoft Excel (2007). Random verification of 10% of data was done by the principal investigator and internal validity checks were performed. A door to- door house hold survey was conducted for interviewing all the eligible women living in the study area.

Health education and courtesy reporting

Researchers delivered education about the harmful effects of tobacco use and related aspects to the participants in the form of an interactive health talk. Visual aids (models, charts, brochures, photographs etc) were also used in the health talk.

Statistical analysis

The data was transformed from pre-coded survey form to computer. A master file was created for the purpose of data analysis. SPSS version 16.0 (SPSS Pty Ltd, Chicago, IL, USA) was used for the statistical analyses. Frequency

distribution, Chi-square tests at 95% confidence interval and logistic regression analysis was calculated as well was used for analyzing the results. The statistical significance was fixed at 0.05 and p value<0.05 was considered as statistically significant.

Results

General characteristics of study participants by residence area (Table 1)

Table 1 depicts the baseline characteristics of the respondents. A total of 2000 young females of the age group 18-25 years, were the part of this study. In accordance with the sample size calculated for the survey, 1000 young females each from urban and rural areas were recruited in the study with the ratio of 1:1 to facilitate uniformity in the comparison. The educational level assessed was dichotomized for analytical purpose into two groups i.e. women having education up to higher secondary level (n=800) and women who have attained

their graduation (n=1200). Marital status was also assessed to gather information about the discrepancy in tobacco use in married (n=1160) and unmarried women (n=840). Out of 2000 women surveyed, the total current users of tobacco were 47.2% (n=944). 19.9% (398) were smokers while 23% (460) were involved in consuming smokeless tobacco and 4.3 % (86) consumed both the forms (Figure 1).

Tobacco Consumption Prevalence and Behavior and Discrepancy (Table 2)

The prevalence of tobacco use (Figure 2) was found to be 47.2%, when the urban and rural discrepancy of tobacco consumption was assessed among the women (Figure 2), it was found that more of the rural women (54.4%) were consuming tobacco than the urban women (40%) and this difference was found to be highly statistically significant (p<0.001). The women residing in rural areas had higher odds (1.335) of developing tobacco habit than the urban residing women. As was found earlier, tobacco was consumed as smoked and smokeless form,

Table 1. General Characteristics of Study Participants by Residence Area

	Total number of participants		Urban		Rural		p-value
	n		n	%	n	%	
Age (Mean±SD, age range)	21.49 (±2.26, 18-25)		1000	50	1000	50	
Educational Attainment							
Higher Secondary	800		466	58.2	334	41.8	0.001
Graduate	1200		666	55.5	534	44.5	0.007
Marital Status							
Married	1160		556	47.9	604	52.1	0.3
Unmarried	840		444	52.9	396	47.1	0.2
Status of tobacco use							
Non-users	1056		600	56.8	456	43.2	0.002
Users	944		400	42.4	544	57.6	0.001
Smoked	398		250	62.8	148	37.2	0.001
Smokeless	460		104	22.6	356	77.4	0.001
Both	86		46	53.5	40	46.5	0.6

*Chisquare test to compare between rural and urban

Table 2. Tobacco Consumption Prevalence and Behavior

N=2000	Frequency	Percentage n (%)	Chi-Square test p- value	Odd's Ratio (95% CI)	95% CI±
Number of women consuming tobacco (n)	944	47.2			
Tobacco Use According to Location					
Urban	400	40	<0.001*	1	1.168/1.483
Rural	544	54.4		1.335	
Tobacco Use Form: Urban v/s Rural					
Smoked Form	398	42.16	<0.001*		1.303/2.641
Urban	250	62.81		1.689	
Rural	148	37.19	1		
Smokeless Form	460	48.72	<0.001*		1.295/1.495
Urban	104	22.6		1	
Rural	356	77.4	1.391		
Both	86	9.12	<0.64		0.627/2.135
Urban	46	53.48		1.157	
Rural	40	46.52	1		
Tobacco Use According to Educational Attainment					
Higher Secondary	412	51.5	<0.026*	1.148	1.104/1.299
Graduate	532	44.33		1	
Tobacco Use According to Marital Status					
Married	510	43.96	<0.01*	1	1.026/1.310
Unmarried	434	51.66		1.159	

