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Original Research Article

Prevalence of tobacco use and awareness about its ill-effects amongst adult rural population of district Rewari

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ABSTRACT

Background: To determine the extent of tobacco use and knowledge of its harmful consequences among the rural population of District Rewari, Haryana.
Methods: A cross-sectional study was done in the month of November 2021. A total 600 participants were interviewed using a pre-designed questionnaire for data collection.
Results: 23.3% of population consuming tobacco, with male population has highest tobacco consumption (84.97%). Tobacco consumption is in form of Bidi and Hookah (85.1%). People who tried quitting tobacco restarted due to withdrawal symptoms (64.3%), peer pressure (24.2%), and 11.5% due to other factors like stress, gastric problems. 29.5% females and 25.3% males find tobacco as the main cause of oral cancer. 94% of people consuming tobacco were aware about its ill-effects. 14.37% recognized swelling and ulcers, 3.27% red and white lesion, 1.64% hoarseness of voice as main symptoms of oral cancer, while, 76.8% didn't recognize any. 84.8% were never educated about causes, and early signs and symptoms of oral cancer by any healthcare professional, But the majority knows the ill effects of tobacco through advertisements and social media.
Conclusions: Although tobacco consumption has decreased so far even in the villages, people are still unaware of the risks associated with smoking, and those who wish to stop can't, due to lack of any professional help. New programs should be implemented like organizing awareness camps. Strictly banning the advertisements and marketing of tobacco products is the most necessary step in eliminating it from our society completely.

Keywords: Tobacco, Awareness, Consumption, Rural population

INTRODUCTION

Tobacco gained popularity in India over the centuries. Earlier it was a treasured commodity for nobles but, with time and misconception about its medicinal properties and its relation to the status, it became popular among other groups also, hence making the Indian population susceptible to its adverse effects.[1] In 2021 Tobacco Control Policy India Project report revealed about 275 million tobacco users in India.[2] Extensive tobacco product use is a type of modern epidemic and is termed as Brown Plaque.[3] The main cause of tobacco addiction is nicotine, which causes short term gratifying effect in the brain by changing the mesolimbic pathway.[4] India is the second largest producers of tobacco after China and due to this economic importance, the tobacco industry is flourishing day by day.[5,6] The mortality due to tobacco is more than that associated with tuberculosis, HIV/AIDS, and malaria combined.[7] India's tobacco control measures are complex because of the large population, easy availability of inexpensive tobacco products, and disproportionate implementation of tobacco control laws particularly in the rural areas.[8] Global adult tobacco survey, 2016-17 (GATS2) in India also showed adult tobacco exposure is more in rural as compared to urban and peri-urban areas.

People are not aware of early signs and symptoms and due to which disease progresses and results in increased morbidity and mortality.[9] Haryana is a state comprising of most of the population from rural background. District Rewari is one of the nearest districts amongst the 22 districts of Haryana near India's capital Delhi where rural population comprises 68% (approx.) of the total population.[10] Although many prevalence and awareness surveys in rural areas of India are being conducted, still death because of risk factors adore tobacco and alcohol, is incredibly common. Thus, a survey was planned to be conducted to determine the extent of tobacco use and knowledge of its harmful consequences among the rural population of District Rewari, Haryana.

Objectives

The study was conducted with the objective of collecting the baseline data about the level of consumption and awareness regarding tobacco and its adverse effects among the rural population of District Rewari, Haryana, and to help policymakers implement new programs in order to reduce morbidity and mortality due to its consumption.

METHODS

Study design, location and population

Current study is a cross-sectional study conducted in 10 villages of the Rewari district, namely: Berli Kalan, Berli Khurd, Bhotwas Bhondu, Choki No.2, Nangal, Kheri, Baldhan Khurd, Khijoori, Motla kalan, Musepur, A total of 600 study participants from 10 villages were interviewed. The present study was done in November 2021.

Study sample and sampling technique

The sampling frame for this study was the adult population of rural areas of District Rewari. According to 2011 census, there are 258 villages in Rewari district and the design effect for cluster sampling was taken as 2. Thus, the required sample size was 544 adult villagers (at 95% Confidence Interval). Around 600 adult villagers were surveyed. Out of 258 villages, 10 villages were selected as proportional to their size, and an equal number of adult participants were selected randomly from these 10 villages. The survey was conducted in an interview manner. A close-ended questionnaire written in the Hindi language was used to interview each participant.

