

Original Article

Oral health status among tobacco users in the selected rural population

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Abstract

This cross sectional study was carried out to assess the oral health status among tobacco users in the selected rural population of Gazipur district in 2011. Purposive sampling technique was used to collect data from 349 respondents, aged 18 years and above. Their mean age was 36.39 (SD±13.666) years. Among them, 173 (49.6%) were male and 176 (50.4%) were female. Their educational status shows that, majority (35.8%) was illiterate, 32% were from secondary level and only 6.6% from higher secondary & above level. Majority (51%) of the males were either businessman or agricultural worker, where as most of the females' (84%) were house wives. The tobacco smoking habit of the respondents showed that 33.2% were current tobacco smokers and rest (66.8%) were currently non smokers. Among the currently non-smokers, 91% were never smokers and rest (9%) were ever smokers. Among current tobacco smokers, almost all were male (98.3%), and among tobacco chewers (46%) majority was female. Seventy one percent respondents had knowledge about health problems due to tobacco intake. The oral health status among the current tobacco consumers (233) showed that 95% had dental stain, 73% had dental plaque, 66% had dental calculus, 59% had dental carries, 27% had soft tissue swelling, 15% had leukoplakia, 4% had erythroplakia and 5% had ulceration in their oral cavity. Among the current tobacco non-consumers (116), oral health status showed that 53% had dental stain, 52% had dental plaque, 46% had dental calculus, 36% had dental carries, 12% had soft tissue swelling, 5% had leukoplakia and 5% had ulceration in their oral cavity. The study findings showed that oral health status is better among the respondents who were not tobacco consumers.

Key Words: Oral health, tobacco users, oral lesion

Introduction

In South-central Asia 80% of head and neck cancers are found in the oral cavity and oropharynx. Oral squamous cell carcinoma comprises over 90% of the malignancies, which begin as inflammatory lesions such as leukoplakia, erythroplakia and erythroleukoplakia.¹ Notably, oral cancer is one of the few cancers whose survival rate has not improved over 30 years and during the past three decades a 60% increase in oral cancer in adults under the age of 40 has been documented.²

In Bangladesh, majority of the population are tobacco consumers. Tobacco can be consumed through the mouth in a variety of forms, from smoking to smokeless tobacco chewing. Tobacco leaf consumption accounts for many health hazards but most of the population is unaware of these hazards.³ Smokeless tobacco has been implicated as a risk factor for numerous oral conditions, starting from gingivitis to oral cancers. Oral cancer is the third most common cancer in Asia due to the habit of smokeless tobacco eating behavior with betel nut.³ On the other hand various factors such as poverty, illiteracy, ignorance, lack of health education, lack of proper supervision etc may be the cause of much of the consumption of tobacco. The use of tobacco products, especially cigarettes, results in exposure to hundreds of chemicals. Many of these have adverse health consequences.³ The primary agents in smoked tobacco are found in tobacco leaves and are transported to cigarette smoke. Smoked tobacco is the most prevalent and harmful tobacco product, with overwhelming evidence showing substantially increased risks of a variety of cancers.⁴⁻⁵

There is a well-demonstrated dose response relationship between tobacco use and risk of developing oral cancer, with the risk increasing significantly with the number of cigarettes smoked and the duration of smoking. Individuals who smoke and drink alcohol have a two to four-fold increased risk of developing oral cancer. Globally, oral cancer is the sixth most common malignant tumour for both genders.⁶

Smokeless tobacco chewing on or combined with betel nut may induce a variety of oral manifestations of diseases. Other effects include staining of teeth,⁷ decreased ability to taste and smell, and nicotinic stomatitis and keratosis.⁸ Most of these problems are reversible after cessation of tobacco use.⁹

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Oral cancer is a preventable cancer; the study of risk factors for oral cancer showed that tobacco smoking, tobacco chewing and alcohol drinking are the major risk factors for oral cancer in Asian populations. Cessation of chewing tobacco and smoking has been associated with the regression of oral leukoplakia, a common oral pre-malignant lesion.¹⁰ These lesions are of importance for the prevention of oral cancer. Pre malignant lesions are very easy and cheap to diagnose, but very expensive to treat. Dietary supplements of vitamin A and Beta Carotene have also been implicated in the regression as well as in the prevention of oral leukoplakia.¹¹