and this discrepancy among urban and rural women was also assessed. It was observed that among the women who smoked (42.16%), the majority were the women from urban areas (62.81%) than do the women from rural areas (37.19%), this difference was also found to be highly statistically significant ($p < 0.001$) and the odds of developing the smoking habit was 1.32 times more in the urban women than in the rural women. On the

contrary among the women who consumed smokeless tobacco (48.72%), the rural women (77.40%) showed preponderance than do the urban women (22.60%), the difference was also found to be highly statistically significant ($p < 0.001$). About 86 women (9.12%) had the habit of consuming both smoked and smokeless tobacco, the urban women (53.8%) were in higher numbers than the rural women (46.52%), however the difference was not statistically significant ($p > 0.05$).

The discrepancy of tobacco use among women according to their educational qualification was also assessed; the education status was dichotomizing into educated up to higher secondary (12th standard or below) and education till graduate level. It was observed that the women with education up to the higher secondary level had 1.188 times more odds of developing the tobacco consumption habit than the women who had a graduation.

Tobacco consumption according to the marital status was also assessed and it was observed that more number of unmarried women (51.66%) were involved in consuming tobacco than the married women (43.96) and the difference was found to be statistically significant ($p < 0.01$) also the unmarried women had 1.196 times higher odds of developing tobacco consumption habit. (Figure 3)

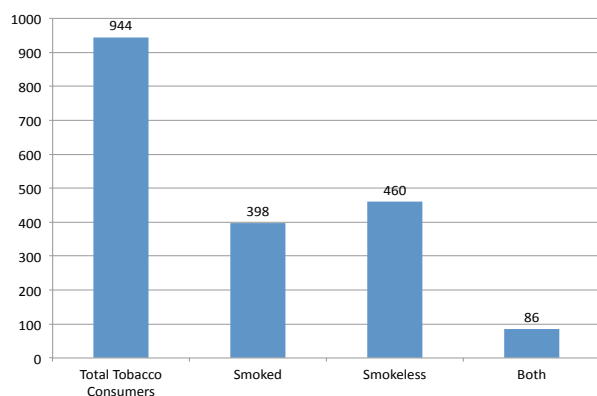


Figure 1. Tobacco Consumption Status

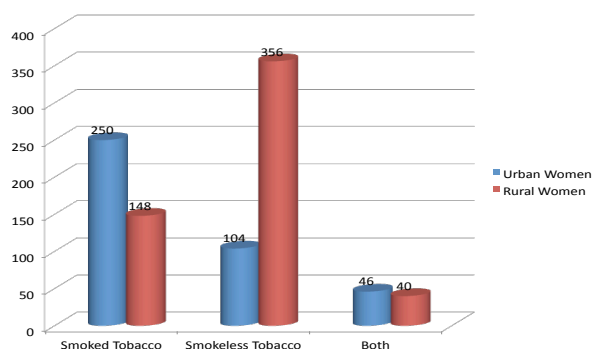


Figure 2. Form of Tobacco Consumed Urban v/s Rural

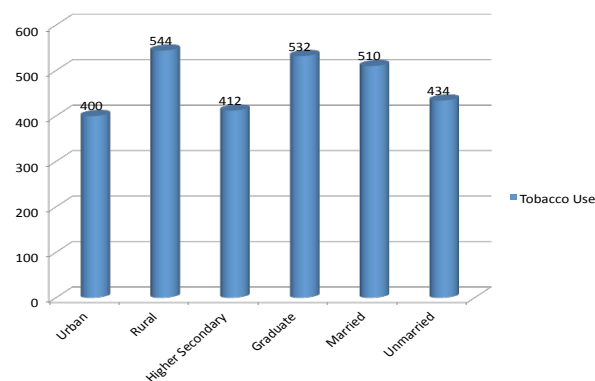


Figure 3. Tobacco Use Prevalence and Behavior

Table 3. Positive Answer for the Questions on Knowledge and Beliefs Towards Tobacco Consumption