Inclusion and exclusion criteria

Inclusion criteria for current study were; individuals within the age of 18 years and above, residing in the village at least for a year and willing to participate in the study. Exclusion criteria for study were; mentally handicapped, not willing to participate, not the resident of village and below 18 years of age.

Assessment tool

The data pertaining to study objectives were collected using a questionnaire. The questionnaire contains demographic information, oral hygiene practices, current and past history of Tobacco and Alcohol consumption, knowledge regarding oral cancer etiology, clinical features, and questions regarding family history of any cancer of participants. The participants were interviewed using a predesigned questionnaire. The questionnaire was pilot tested on 30 villagers and their responses were recorded. Based on the pilot study, necessary changes were done and then the questionnaire was finalized for the main survey. Each participant was interviewed by a trained interviewer to avoid any error in recording data.

Data collection

Data was collected by the student investigator under the guidance of the teacher guide. An awareness campaign was organized, where participants were interviewed using a predesigned questionnaire to assess the level of awareness among each participant, and after the interview, each participant was enlightened regarding the same. In order to achieve a higher response rate investigator also conducted door to door interview with the participants consent. Data collection was finished within two weeks.

Statistical analysis

The data was analysed using a statistical package for the social science version 21.0 (IBM Corp., Armonk, NY, USA). The frequency distribution tables were prepared to present overall and subgroups data. Categorical variables were compared using the Chi-square test, to establish whether a discrepancy between observed and expected data is the result of chance or a correlation between the variables, $p<0.05$ was considered statistically significant.

RESULTS

There were 52.8% females and 47.2% of males who were interviewed out of which 51.7% of females and 45.8% of males clean their oral cavity daily. There was 23.3% of population consuming tobacco, amongst them male population has highest tobacco consumption (84.97%) as compared to female population. (Table 1). There is relation of gender with consumption of tobacco, whereas, there is no relation of age group with tobacco consumption (Table 1-2). Approx. 85.1% of the people consume tobacco in form of Bidi and Hookah amongst which 35.4% consume only Bidi, 49.7% consume only hookah. only 1.86% consume in form of cigarette, 11.8 % consume in form of pan masala and 1.86 % consume in form of khaini (Figure 1). The frequency of tobacco consumption per day is increasing with increasing age, with the highest consumption frequency per day in the age group of 61-70 years (5-9 times per day).

Table 1: Relation of Tobacco consumption with sex.

Consume tobacco		Sex		Total
		Female	Male	
Yes	Count	21	119	140
	%	3.5	19.8	23.3
No	Count	296	164	460
	%	49.3	27.3	76.7
Total	Count	317	283	600
	%	52.8	47.2	100.0

p<0.001

Around 30% of the people who consume tobacco tried quitting. The majority who tried quitting tobacco were amongst 31-50 years of age, mostly due to self-motivation (47.1%), 35.7% due to health issues and 17.2% due to family pressure, but started consuming again due to withdrawal symptoms (64.3%), peer pressure (24.2%), and 11.5% due to other factors like stress, gastric problems. There is relation of gender with reasons of restarting tobacco consumption (Table 3).

Table 2: Relation of tobacco consumption with age.

Consume tobacco		Age (years)						Total
		17-30	31-40	41-50	51-60	61-70	70 above	
Yes	Count	16	25	26	28	23	22	140
	%	2.7	4.2	4.3	4.7	3.8	3.7	23.3
No	Count	96	104	86	60	69	45	460
	%	16.0	17.3	14.3	10.0	11.5	7.5	76.7
Total	Count	112	129	112	88	92	67	600
	%	18.7	21.5	18.7	14.7	15.3	11.2	100.0

p=0.021

Table 3: Data pertaining to reasons of restarting tobacco consumption after quitting in relation to gender.

Reason of restarting		Sex		Total
		Female	Male	
Non-current smokers + smokers who never quitted	Count	311	247	558
	%	51.8	41.2	93.0
Withdrawal symptoms	Count	3	24	27
	%	0.5	4.0	4.5
Peer pressure	Count	2	8	10
	%	0.3	1.3	1.7
Gastric problem	Count	0	2	2
	%	0.0	0.3	0.3
Stress	Count	1	2	3
	%	0.2	0.3	0.5
Total	Count	317	283	600
	%	52.8	47.2	100.0

