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Review Article

Tobacco Usage and Assessment of Oral Health and Knowledge of Oral Cancer Amongst OPD Patients in a Tertiary Hospital in Sikkim

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Abstract

Tobacco is one of the major health problems in Sikkim as it is worldwide. Oral cancer is common in Asia, and this is due to its association with smoking betel and alcohol consumption. Incidence varies, with highest rates in South Asia, particularly India, Bangladesh, Sri Lanka, Pakistan and Afghanistan. This is a cross sectional study on 100 patients attending OPD in a tertiary care hospital. The data for the Tobacco usage was assessed using a questionnaire which is adapted from a published article of similar nature in a different setup and location and the dependence of Nicotine was assessed using Fagerstrom questionnaire. This small scale hospital based study is an attempt to see the trends of Tobacco consumption in patients presenting to tertiary care hospital in Sikkim with the GATS Indicators of India 2016-2017. The consumption trend are in line whereas the knowledge attitude and perception seems to be better. The alleged data on exposure of second hand smoke in public places restaurants etc. seems to be more than the national average so does the motivation to quit based on various initiative seems to be on a higher front.

Keywords: Tobacco; Smoking; Nicotine; Fagerstrom; Oral Cancer

Introduction

Tobacco is one of the major health problems worldwide. In Sikkim, the prevalence of Tobacco Smoking is 10.9, which is a little higher than the national average of 10.9 but considerably lower than the average usage of other north-eastern states which stands at 23.4 [1].

Smokeless tobacco use is also a significant part of the overall world tobacco problem. The prevalence of use is relatively high in many countries especially in South Asia, and there is strong evidence that smokeless tobacco use leads to oral mucosal lesions, including oral pre-cancerous lesions, and gingival recession [2].

Smokeless Tobacco Usage prevalence in Sikkim in 2016 - 2017 stands at 9.7 which is less than half the national average of 21.4 and almost one fourth the north- eastern average of 38.6 [1].

Oral cancer is common in Asia, and this is due to its association with smoking (tobacco, bidi, self-rolled) and betel and alcohol consumption. Incidence varies, with highest rates in South Asia, particularly India, Bangladesh, Sri Lanka, Pakistan and Afghanistan [3].

One of the leading cause of preventable death is cigarette smoking, and this is a major public health concern [4]. Use of tobacco in any form mostly affects the heart and lungs, and smoking is a major risk factor for strokes, heart attacks, COPD, Idiopathic Pulmonary fibrosis (IPF), emphysema and cancer (particularly lung cancer, cancers of the larynx and mouth, esophageal cancer and pancreatic cancer) [5]. Smoke released during tobacco smoking exposes parts of the body to various carcinogens [6].

Several different types of premalignant lesions occur in the mouth. Some begin as white patches or leukoplakia, red patches erythroplakia or erythroleukoplakia. Some other premalignant lesions include oral lichen planus, oral submucous fibrosis and actinic cheilitis [7].

This study is an attempt to throw some light into this menace and see the consumption pattern, dependence levels and the oral health status of patients consuming tobacco. It also tries to find and compare the knowledge of tobacco users vs. non users about oral cancer. As a health provider it is imperative for us to disseminate information and hence the study also provides standard information to the participant about tobacco and its implication in oral cancer as a form of handouts.

Materials and Methods

This was a cross sectional study conducted on the patients attending the Out Patient Departments of Medicine, Surgery, Dental, ENT, Respiratory Medicine of Central Referral Hospital, Gangtok during the months of June to December 2019. Institutional Ethical Clearance was granted.

A total of 100 patients were included by convenience random sampling.

Adults above the age of 18 years were included and those not consenting and those already suffering/treated for oral or laryngeal or nasopharyngeal malignancies were excluded.

Patient identifier was not collected whereas demographics like age and gender was collected.

