

Knowledge and Perception Regarding Tobacco Among the Dental Professionals of North India

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Abstract:

Background: Oral health care providers have a unique opportunity to provide tobacco intervention services to patients, as tobacco use can have direct consequences on dental and oral tissues, increasing the likelihood of dental treatment necessary for current smokers compared to nonsmokers. The aim of the study was to assess the knowledge & perception regarding tobacco among the dental professionals of North India.

Methodology: The study was conducted on 1257 dental professionals using a questionnaire. Descriptive statistics and chi square test were applied keeping $p < 0.05$

Results: Participants of the study were aware of tobacco and its harmful effect on oral health.

Conclusion: The harmful effect of tobacco is not unknown. Regular screening of patients should be done and they should be made aware not only of the oral effects but also the general harmful effects of using tobacco and methods to quit tobacco.

Key words: Dentist, Dental Professional, Dental Surgeon, Tobacco, Smokeless Tobacco, Nicotine, Oral Cancer

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I. Introduction

Tobacco comes from two main species *Nicotiana tabacum* and *Nicotiana rustica*. The most important ingredient from the leaves of these plants is nicotine - a volatile alkaloid. Nicotine is one of the most addictive and stimulant drugs. Nicotine affects all organs, but predominantly, it binds to a central nervous system receptor and increases brain dopamine levels making it an addictive agent. Although nicotine is an addictive, most of the severe health effects of smokeless tobacco use come from other chemicals¹

The deleterious systemic and oral health effects of tobacco are well documented, as are the potential adverse effects of tobacco use on the outcomes of dental care.^{2,3}

Oral health care providers have a unique opportunity to provide tobacco intervention services to patients, as tobacco use can have direct consequences on dental and oral tissues,⁴ increasing the likelihood of dental treatment necessary for current smokers compared to nonsmokers.⁵ Tobacco intervention can be introduced to patients in the dental office when patients seek care for periodontal treatment, extractions or for cosmetic purposes.⁶

In addition to chewing tobacco leaves, other forms of smokeless tobacco are used in India and other countries. The terminology used for these SLT products and therefore the ingredients in tobacco mixtures went to make these products. Gutka is the most abundantly consumed smokeless tobacco form in India. Gutka has now been banned all over India,⁷ but a more vigorous implementation is necessary. Betel quid used in South Asia often contains smokeless tobacco.⁸

Chewing tobacco and use of SLT products cause considerable staining of teeth among users. Discoloration of the teeth is a common complication of tobacco chewing. The stains bind and penetrate the enamel, dentin, root surfaces causing a brown to black discoloration. Artificial dentures, prosthesis is also discolored by prolonged tobacco chewing. The coarse abrasives in tobacco products when constantly chewed cause abrasion or tooth wear. Chewing tobacco also increases the incidence of dental caries and thereby causes tooth loss.⁹ The aim of the study was to assess the knowledge & perception regarding tobacco among the dental professionals of North India.

II. Methodology

The present cross-sectional study was done on 1257 dental professionals of North India to assess the perception regarding Smokeless tobacco from November 2019 to February 2020. The sample size of 385 was calculated on an estimated population size of 10000, keeping a confidence interval of 95% & margin of error of 5% which was later increased to 1260 for generalizability, out of which 1257 responded. The questionnaire was filled by the investigator through personal interview telephone interviews, mail & other social media. Simple random sampling was used. People willing to participate in the study were included whereas people who refused to participate in the study or couldn't comprehend the questions of the study were excluded. Verbal consent was obtained from the participating population. The face validity of the questionnaire was checked by 10 individuals who weren't part of the study. The content validity was checked by a panel of eight experts. The content validity ratio was calculated using the formula given by Lawshe.¹⁰ The value obtained for this study was 0.88 which was above the minimum value of 0.85 for a panel of eight experts. Cronbach's alpha was found to be 0.72.