p<0.001

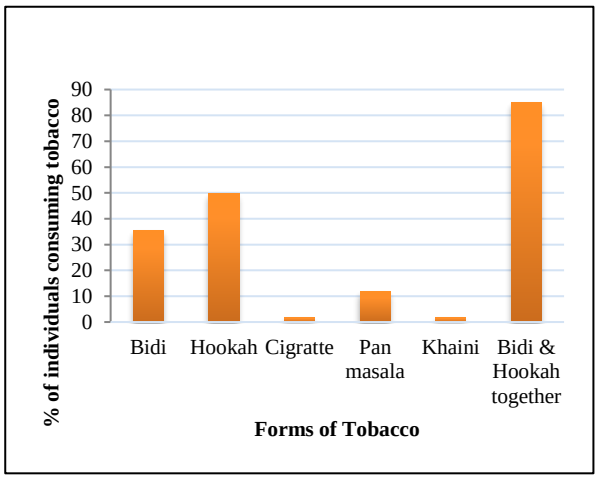

Figure 1: Percentage consumption of different forms of tobacco.

In almost half (43.8%) of the cases people from the participants family consume tobacco. Only 14.3% population consumes alcohol and 4.2% consume tobacco and alcohol together. Amongst all the participants who were interviewed 29.5% females and 25.3% males find tobacco as the main cause of oral cancer, while, 18.8% females and 20% males find both alcohol and tobacco as the main cause, (Table 4) and people from age group 17 to 50 were more aware as compared to the elder age groups (Table 5). There is no relation of gender and age group with awareness regarding causes of oral cancer. We found that, 94% of people who consume tobacco were aware about the ill-effects of tobacco. Around 14.37% population find swelling and ulcers as the main symptoms of oral cancer, 3.27% found red and white lesion as main symptoms, 1.64% hoarseness of voice, 2.04% found difficulty in swallowing, 1.64% found spices, 0.2 % found limited mouth open as the main symptom of oral cancer,

whereas, 76.8% population didn't recognize any early signs and symptoms of oral cancer.

11.3% of the participants gave a family history of oral cancer, and even after the family history, there was lack of awareness regarding oral cancer amongst the participants. Most of the population (84.8%) was never educated about causes, and early signs and symptoms of oral cancer by any healthcare professional, still the majority them knows the ill effects of tobacco through advertisements and social media (Table 6). There is no relation of age group with information regarding causes and early signs and symptoms of oral cancer provided by healthcare professionals. Around 99.2% population is aware that oral cancer can be life-threatening.

Table 4: Data pertaining to awareness regarding causes of oral cancer in relation to gender.

Awareness regarding causes of oral cancer		Sex		Total
		Female	Male	
None	Count	26	8	34
	%	4.3	1.3	5.7
Tobacco	Count	177	152	329
	%	29.5	25.3	54.8
Tobacco and alcohol	Count	114	120	234
	%	19	20.0	39
Alcohol	Count	0	3	3
	%	0.0	0.5	0.5
Total	Count	317	283	600
	%	52.8	47.2	100.0

p=0.008

Table 5: Data pertaining to awareness regarding causes of oral cancer in relation to age.

Awareness regarding causes of oral cancer		Age (years)						Total
		17-30	31-40	41-50	51-60	61-70	70 above	
None	Count	2	1	9	3	5	14	34
	%	0.3	0.2	1.5	0.5	0.8	2.3	5.7
Tobacco	Count	57	79	54	49	58	32	329
	%	9.5	13.2	9.0	8.2	9.7	5.3	54.8
Both tobacco and alcohol	Count	53	48	48	35	29	21	233
	%	8.8	8	8.0	5.8	4.8	3.5	39
Alcohol	Count	0	1	1	1	0	0	3
	%	0.0	0.2	0.2	0.2	0.0	0.0	0.5
Total	Count	112	129	112	88	92	67	600
	%	18.7	21.5	18.7	14.7	15.3	11.2	100.0

p<0.001.

Table 6: Data pertaining to Information provided by healthcare professional regarding causes, signs and symptoms of oral cancer.