The data for the Tobacco usage was assessed using a questionnaire which is adapted from a published article of similar nature in a different setup and location [8] and the dependence of Nicotine was assessed using Fagerstrom questionnaire [9]. The questionnaire validity and reliability has already been assessed by a panel of eight expert members (staff members of Department of Public Health Dentistry, The Oxford Dental College, Hospital and Research Centre, Bangalore). Questionnaire regarding the attitude and knowledge of oral cancer is taken from Global Adult Tobacco Survey Collaborative Group by WHO [1] and Scoring for Dependence: 1 - 2 (Low Dependence) 3 - 4 (Low to Moderate Dependence) 5 - 7 (Moderate Dependence) 8+ (High Dependence).

Oral Cavity Examination was done using a hand held torch light and disposable Tongue Depressors. Staining of Teeth. Oral and Buccal Mucosa Condition (Including presence of Nicotine Mucositis/ Leukoplakia/Erythoplakia) gingival Recession and Oral Submucous Fibrosis was noted and recorded. Patient was handed over a handout for Oral Cancer and related information for dissemination of knowledge.

Results and Observations

- No of participants: 100.
- Age distribution: Min 19 years; Maximum 60 years; Average 38 years.
- Sex distribution: Male 94%; Female 6%.

Although it was a convenient random sampling in hospital setup, most of the female patients were not consenting for the study hence the majority 94% of the sample were male respondents.

Illiterate	11
Primary	08
Intermediate	14
Class XII	25
Graduates	20
Post Graduates	21
Prof/Honors	01

Table 1: Education levels of respondents: (in %).

The maximum no of respondents (25%) were Class XII pass and only 11% were illiterate.

99% of the respondents were current tobacco users

- Type smoking 83% non smoking (Chewing only) 13%.
- Smoking Sub Type Cigarette 100% / Beedi 0%/ Pipe 0%/ Self-Rolled Tobacco 0%.
- Chewing Sub Type Gutka/ Khaini 100%/ Pan Masala/.

65 subjects (78.3%) of the smokers had less than 1 pack years on them and only 5 (6.02%) had 5 pack years, no respondent had more than 5 pack years of smoking.

	No of subjects		No of subjects
Khaini < 1 year	9	Smoking 1 pack year	65
Khaini 1-2 years	2	Smoking 2 pack years	12
Khaini >2 years	1	Smoking 3 pack years	4
	Smoking 4 pack years		3
	Smoking 5 pack years		4

Table 2: Duration of usage.

Symptom	As only symptom	As associated with other symptoms
Cough	16	35
Nasal Obstruction	0	13
Burning Sensation Mouth	3	20
Discomfort in Throat	8	21
Bad Breath	6	12
Sores in Mouth	3	08
Reduced Stamina	0	02

Table 3: Association of tobacco usage in respondents (Figures in percentage).

Cough was the most common association with 51% of respondents complaining of cough, 16% in isolation and 35% in combination with one or more other complaints. Reduced stamina was the less commonly reported association. All other associations like nasal obstruction, burning sensation, bad breath, mouth sores were also reported more in association with one or more co symptoms rather than in association.

< Rs 500	62
Rs 500 - Rs 1000	26
Rs 1000 - Rs 1500	10
Rs 1500 - Rs 2000	1
> Rs 2000	1

Table 4: Monthly expenses on tobacco (Figures in percentage).

Parameter	Present	Absent
Staining of Teeth	94	06
Oral and Buccal Mucosa Condition Healthy/Gingivitis/ Mucositis/Others	82	18
Nicotine Mucositis	96	04
Leukoplakia	06	94
Erythoplakia	00	100
Gingival Recession	56	44
Oral Submucous Fibrosis.	00	100

Table 5: Oral cavity examination findings (Figures in percentage).

Nicotine mucositis was the most common of the findings with 96% subjects and staining of teeth was the second most common oral examination findings with 94% of subjects showing it, Erythroplakia, OSMF on the other hand wasn't detected in any and leukoplakia seen in 06% of the subjects.