A 9 variable, structured, close-ended questionnaire in English and Hindi was distributed to people through phone interviews & e-mail. The responses were kept anonymous and confidential to encourage honest responses. The questionnaire was modified on the basis of the results of the pilot study. The data collected was entered & compiled using MS-Office Excel. Statistical analysis was done using the SPSS version 20. Frequency, the percentage was calculated. A Chi-Square test was applied. Statistical significance was kept at p value <0.05.

III. Result

The present cross-sectional study was done amongst dental professionals of North India to assess their perception on smokeless tobacco. The sample comprised of 1257 dental professionals with private practice of which 674 were males (53.62%) & 583 females (46.38%).

1114 of total sample practiced in urban area & only 143 of them in rural areas. 39% (490) of participants were B.D.S & 61% (766) were M.D.S. shown in table 1b. The mean age of dentists was 32±5 years with 10.5±4.1 years of practice (table 1c).

Table 1a: Demographic Data (age)

Age	Frequency	Percentage
25-35	531	42.24%
35-45	383	30.46%
45-55	214	17.02%
55-65	129	10.26%

Table 1b: Demographic Data (education)

Education	Frequency	Percentage
B.D.S	469	37.3%
M.D.S	788	62.7%

Table 1c: Demographic Data (experience)

Experience	Frequency	Percentage
0-5 years	146	11.61%
5-10 years	493	39.22%
10-15 years	436	29.7%
15-20 years	119	25.4%
20-25 years	83	4.2%

1067 of dentists take history of tobacco from patients whereas 190 of them doesn't. 23% (289) used pamphlets, 11% (138) relied on audio visual aids, 69% (867) did patient counselling, where as 94% (1181) said smokeless tobacco caused oral cancer, 49% (615) were of the opinion of respiratory disease, 36% (452) said it causes throat cancer, 96% (1206) said , 62% (779) said it causes lung cancer, 97% (1219) , 36% (452) said it caused cardio vascular disease, 27% (339) said it caused still birth & 9% (113) said it causes low birth while 3% (37) had no idea about it.

79% (993) were of the opinion that smoking tobacco is more harmful where as 82% said smokeless tobacco was more harmful, while 93% (1169) said both to be equally harmful & only 7% (87) had no idea about the topic.

When asked about the cause of using smokeless tobacco amongst the patients 96% (1206) said it was because of peer pressure, 82% (1030) because of recreation, 63% (791) because of stress, 58% (729) because of occupation & only 9% (113) because of taste.

On the opinion of how to reduce stress of smokeless 97% (1219) suggested to ban tobacco, 93% (1069) said inclusion of tax, 62% (779) through counselling, 56% (703) through tobacco control, 53% (666) screening, 38% (477) through global youth.

On the question of who is the most vulnerable population for smokeless tobacco 73% (917), 68% (854) urban, 86% (1081) male & 28% (351) are females, 88% (1106) were teenagers, 91% (1143) are in age group between 20-30 years, 86% (1081) are of age group 30-40 years, while 56% (703) of 50 years & above. The result was not significant with gender but significant with education shown in table 2

Table 2: Questionnaire

Questions	Gender (p value)	Age (p value)	Education (p value)	Year of experience (p value)
Do you take smokeless tobacco history of every patient that visit you?	0.12	0.01	0.04	0.02
Which factor(s) do you think is responsible for smokeless tobacco use?	0.34	0.00	0.00	0.12
Which part of the population according to you is vulnerable to smokeless tobacco?	0.01	0.00	0.01	0.01
Do you educate your patients about the ill-effects of smokeless tobacco?	0.51	0.47	0.03	0.02
How do you help the patient to quit smokeless tobacco?	0.26	0.01	0.02	0.11
Do you think smokeless tobacco can cause?	0.80	0.01	0.11	0.02
Which is more harmful?	0.01	0.01	0.01	0.32
Have you ever advised the patient to switch to smokeless tobacco as a harm reduction strategy against smoking?	0.67	0.33	0.23	0.43
What do you think is the best method to lessen the burden of oral cancer in India	0.76	0.02	0.01	0.04
Do you feel implant supported prosthesis has a better chewing efficacy than conventional prosthesis?	0.33	0.65	0.01	0.01