Cancer of the oral cavity is one of the commonest cancers in our country among both sexes, and poses 5th Rank among the male and 4th among the female.¹² Such very high incidence rate in Bangladeshi and Indian population reflect the persistent importance of paan & tobacco chewing and tobacco smoking habits equally common in both genders.¹³

Several studies on oral health status has been done in India, Pakistan and Asian residents of UK and USA, but not much yet has been done in our country. As oral lesions are very common and a preventable one, we wanted to conduct an elaborate study on the status of oral health in selected rural population of Sreepur Upazila of Gazipur District with a view to prevent these conditions.

Methods

This cross-sectional study was conducted to find out the oral health status among tobacco users in the selected rural population of Sreepur Upazila of Gazipur District. Data was collected from both the male and female population, aged 18 years and above, during February to June 2011, by a group of 4th year MBBS students from Dhaka Medical College. Purposive sampling technique was used to collect data from 349 respondents by face to face interview with semi-structured questionnaire. This instrument was pre-tested in the out-patient department of Dhaka Dental College hospital, and the 4th year students were taught to examine oral cavity by a dental surgeon. No sensitive or privacy invasive questions were asked. They were interviewed after fulfilling the informed consent form. An oral examination was done by a torch and a disposable tongue depressor after systematic recording of the history of each respondent. In this study we considered those respondents as current smokers who have smoked 100 cigarettes in their lifetime and currently smoke cigarettes every day. Former smokers were to those respondents who have smoked at least 100 cigarettes in their lifetime, but currently do not smoke. Never smokers were considered if the respondents never smoked in their entire lifetime.

All the data were checked and edited after collection. Results were analysed by using SPSS for Windows' XP program version 17.0. An analysis plan was developed keeping in view with the objectives of the study. Appropriate statistical tests were done according to the need of the study objectives where and whenever required.

Results

A total 349 data was collected from seven villages of Telihati union of Gazipur district. Our study population's age ranged between 18-96 years. Among them 173 (49.6%) were male and 176 (50.4%) were female. Majority (27.2%) was from 25-34 years age group. Their mean age was 36.45 (SD±13.620) years.

About the educational status of the respondents, majority (35.8%) were illiterate, only 6.6% had education of higher secondary and above level (Table-I). Among the 173 male respondents majority were either businessman or agricultural worker. Among the female respondents majority were house wives.

Table-I: Demographic characteristic of the participants (n=349)

Characteristics	Frequency	Percentage
Age (in years)		
18-24		20.3
25-34	95	27.2
35-44	82	23.5
45-54	60	17.2
55-64	30	8.6
≥65	11	3.2
Gender		
Male	173	49.6
Female	176	50.4
Marital status		
Unmarried	38	10.9
Married	302	86.5
Widowed	09	2.6
Educational status		
Illiterate	125	35.8
Primary	90	25.8
Secondary	111	31.8
Higher secondary & above	23	6.6

Mean ± SD : 36.39 ±13.67

The data revealed that majority (234, 67%) were currently non smoker and rest 115 (33%) were currently tobacco smoker. Among the current smokers, almost all (99.1%) were male and among non smokers majority (74.8%) were female. Chi-square test showed highly significant association between smoking habit and sex (p<.001).

Among 234 currently nonsmokers, majority (89%) was never smoker and only (11%) were ever smoker.

Analysis of data on the types of tobacco smoked by the respondents (115) showed that about 64% had filter tip cigarette, 19 % bidi and rest 7% smoked cigarette without filter tip. (Figure-1)

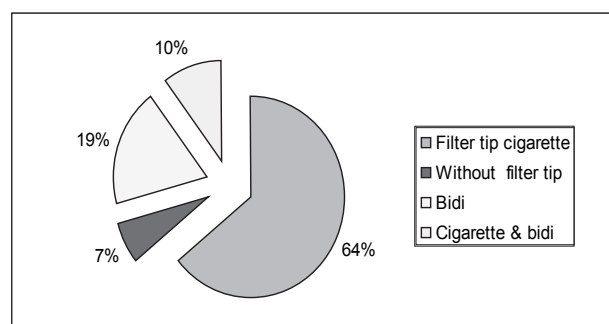


Figure-1: Types of tobacco smoked by the respondents (n=116)