	Total number of participants	Urban		Rural		p-value
		n	%	n	%	
Is smoking banned in public Places?	1012	708	70.8	304	30.4	0.001
Chewing tobacco can cause oral cancer?	1222	1000	100	222	22.2	0.001
Are you exposed to secondhand smoke?	1166	620	62	546	54.6	0.01
In your opinion do tobacco-related advertisements influence tobacco consumption?	1460	754	75.4	706	70.6	0.08
Have you ever used product containing tobacco to clean your teeth?	496	76	7.6	420	42	0.001
Have you ever been given free cigarettes by somebody?	146	66	6.6	80	8	0.3
Do you consider occasional tobacco use injurious to health?	1084	606	60.6	478	47.8	0.001
Do any of your Family members consume tobacco?	818	334	33.4	484	59.1	0.001
Have you ever been explained about the ill effects of tobacco by any healthcare specialist?	450	250	25	100	10	0.001
Do you have the courage to admonish someone for smoking cigarettes in your presence?	978	632	63.2	346	34.6	0.001

Positive answer for the questions on knowledge and beliefs towards tobacco consumption (Table 3)

On the question of knowledge on ban on tobacco at public places, overall 1012 (50.6%) had the knowledge where as 988 (49.14%) didn't. When the discrepancy about the same was assessed among the urban and rural women it was observed that urban women had more knowledge (70.8%) than the rural women (30.4%) and the difference was found to be highly statistically significant ($p < 0.001$). Another question was instilled on the knowledge of the fact that whether chewing tobacco can cause oral cancer or not, to which an overall response rate of 61.1% gave a positive agreement, and all the urban women (100%) replied affirmatively but sarcastically and unfortunately 77.8% (708) rural women replied a negative answer and they were unaware of this fact and this difference was found to be highly statistically significant ($p < 0.001$). An overall 1166 (58.3%) women said they are being exposed to second hand smoke or passive smoking, and when the difference was assessed among rural and urban women it was found that more number of urban women (62.0%) are exposed to the burden of second hand smoke than do the rural women (54.6%), the difference was found to be statistically significant ($p < 0.01$). Majority of the women (73%) agreed to the fact that tobacco-related advertisements do influence tobacco consumption and there was no statistically significant difference ($p > 0.05$) in the opinion among the urban and rural women, regarding the above stated.

496 (24.8%) women said they have used a product containing tobacco to clean their teeth, astonishingly out of the 496 women who confronted this fact, 420 women belonged to the rural area when compared to 76 women belonging to the urban area. This difference was found to be highly statistically significant ($p < 0.001$). 146 (7.3%) of the overall women in the study sample had been given free cigarettes samples by somebody. 1084 (54.2%) women considered that occasional tobacco use can be harmful whereas 916 (45.8%) women disagreed to it. When the difference in opinion in this regard was assessed among urban and rural women, the urban women had better understanding of the fact that occasional tobacco is harmful than do the rural women and this difference was found to be highly statistically significant ($p < 0.001$). 818 (40.9%) were the ones who stated that their some or the other family member consumed tobacco, out of this majority of the women belonged to the rural areas (48.4%). This difference for the response provided for this question between urban and rural women was found to be highly statistically significant ($p < 0.001$). Out of the overall (2000) women surveyed, 1550 (77.5%) said that they had never been explained about the ill effects of tobacco by any healthcare specialist. Very surprisingly out of this 1550 women had never been explained about the ill effects of tobacco by any healthcare specialist, 900 (90%) were the rural women and 750 (75%) were the urban women, the difference was found to be highly statistically significant ($p < 0.001$). Only 978 (48.9%) of overall women surveyed said that they had the courage to admonish someone for smoking cigarettes in their presence whilst, 1022 (51.1%) didn't. From amongst the 1022 (51.1%) women who

didn't had the courage to admonish someone for smoking cigarettes in their presence, 654 (65.4%) were those from the rural area whereas 368 (36.8%) were from the urban area, the difference was found to be highly statistically significant ($p < 0.001$).