Chi square applied; $p < 0.05$

IV. Discussion

The present cross-sectional study was done to assess the perception regarding smokeless tobacco among dental practitioners. Dental health care workers are a largely untapped resource for providing advice and brief counseling to tobacco-using patients, and there are good reasons to believe that they can be effective in this role. A dental office visit provides an opportunity for dental professionals to point out the detrimental effects of tobacco use on oral and general health.¹¹

The use of tobacco has been related to impoverishment through borrowing and distress selling of assets thanks to costs of hospitalization. Preventive strategies can play a pivotal role in reducing these implications¹²

Dentists because of their position in society, have a unique role in tobacco control. Whether a dental personnel tobacco use behavior affects their professional attitude and clinical behavior is unknown, yet it represents a critical issue in public health policy, as dentists are usually seen as being primary health care providers. However, medical professionals even have responsibilities to scale back the prevalence of tobacco use among their patients, and that they may haven't yet maximized their efforts in meeting the tobacco epidemic. Health professionals have a certain responsibility as being role models for patients with regard to healthy behavior,¹³ as well as the public image they inadvertently portray outside of the work environment¹⁴

Regarding treatment modalities, only 21% of the doctors used pharmacotherapy, which was similar to study done by only a quarter 26% was aware of pharmacotherapy, reflecting the urgent need to sensitize health professionals on the different modalities of tobacco cessation. Such sensitization on the treatment modalities would certainly benefit patients by improving cessation rates among them¹⁵.

The known risk factors for carcinoma are tobacco use and alcohol consumption. Identifying patients' tobacco and alcohol use, whether current or past, is crucial for a practitioner to be knowledgeable about his or her patient's risk of developing oral cancer.¹⁶ Recently, infection with certain sorts of human papillomavirus has also been linked to oropharyngeal cancer. Owing to the multitude of causes that would possibly hinder the prognosis, early detection is, thus, crucial.¹⁷

Oral cancer is the third most common cancer in India after cervical and breast cancer among women. Oral cancer can occur anywhere within the mouth, including the lips, tongue, and throat, also because the salivary glands, pharynx, larynx, and sinuses. A lot of patients with oral symptoms such as ulcers, sores, swellings, areas of red or white lesions in the mouth or lips, numbness, pain or tenderness anywhere in the mouth, including tongue or problems with chewing, swallowing, or speaking present initially to their GP. Early detection and diagnosis of this disease spectrum by not only the Dental professionals, but also by the Medical

professionals is therefore of utmost importance in its successful treatment, and thus directly affecting prognosis.¹⁸

Overall dentists had good knowledge about the relationship of smoking and cancer. However, they exhibited poor knowledge about its effect on low birth weight & still birth.

Dental surgeons are in a perfect position to advise their patients regarding the ill effects of tobacco and it must be considered as a part of their routine work. New methods of tobacco cessation should be taught like “STAR” by WHO which is an artificial intelligence used in tobacco cessation. It’s like a video call where the patient talks to Florence the system, and it detects the response through video like a face to face conversation.¹⁹

The limitation of the study are response bias and social desirability bias as all the participants of the study are dental practitioners and the evaluating body also consists of dental practitioners.

CDE programs should be conducted to increase the knowledge regarding screening for oral cancer. New methods of tobacco cessation should be taught by dentist to patients for e.g. STAR a World Health Organization initiative for tobacco cessation.

V. Conclusion

The harmful effect of tobacco is not unknown. Regular screening of patients should be done and they should be made aware not only of the oral effects but also the general harmful effects of using tobacco and methods to quit tobacco.

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CONFLICT OF INTEREST

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