Considering the average number of tobacco sticks smoked per day, majority (37%) had 6-10 sticks per day with a mean of 11.83 (SD±7.843) sticks per day. The duration of tobacco smoking shows that, majority (26%) smoked for 5 or less years. Mean duration of tobacco smoking was found to be 16.90 (SD±11.748) years. (Table-II)

Table-II: Duration of tobacco smoking among current smokers

Duration of tobacco smoking (yrs.)	Frequency	Percentage
≤5	31	25.6
6-10	19	15.7
11-15	18	14.9
16-20	21	19.0
21-25	9	7.4
26-30	7	5.8
≥31	11	11.6
Total	116	100.0

Mean 16.90±SD11.748yrs.

Majority of the respondents, 188(54%), were tobacco non chewer. Only 161(46%) had the habit, among them majority were female. Significant association was found between sex and current tobacco chewing habit (p=.001).

The types of tobacco chewing habit among 161 respondents showed that, 72% respondents had jorda, 14% had shada (figure 2). Majority chewed for five and less years. Data revealed that 233 (66.8%) respondent consumed tobacco in any form; either smoking or chewing. Among them, 161 (69%) consumed both.

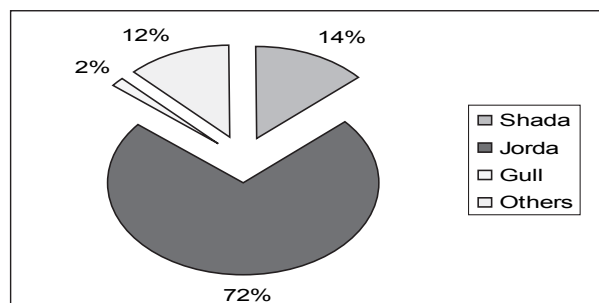


Figure-2: Tobacco chewing habit among the respondents (n=161)

Majority 247 (71%) had knowledge about health problems due to tobacco intake. Among them 56% were male and 44% female. Highly significant association (p<.001) was found between knowledge about oral health and gender.

About 61% of the respondents brushed teeth twice and among them majority were female. Highly significant (p=.001) association was found between brushing habit and sex. Majority (40%) of the respondents used tooth powder for cleaning their teeth, 37% used tooth paste and rest used charcoal, meswak etc.

Majority 236 (67.6%) of the respondents had no dental checkup before and rest 113 (32%) had dental checkup. The gender-based comparison revealed that 18.1% male and 14% female population had previous dental checkups.

The oral health status among the current tobacco consumers (233) showed that 95% had dental stain, 73% had dental plaque, 66% had dental calculus, 59% had dental carries, 27% had soft tissue swelling, 15% had leukoplakia, 4% had erythroplakia and 5% had ulceration in their oral cavity. Among the current tobacco non-consumers (116) oral health status showed that 53% had dental stain, 52% had dental plaque, 46% had dental calculus, 36% had dental carries, 12% had soft tissue swelling, 5% had leukoplakia, and 5% had ulceration in their oral cavity (Figure-3).

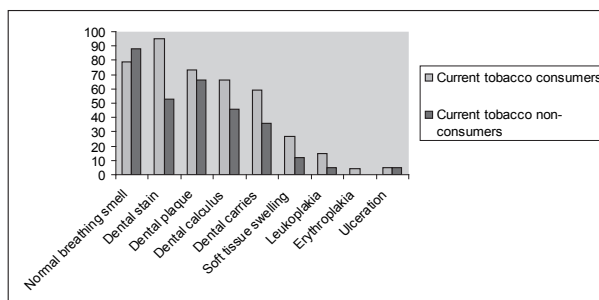


Figure-3: Oral health status among the current tobacco consumers (n=233) & current non-consumers (n=116)

Discussion

Majority of the population of our country, are consumers of tobacco either in any form. Tobacco leaf consumption accounts for many adverse effects on health. Smokeless tobacco has been implicated as a risk factor for numerous oral conditions, starting from gingivitis to oral cancers. The consequences of smoking on oral health are well known, but most of the population is unaware of these hazards.