Awareness by health worker		Sex		Total
		Female	Male	
Yes	Count	38	53	91
	%	6.3	8.8	15.2
No	Count	279	230	509
	%	46.5	38.3	84.8
Total	Count	317	283	600
	%	52.8	47.2	100.0

p=0.02

DISCUSSION

Tobacco is a slow poison for the human clan and is killing not just by causing health problems like COPD, tuberculosis, lung and oral cancers, heart disease, periodontal problems, tooth loss, sensitivity, discoloration of teeth, oral mucosa, osteoporosis but also by causing addiction, increasing financial burden and due to its severe withdrawal symptoms like craving, acidity,

constipation, headache, distress, anxiety, anhedonia people find it difficult to stop consuming.[11,12]

Globally oral cancer is the sixth most common type of cancer, with India contributing to almost one-third of the total burden and is the second country having the highest number of oral cancer cases.[13,14]

Up to 60% of oral cancers are extensive late-stage

malignancies at the time of diagnosis.[15] According to the GLOBOCON report, in 2020 India spent 2,386 crore rupees on oral cancer treatment.[16] The economic cost of tobacco use amounts to approximately 1.04% of India's gross domestic product (GDP).[17] This is strongly straining India's economy and most of the patients who received curative treatment are left unemployed.[18] Therefore, prevention and early detection strategies can lead to a reduction in advanced-stage disease up to 20% which could save up to 250 crores annually.[19] The enormous costs imposed on the nation's health care system due to tobacco use could potentially stress the public health care system and strain the economy and it warrants massive scaling up of tobacco control efforts in India.[11,17] In the study conducted by GATS, from 2016 to 2017 all over India, was found the prevalence of tobacco was 28.6% and in our study, the prevalence of tobacco consumption is 23.3% which is quite similar to the GATS survey. In our study, a significant gender difference was seen for tobacco consumption with 87.97% males and 12.03% females which is similar to the prevalence pattern seen in a study done by Agrawal in 2015.[20] In our study, it has been observed that approx. 85.1% of the people consume tobacco in form of Bidi and Hookah, which is similar to the study done by Sinha DN et al in the year 2003 in which 60.4% of the total population was found to consume tobacco which almost all smoking was in form of bidi and hookah.[21] A very likely reason for this observation is the pricing strategy of these tobacco products. Bidis cost nearly one-tenth of the cost of cigarettes, Gutkha, and khaini. Hookah is the second most common form of tobacco used and has a high prevalence rate in the villages. In 2018 D'cruz et al found that 23.8% of people recognize alcohol and 37.1% identify tobacco as a risk factor for the development of oral cancer, whereas 57% didn't recognize tobacco or alcohol as a risk factor.[22] But in our study, it has been observed that amongst all the participants who were interviewed 54.8% find tobacco as the leading cause of oral cancer, and 38.8% people recognize both tobacco and alcohol as the main cause of oral cancer, but no one was aware of any other cause of oral cancer like ill-fitting dentures, HPV, etc. According to the study done by Vishma et al in 2016, nearly 40% of the population didn't know about the symptoms of oral cancer whereas, in our study, it has been observed that 76.8% of the population didn't know about any early symptoms of oral cancer, which is actually due to lack of education by any local health practitioners.[23] According to the study done by John in 2019, swelling and non-healing ulcers were identified positively as the forms of presentation of oral squamous cell carcinoma which is similar to our study as 14.37% recognised swelling and ulcers, 3.27% red and white lesion, 1.64% hoarseness of voice as main symptoms of oral cancer.[24] Majority of the population who were aware of the signs and symptoms were mostly through advertisements on television, in newspapers and packets of tobacco products. This demonstrates that there is some knowledge, but in order to reach a larger population, periodic awareness campaigns are required in order to save as many lives as possible. As more and more people become concerned yet are unable to seek help to quit owing to lack of understanding, it is imperative that action to be taken to combat tobacco, the most destructive social scourge. It's not just up to the government to take action; as healthcare professionals, we can organise such events as part of our civic duty to raise awareness of tobacco use, assist smokers in quitting for good, and foster a healthy society.

CONCLUSION

Although tobacco consumption has decreased so far even in the villages, people are still unaware of the risks associated with smoking, and those who wish to stop can't, due to lack of any professional help. There should be new initiatives put into place to inform people about various ways to stop using tobacco and assist them in coping with withdrawal symptoms. Examples include setting up awareness camps, increasing advertising, and establishing aid centres close to rural areas. The most important first step toward entirely eliminating tobacco use from our society is to outlaw all direct and indirect marketing and advertising of the tobacco products, this would improve India's future not just in terms of the health of its people but also in terms of its economics.