Discussion

In the present study, an attempt was made to assess 1) the tobacco use among urban and rural women; 2) the discrepancy in the knowledge, belief and behavior towards tobacco consumption among urban and rural women in Durg-Bhilai Metropolitan, Chhattisgarh, Central India. As per the literature search, this is one amongst the very few researches conducted in this context.

In this comprehensive survey, 1000 women from urban areas and 1000 women from rural areas were interviewed to study the urban and rural disparity, as in India, there exists a wide difference in urban and rural areas when compared to socioeconomic status, educational qualifications, quality of life, level of living and the knowledge, attitude, practice and perceptions toward tobacco consumption. Thorough care was taken to ensure a valid and truthful response from the women interviewed, by including a female investigator as an interviewer so as to overcome any barrier to the response provided, that could rise as a result of males carrying out the interview.

In the present study, out of the 2000 (N) women interviewed, 944 (47.2%) were indulged in the consumption of tobacco and the rest 1056 (52.8%) were the non users of tobacco which is similar when compared with the prevalence of women tobacco users reported by, the Global Adult Tobacco Survey 2009-2010 (GATS, 2010) in Chhattisgarh (37.9%), Gupta PC (Gupta PC, 1996) (57.5%), but it is far much higher that reported by Peltzer and Pengpid (Peltzer, Pengpid, 2014). In India, firstly the psychological aspirations among the women are bluntly exploited by the tobacco manufacturers to promote tobacco by including women into the advertising imagery and taking the advantage of the changing position of women in the so called male dominated society, and their increased socioeconomic independence. As a result many educated young women especially in the urban areas perceive smoking as a symbol of liberation and freedom from traditional gender roles. Secondly, the cheap and ready availability, injudicious promotion, and weak legislation and less education is the cause for increase in tobacco consumption in the rural women.

The tobacco use disparity between the women in the urban (40%) and rural (54.4%) areas was found to be highly statistically significant as the women in the rural areas consumed more tobacco than do the females in the urban area which is in agreement to the reports of Global Adult Tobacco Survey 2009-2010 (GATS, 2010), also it is believed by women in many rural areas that tobacco has many magical and medicinal properties; getting rid of a foul smell, keeping the mouth clean, getting rid of a foul smell, curing toothache, sickness, during labor pains, etc (Aghi, 1993).

In the present study, tobacco was consumed by the women in both smoked (42.16%) and smokeless forms

(48.72%). When the urban and rural disparity among women who smoked was assessed, higher odds (1.342) of smoking among urban women (62.81%) than in rural women (37.19%) was observed and the difference was found to be highly statistically significant as the urban women were predominantly involved in consuming smoked form of tobacco, this finding is dissimilar to the Global Adult Tobacco Survey 2009-2010 (GATS, 2010), as they report higher prevalence of smoking among rural women than the urban women. Surprisingly, among the smokeless tobacco users 77.40% belonged to the rural areas whilst 22.60% were from the urban areas, the difference was found to be highly statistically significant, this finding is in agreement to the study reports of Global Adult Tobacco Survey 2009-2010 (GATS, 2010), Bhonsle et al. (1992), Mehta et al. (1972). The rural women (1.851) had higher odds of consuming smokeless tobacco than do the urban women which coincides with the reports of (Mini et al., 2014).