Data was collected from 349 respondents, from seven villages of Telihati union. Among them, 49.6% were male and 50.4% female. Their mean age was 36.39 (± 13.67) years. About 36% respondents were illiterate and rest had different levels of education. This study result does not accord with our national statistics,¹⁴ as this study was done on relatively affluent class so majority of the respondents were educated and service holders.

Respondent's mean monthly income was Tk. 10698.662 (SD \pm 11430.662). About, 53% had personal income, among them majority were male. Majority (63%) belonged to nuclear family and rest 37% were from joint family. This study result does not accord with our national statistics,¹⁴ as joint family is still the majority.

Only 33% of our study population had current tobacco smoking habit. Among the current smokers, majorities were male and among non smokers majority were female. This finding are similar to our national statistics¹⁴ where majority of the tobacco users are male. Among the current smokers majority smoked cigarette and bidi. The findings are similar to Rahman M et al¹⁵ study, where they found that bidi smoking is popular among rural folk and the urban poor in the South Asian Region.

The current tobacco chewing habit of the respondent showed that only 46% had the habit and among them majority were female. The types of tobacco they chewed mostly were jorda and shada. This finding are similar to our national statistics,¹⁴ where tobacco smoking for ladies is not a custom till now and most of the females consume smokeless tobacco only. Summer RM study¹⁶ has reported about tobacco and betel nut chewing habit among Bangladeshi women in West Yorkshire. They found 95% had the habit of chewing pan and among them 62% added tobacco in leaf form and 27% as a component of jorda. Those who consumed more pans daily were significantly older, less literate, had a lower educational attainment and were more likely to believe that chewing betel quid was beneficial.

The majority (71%), in this study, had knowledge about health problems due to tobacco intake. Among them 56%

were male and 44% female. Their knowledge about tobacco causing diseases were cancer (34%), cardiovascular disease (8%), respiratory disease (18%) and ulceration of the mouth (4%). These findings are similar to the Rina K, Christen A & Khandekar SP studies.¹⁷⁻¹⁹ where they found male population had more knowledge about oral health problems than their counter part.

About respondents' daily tooth brushing habit, almost all respondents had the habit of daily tooth brushing. Majority (40%) of the respondents used tooth powder for cleaning their teeth, 37% used tooth paste and rest used charcoal, meswak etc. About 61% of the respondents brushed twice, among them majority were female. These findings are similar to the findings of a Bangladeshi study, where they found Muslim people brushes their teeth while performing oju.¹⁵

The oral health status among the current tobacco consumers (233) showed that dental stain (95%), dental plaque (73%), dental calculus (66%) and dental carries (59%) were most prevalent. Among the current tobacco non-consumers (116) oral health status was as follows - dental stain (53%), dental plaque (52%), dental calculus (46%) and dental carries (36%). From these findings it is evident that oral health status is better in case of current tobacco non consumers. Few cross-sectional studies have explored the relationship between smoking and dental caries. A study of military personnel from Illinois (mean age=25.9 years), found that smokers had a significantly higher number of untreated decayed teeth and missing surfaces than non-smokers.²² In a sample of 1,156 elderly patients, Jette et al²³ also found a relationship between smoking (current) and dental decay, ORs (compared with all smoking categories combined) being 1.47 for smokers (95% CI 1.00,2.17), 1.02 for ex-smokers (95% CI 0.78,1.34) and 0.67 for never smokers (95% CI 0.50,0.89). In a longitudinal study which followed patients undergoing periodontal therapy by a specialist for a period of 12 years, Raval et al.²⁴ found that smokers developed significantly ($p<0.05$) more root caries lesions than non-smokers.

The study findings showed that among the tobacco users, tooth was found more stained, more plagued and loose. Gingiva was found more inflamed, more white and red patches in the oral cavity. Dental caries was found more among the tobacco users. The oral health status was relatively better among tobacco non users. Even though present study gives an overall picture of prevailing tobacco related habits and their associated lesions from rural populations in Sreepur, more and more studies need to be conducted with wider population.

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