Discussion

The Fagerstorm [9] questionnaire for dependency showed that maximum of the respondents scored 1 (50%) or 0 (17%) or 2 (9%) (0 is a score which although not possible on the scale is the score for patients who don't smoke within 60 minutes of waking up.) See table 6. A patient who scores 1 or 2 on this score is classified as having low dependence on Nicotine. This suggests that these group doesn't need Nicotine Replacement Therapy, although it is recommended that they be monitored for nicotine withdrawal. 4 patients scored 3 and 5 patients scored 4. Any subject scoring 3 or 4 would be considered to be having low to moderate dependence on nicotine and could be offered patches or lozenges or inhaler or gum.1 patient scored 5 and is considered as moderately dependent on nicotine as for scores 5 and 6. These category requires combines therapy of lozenges with gum. No cases of scores 6 and above were found in our study. These would have been highly dependent on noicotine and would require combination therapy for their dependence.

The Global Adult Tobacco Survey (GATS) [1] is a global standard for systematically monitoring adult tobacco use (smoking and smokeless) and tracking key tobacco control indicators. We utili-

How soon after you wake up do you smoke your first cigarette?
Within 5 minutesθ
6 to 30 minutesθ
31 to 60 minutes θ
After 60 minutes θ
Do you find it difficult to refrain from smoking in places where it is forbidden (e.g., in church, at the library, in the cinema)?
No θ
Yes θ
Which cigarette would you hate most to give up?
The first one in the morningθ
Any otherθ
How many cigarettes per day do you smoke?
10 or less θ
11 to 20θ
21 to 30θ
31 or moreθ
Do you smoke more frequently during the first hours after waking than during the rest of the day?
Noθ
Yesθ
Do you smoke when you are so ill that you are in bed most of the day?
Noθ
Yesθ

Table 6a: Fagerstrom questionnaire for dependence.

sed the GATS Key Indicators survey and compared it with Indian GATS data v2 (2016-17) see table 7.

Current Indian tobacco users for males is 42.4% and female is 14.2% and total is 28.6%. According to our study 100% respondents were tobacco users. This is because this is a hospital popula-

Score	No (%) of Respondent	Remarks
0*	17	Low Dependence
1	50	
2	9	
3	4	Low to Moderate Dependence
4	5	
5	1	Moderate Dependence
6	0	
7	0	
8	0	High Dependence
9	0	
10	0	

Table 6b: Scoring aggregate of the Fagerstrom questionnaire for dependence.

Questions	Response as Yes	Response as No
Cessation (Have You..)		
Made a quit attempt in past 12 months	54	46
Planned to or were thinking about quitting	89	11
Been advised to quit by a health care provider in past 12 months	38	62
Second hand smoke (Have you been exposed to tobacco smoke at..)		
Home	15	85
The workplace	13	87
Government buildings/offices	63	37
Health care facilities	01	99
Restaurants	29	71
Public transportation	74	26
Media (Have you..)		
Presently noticed smoking tobacco advertisement	07	93
Noticed any type of cigarette promotion	02	98
Noticed smokeless tobacco advertisement	05	95

Noticed any type of smokeless tobacco promotion	02	98
Thought about quitting because of a warning label	61	27
Noticed anti-smoking tobacco warning on the television or radio	94	06
Noticed anti-smoking tobacco warning on the newspaper	100	00
Knowledge, attitude and perception (Do you believe…)		
Smoking causes serious illness	100	00
Breathing other smoke causes serious illness in non-smokers	100	00
Breathing other people's smoke causes serious illness in children	100	00
Use of smokeless tobacco causes serious illness	100	00
Use of smokeless tobacco during pregnancy causes harm to foetus	100	00

Table 7: Scoring of GATS 2 key indicators.

tion that we were studying and is not representative of the general population of the place and time.

Indian Smokers who made a quit attempt in past 12 Months for men, women and combined are 38.8%, 35.5% and 38.5% respectively and for smokeless tobacco users who made a quit attempt in past 12 months for men, women and combined are 35.2%, 28.4% and 33.2% respectively According to our study it was 54% for combined population. Current Indian data for smokers who planned to or were thinking about quitting for men, women and combined are 56.3%, 46.4% and 55.4% respectively and for current smokeless tobacco users who planned to or were thinking about quitting for men, women and combined are 52.7%, 42.2% and 49.6% respectively. According to our study it is 89% for combined population. Indian data for smokers advised to quit by a health care provider in past 12 months for men, women and combined are 50.3%,36.6% and 48.8% respectively and for smokeless tobacco users advised to quit by a health care provider in past 12 months for men, women and combined are 33.3%, 28.6% and 31.7% respectively. Whereas for smokers it was found to be lower in our study at 38%. This shows the significant awareness of the need to and attempts by the study population regarding cessation of tobacco usage.