When assessed for tobacco consumption according to the education level, women with education level till the higher secondary (51.5%) had higher odds (1.188) of developing tobacco consumption than the graduated women (44.33%), this finding matches with the reports of Rani et al. (2003), stating that women's tobacco use is higher in the less educated and poorer social strata. Higher odds of developing tobacco consumption habit (1.196) was found among unmarried women (51.66%) than in the married women (43.96%), the reason for this may be attributed to the fact that many girls believe that smoking helps to control weight by suppressing appetite and unmarried women tend to be more conscious about their weight and looks (U.S. Department of Health and Human Services, 1989; Klesges et al., 1997).

The interview also assessed women's Knowledge, beliefs and perception toward tobacco consumption and the urban and rural disparity in the beliefs and perception. The WHO Framework Convention for Tobacco Control has incorporated smoke-free laws as an effective global tobacco control policy (P.E. Petersen, 2003), under the light of the above stated, The Ministry of Health and Family Welfare, Government of India, 2003 Cigarettes and Other Tobacco Products Act (COTPA, 2003) has ensured legal ban on smoking in public places. Whether this legislation is known to the women or not was assessed by a question, "Is smoking banned in public Places?" and to astonishment about 49.14% of the overall women responded negative, this shows a lag in the knowledge of legislation against tobacco, also when the difference in the knowledge in this regard was seen in the rural and urban women, it was found that higher proportion of the rural women (69.6%) were unaware of this fact than were the urban women (29.2%). The burning of smoking products or the smoke exhaled by the smokers constitutes the Second Hand Smoke (SHS) (Oberge et al., 2010). Globally a large number of women non-smokers are exposed to Second Hand Smoke (SHS) at home or at work places (Akansha et al., 2013) which is a causative for the occurrence of many diseases like ischaemic heart disease, lower respiratory infections, asthma and lung cancer, and even death (Pierce et al., 1998; Mamta et

al., 2012). COTPA include a ban on smoking in public places, including indoor workplaces, the smoke-free rules were revised in October, 2008, redefining 'public places' to include all the workplaces (COTPA, 2003), however effective measures for tobacco control are still lacking in many states (Akansha et al., 2013). Exposure to second hand smoke was also assessed and it was observed that majority (58.3%) of the overall study population responded affirmatively that they are exposed to second hand smoke and out of this more number of the urban women (62.0%) were exposed than the rural women (54.6%), the findings are consistent with the reports of Akansha et al. (2013).

A product or idea can be promoted well via advertisement. There are various modalities of advertisements. Any place an 'identified' sponsor pays to deliver their message through a medium is considered advertising (Pierce et al., 1998). Tobacco companies also promote their products using various ways of advertisements and it has been observed in various reports that tobacco advertisements are associated with future smoking or likelihood of trying tobacco (Pierce et al., 1998; Sushma, Sharang 2005). It is disturbing to note that despite intensifying regulations (COTPA, 2003), people are continue to be exposed to tobacco products advertisement and in the present study also whether these advertisement has an effect on tobacco consumption was also assessed, it was observed that a majority of the overall study population agreed to the fact that tobacco-related advertisements influence tobacco consumption and there was a substantial agreement between the urban and rural women to this question.

Accounting for almost 200,000 deaths annually worldwide and approximately and 46,000 deaths particularly in India (Mamta et al., 2012) oral cancer tend to be a major problem; the consumption of smokeless tobacco is the major risk factor quantifying the disease (Petersen, 2008). In the Indian context especially in Chhattisgarh, central India smokeless tobacco consumption is on the uprising (Tiwari et al., 2014), so it was a paramount importance, to assess the knowledge amongst the women that whether chewing tobacco can cause oral cancer and it was observed that 61.1% of the women in the overall study population agreed to the fact that chewing tobacco can cause oral cancer but the peculiar finding which comes out was that, 778 (77.8%) of the women in rural area were unaware of this, which is striking to the fact that in the present study almost 77% of the rural women were indulged in the consumption of smokeless tobacco. The urban population was found to fare better than its rural counterpart in the awareness about oral cancer which is consistent with the findings of Mamta et al. (2012).