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REFERENCES

1. Gaur M. Tobacco use in India: an epidemic of smoking, chewing and snuffing. J Environ Sci Toxicol Food Technol. 2017;11:11-3.
2. The International tobacco control policy evaluation project TCP India Project Report Findings From the Wave 1 Survey 2010-2011. Available at: https://www.healis.org/pdf/special-report/TCP-IndiaNR-ENG-Sept17_2015_v17-web.pdf. Accessed on 20 October 2021.
3. Wallace RB, Kohatsu N. Wallace/Maxcy-Rosenau-Last public health & preventive medicine. 15th ed. New York: McGraw-Hill Medical; 2008:6.
4. Ebbert JO, Patten CA, Schroeder DR. The Fagerström test for nicotine dependence smokeless tobacco. Addict Behav. 2006;31:1716-21.

5. Tiwari RK, Sharma V, Pandey RK, Shukla SS. Nicotine Addiction: Neurobiology and Mechanism. J Pharmacopuncture. 2020;23:1-7.
6. World Tobacco and its environmental impact: an overview, 2017. Available at: https://apps.who.int/iris/handle/10665/255574. Accessed on 20 October 2021.
7. Jayakrishnan R, Geetha S, Mohanan Nair JK, Thomas G, Sebastian P. Tobacco and alcohol use and the impact of school based antitobacco education for knowledge enhancement among adolescent students of rural Kerala, India. J Addict. 2016;2016:1-8.
8. Kaur J, Jain DC. Tobacco control policies in India: implementation and challenges. Indian J Public Health. 2011;55:220-7.
9. Aggarwal A, Abdullah M, Gupta J, Khan MH, Aggarwal N. Oral cancer awareness among the general public in Aligarh of Uttar Pradesh of India. Ann Dent Spec. 2020;8:13-19.
10. Rural urban distribution of population India. Available at: https://censusindia.gov.in/nada/ index.php/catalog/ 42617. Accessed on 20 October 2021.
11. Committee on the public health implications of raising the minimum age for purchasing tobacco products; board on population health and public health practice. In: Bonnie RJ, Stratton K, Kwan LY, eds. Washington DC: National Academies Press; 2015.
12. International institute of population sciences Mumbai. National family health survey 2015-16. Available at: http://rchiips.org/nfhs/pdf/NFHS4/ TN_FactSheet.pdf. Accessed on 20 October 2021.
13. Tbishur R, Ghulam SH. Oral cancer awareness in cancer capital of India: An insight. Int J Curr Res. 2018;10:65051-4.
14. Borse V, Konwar AN, Buragohain P. Oral cancer diagnosis and perspectives in India. Sens Int. 2020;1:100046.
15. Zachar JJ, Huang B, Yates E. Awareness and knowledge of oral cancer amongst adult dental patients attending regional university clinics in New South Wales, Australia: a questionnaire-based study. Int Dent J. 2020;70:93-9.
16. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021;71:209-49.
17. John RM, Sinha P, Munish VG, Tullu FT. Economic costs of diseases and deaths attributable to tobacco use in India, 2017-2018. Nicotine Tob Res. 2021;23:294-301.
18. Singh AG, Chaukar D, Gupta S, Pramesh CS, Sullivan R, Chaturvedi P, et al. A prospective study to determine the cost of illness for oral cancer in India. Cancer Med Sci. 2021;15:1252.
19. Lakra S, Kaur G, Mehta A, Kaushal V, Atri R, Sunder. Knowledge and awareness of oral cancer patients regarding its etiology, prevention, and treatment. Indian J Dent Res. 2020;31:625-8.
20. Agrawal M, Jain S, Maitin N, Gupta T, Maitin S. Prevalence and predictors of tobacco use among general public of Gorakhpur district, India. J Oral Biol Craniofac Res. 2015;5:16-20.
21. Sinha DN, Gupta PC, Pednekar M. Tobacco use among students in Bihar (India). Indian J Public Health. 2004;48:111-7.
22. D-Cruz AM, Shetty P, Shetty UA. Knowledge regarding oral cancer among the rural population in India. J Evol Med Dent Sci. 2018;7:3293-5.
23. Vishma BK, Shashikantha SK, Sheethal MP, Muniyal AS. Awareness of oral cancer and its risk factors in a rural community in Mandya, Karnataka, India. Int J Commu Med Public Health. 2016;3:347-52.
24. Shanly PJ, Archana M, Anuradha S, Meera P, Kadar N, Arun M. Awareness and knowledge about oral cancer among dental patients in a rural area of kerala: a cross sectional study. Int J Curr Adv Res. 2019; 8:18061-3.

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