Tobacco use in India presents a huge problem as there is a wide and distinct array of forms in which tobacco can be consumed (Tiwari et al., 2014) also there are certain tobacco containing products like the pyrolised forms (mishri, bazaar, etc.) which are used as dentifrice to clean the teeth (Prakash et al., 2011; Soni and Raut, 2012). In our present study, we also tried to assess whether the women have used any product containing tobacco to clean their

teeth and out of the 496 (24.8%) women who had used tobacco containing product to clean their teeth, the major stakeholders were the rural women. This proves the lack of knowledge, myths and misconceptions about tobacco, present in the rural areas.

Apart from causing various health impacts on chronic users, tobacco is also harmful to even occasional users and there is a misconception amongst the people that occasional tobacco use is not injurious to health. The fact whether occasional tobacco use is injurious to health was considered harmful was also assessed in the interview, and substantial proportions of women in urban area (39.4%) and rural area (52.2%) disagreed.

A very important role is played by the family in the initiation of tobacco use by their child or other member of the family (Chadda, Sengupta, 2002). Tobacco use by a family member influences and increases the likelihood that somebody else in his/her family will adopt the tobacco consumption habits. A question was instilled in the interview that, do any of your family members consume tobacco and to which about 41% of the overall study population responded yes. When the urban and rural disparity for this was assessed, more proportions of family members of the rural women (48.4%) were consuming tobacco than do the family members of the urban women (33.4%). This fact can be well appreciated in our present study, as more number of rural women were indulged in consuming tobacco than do the urban women.

Trained health professionals can help and assist in educating people about the harms of tobacco and carry out tobacco cessation activity (Syeda et al., 2014). Also, they form the core of tobacco cessation services that may curb the tobacco related burden in the long run (Panda, 2013). In the present study, a question was asked to the women, whether they had ever been explained about the ill effects of tobacco by any healthcare specialist to which, out of the 2000 women interviewed astonishingly only 450 (22.50%) said yes whereas 1550 (77.50%) responded no. This indicates incomplete and inadequate and the lack of preparedness among the primary care physicians for tobacco cessation service delivery at public health facilities (Panda and Jena, 2013). The barriers which could resist the healthcare specialists explaining about the ill effects of tobacco could be lack of time, lack of monetary gains and lack of training regarding tobacco cessation intervention (Janakiram et al., 2011).

Workplace and home are the most common places for exposure to second hand smoke or smokeless tobacco, Global Adult Tobacco Survey (GATS) conducted in 2009-2010 in India reported that 26% and 57% of non-smokers are exposed to second hand smoke or smokeless tobacco in the workplace and home, respectively (GATS, 2010). Despite much legal enforcement on curbing smoking practices in the public places (COTPA, 2003), there are people who still violate these rules. Women and children are the most vulnerable candidates who are knowingly or unknowingly exposed to second hand smoke or passive smoke (Akansha et al., 2013). One reason may be the lack of courage admonish someone for smoking cigarettes in their presence, which was also assessed in the interview and it was found that 978 (48.9%) women said that

they had the courage admonish someone for smoking cigarettes in their presence whilst 1022 (51.1%) did not. Strikingly for the above asked question, amongst the rural women, only 346 (34.6%) replied yes, in comparison to 632 (63.2%) urban women which indicates a need for educating the women especially in the rural area about the harms of second hand smoke and important legislations enforced by the Government regarding the curbing tobacco menace.

Increased tobacco use by women poses very severe and grave hazards to their health, maternal and child health, and their family health and economic well-being. The Indian picture of female tobacco use is remarkably complex, which involves a range of tobacco products and responds to diverse factors including tobacco marketing, modernization urbanization, globalization, and shifts in women's status and roles.

A Strong action plan must be implemented to protect women from the harms and health risks of tobacco use. Immediate and compulsory implementation of tobacco control policies laid down by the WHO Framework Convention on Tobacco Control, such as smoke-free environments, tobacco marketing bans, graphic warning labels and increased tobacco taxes reduce tobacco use and will save the lives of women around the world. "A healthy woman is the mother of a healthier mankind."

References

- Aghi M (1993). Tobacco issues and concerns of women, children and families. paper presented at the tobacco forum, IDRC, Ottawa, Canada.
- Amos A1, Greaves L, Nichter M, Bloch M (2012). Women and tobacco: a call for including gender in tobacco control research, policy and practice. *Tob Control*, **21**, 236-43.
- Bansal R, John S, Ling PM (2005). Cigarette advertising in Mumbai, India: targeting different socioeconomic groups, women, and youth. *Tob Control*, **14**, 201-6.
- Bhonsle RB, Murti PR, Gupta PC (1992). Tobacco habits in India. In: gupta PC, hamner J III, murti P (eds). control of tobacco-related cancers and other diseases. proceedings of an International symposium, 15-19 january 1990; mumbai: TIFR, Oxford University Press, 25-46.
- Brandt AM (1996). Recruiting women smokers: the engineering of consent. *J Am Med Womens Assoc*, **51**, 63-6.
- Chadda RK, Sengupta SN (2002). Tobacco use by Indian adolescents. *Tob Induc Dis*, **1**, 111-9.
- Chhattisgarh State Profile. About Chhattisgarh (2014). Available from URL:<http://www.cgstate.gov.in/en/about-chhattisgarh> (Accessed on 11 december 2014).
- COTPA. Ministry of Health and Family Welfare (2003). The cigarettes and other tobacco products (prohibition of advertisement and regulation of trade and commerce, production, supply and distribution) Act, 2003 and related rules and regulations. Ministry of Health and Family Welfare, Government of India.
- Danawala SA, Arora M, Stigler MH (2014). Analysis of motivating factors for smokeless tobacco use in two Indian states. *Asian Pac J Cancer Prev*, **15**, 6553-8.
- Das LT, Wagner CD, Bigatti SM (2015). Illness representations of cancer among healthy residents of kolkata, India. *Asian Pac J Cancer Prev*, **16**, 845-52.
- GATS. Global Adult Tobacco Survey (2009-2010). Ministry of health and family welfare, government of India, New

- Delhi, 2010.
- Global Adult Tobacco Survey (GATS). Chhattisgarh, India: Fact Sheet: 2009-2010. Available from URL: www.mohfw.nic.in/WriteReadData/1892s/1455618937GATS%20India.pdf (Accessed on 5 December 2014)
- Goenka S, Tewari A, Arora M, et al (2010). Process evaluation of a tobacco prevention program in Indian schools--methods, results and lessons learnt. *Health Educ Res*, **25**, 917-35.
- Gupta PC (1996). Survey of sociodemographic characteristics of tobacco use among 99598 individuals in Bombay, India using handheld computers. *Tob Control*, **5**, 114-20.
- Janakiram Chandrashekara, B.C. Manjunathb, Madhu Unnikrishnan (2011). Addressing tobacco control in dental practice: a survey of dentists' knowledge, attitudes and behaviours in India. *Oral Health Prev Dent*, **9**, 243-9.
- Klesges RC, Elliott VE, Robinson LA (1997). Chronic dieting and the belief that smoking controls body weight in a biracial, population-based adolescent sample. *Tob Control*, **6**, 89-94.
- Kruk J (2014). Lifestyle components and primary breast cancer prevention. *Asian Pac J Cancer Prev*, **15**, 10543-55.
- Loyha K, Vatanasapt P, Promthet S, Parkin DM (2012). Risk factors for oral cancer in northeast Thailand. *Asian Pac J Cancer Prev*, **13**, 5087-90.
- Mamta Agrawal, Sushma Pandey, Shikha Jain, Shipra Maitin (2012). Oral cancer awareness of the general public in gorakhpur city, India. *Asian Pac J Cancer Prev*, **13**, 5195-9.
- Mehta FS, Gupta PC, Daftary DK, Pindborg JJ, Choksi SK (1972). An epidemiologic study of oral cancer and precancerous conditions among 101,761 villagers in Maharashtra, India. *Int J Cancer*, **10**, 134-41.
- Mini GK, Sarma PS, Thankappan KR (2014). Pattern of tobacco use and its correlates among older adults in India. *Asian Pac J Cancer Prev*, **15**, 6195-8.
- Moore MA, Sobue T (2010). Strategies for cancer control on an organ-site basis. *Asian Pac J Cancer Prev*, **2**, 149-64.
- Murray CJ, Lopez AD, eds (1996). The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Cambridge, Massachusetts: Harvard School of Public Health.
- Oberg M, Jaakkola MS, Pruss-Ustun A, et al (2010). Second-hand smoke: assessing the environmental burden of disease at national and local levels. Geneva: *World Health Organization*, (WHO Environmental Burden of Disease Series, No. 18).
- Panda R, Jena PK (2013). Examining physicians' preparedness for tobacco cessation services in India: findings from primary care public health facilities in two Indian states. *Australas Med J*, **6**, 115-21.
- Pathania VS (2011). Women and the smoking epidemic: turning the tide. *Bull World Health Organ*, **89**, 162.
- Peltzer K, Pengpid S (2014). Tobacco use, beliefs and risk awareness in university students from 24 low, middle and emerging economy countries. *Asian Pac J Cancer Prev*, **15**, 10033-8.
- Petersen PE (2003). Global framework convention on tobacco control: the implications for oral health. *Community Dent Health*, **20**, 137-8.
- Petersen PE (2009). Oral cancer prevention and control - the approach of the world health organization. *Oral Oncol*, **45**, 454-60.
- Pierce JP, Choi WS, Gilpin EA, Farkas AJ, Berry CC (1998). Tobacco industry promotion of cigarettes and adolescent smoking. *J Am Med Assoc*, **279**, 511-5.
- Prakash C. Gupta, Cecily S. Ray, Dharendra N. Sinha, Poonam K (2011). Singh smokeless tobacco: a major public health problem in SEA region: a review. *Indian J Public Health*, **55**, 199-209.
- Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L (2003). Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross sectional household survey. *Tob Control*, **12**.
- Roychowdhury S1, Roychowdhury G, Sen U (2005). Assessment of awareness level on tobacco and smoking habits as risk factors for cancer among lung and laryngeal cancer patients in Kolkata--a case control study. *Asian Pac J Cancer Prev*, **6**, 332-6.
- Singh A, Sahoo N (2013). Urban-rural differentials in the factors associated with exposure to second-hand smoke in India. *BMJ Open*, **3**.
- Soni Preeti and Raut D.K (2012). Prevalence and pattern of tobacco consumption in India. *Int Res J Social Sci*, **1**, 36-43.
- Sushma C, Sharang C (2005). Pan masala advertisements are surrogate for tobacco products. *Indian J Cancer*, **42**, 94-8.
- Syeda Kanwal Aslam, Sidra Zaheer and Kashif Shafique (2014). Health professional students' perceptions regarding their role in tobacco control: findings from the Global Health Professional Students Survey, Pakistan, 2011. *Subst Abuse Treat Prev Policy*, **23**, 9-25.
- Tiwari RV, Megalamanegowdru J, Parakh A, et al (2014). Prisoners' perception of tobacco use and cessation in chhattisgarh, India - the truth from behind the bars. *Asian Pac J Cancer Prev*, **15**, 413-7.
- Tobacco Control in India (2004). Report on Tobacco Control in India, Ministry of Health and Family Welfare. New Delhi, India: Govt of India.
- Ulas A, Tokluoglu S, Kos M, et al (2015). Lung cancer in women, a different disease: survival differences by sex in Turkey. *Asian Pac J Cancer Prev*, **16**, 815-22.
- World Health Organization (1997). Tobacco or health: a global status report. Geneva: WHO.