Indian adults exposed to tobacco smoke at home for men, women and combined are 38.1%, 39.3% and 38.7% respectively. Our study shows it at 15%. Indian adults exposed to tobacco smoke at the Workplace for men, women and combined are 32.7%, 17.9% and 30.2% respectively. Our study shows it at 13%. Indian adults exposed to tobacco smoke at government buildings/offices for men, women and combined are 8.1%, 2.4% and 5.3% respectively. Our study shows it at a higher 63%. Indian adults exposed to tobacco smoke at health care facilities for men, women and combined are 6.8%, 4.4% and 5.6 respectively. Our study shows it at a mere 1%. Indian adults exposed to tobacco smoke at restaurants for men, women and combined are 13.0%, 1.6% and 7.4% respectively. Our study shows it at 29%. Indian adults exposed to tobacco smoke at public transportation for men, women and combined are 16.6%, 9.9% and 13.3% respectively. Our study shows it at 74%. Our population shows more second hand smoke exposure in government buildings/offices, restaurants and public transportation than the national average.

Indian adults who noticed smoking tobacco advertisement amongst current smokers, non smokers and overall were 23.7%, 18.7% and 19.2% respectively. 7% of our respondents reported the same. Indian adults who noticed any type of cigarette promotion amongst current smokers, non smokers and overall was 8.1%, 4.9% and 5.3% respectively, only 2% of our respondents reported this. Indian adults who noticed any type of bidi promotion amongst current smokers, non smokers and overall was 11.0%, 4.7% and 5.4% respectively. Indian adults who noticed smokeless tobacco advertisement amongst current smokers, non users and overall was 21.4% 17.5% and 18.3% respectively, 05% of our respondents reported noticing smokeless tobacco advertisement. Current national cigarette smokers who thought about quitting because of a warning label for men, women and combined are 64.6%, 26.7% and 61.9% respectively.

Current national bidi smokers who thought about quitting because of a warning label for men, women and combined are 55.8%, 28.6% and 53.8% respectively. A higher (61%) of our subjects had the same thought. Current smokeless tobacco users who thought about quitting because of a warning label for men, women and combined are 52.9%, 29.9% and 46.2% respectively. It was 61% in our study. Adults who noticed anti-smoking tobacco warning on the television or radio for amongst current smokers, non smokers

and overall was 64.6%, 68.4% and 68.0% respectively. It was 94% for TV Radio and 100% for newspaper warnings in our study.

Adults who believed smoking causes serious illness amongst current smokers, non-users and overall was 91.3%, 92.6% and 92.4% respectively. Adults who believed breathing other people's smoke causes serious illness in non-smokers amongst current smokers, non-users and overall was 91.0%, 92.6% and 92.4% respectively. Adults who believed breathing other people's smoke causes serious illness in children amongst current smokers, non-users and overall was 91.8%, 93.5% and 93.3% respectively. Adults who believed use of smokeless tobacco causes serious illness amongst current smokers, non-users and overall was 94.0%, 96.1% and 95.6% respectively. Adults who believed use of smokeless tobacco during pregnancy causes harm to foetus amongst current smokers, non-users and overall was 83.5%, 89.1% and 87.9% respectively. In our study all the knowledge attitude perception responses were 100% positive. This shows a high level of knowledge in the respondents as compared to national scenario.

Conclusion

This small scale hospital based study is an attempt to see the trends of Tobacco consumption in patients presenting to tertiary care hospital in Sikkim with the GATS Indicators of India 2016 - 2017. The consumption trend are in line whereas the knowledge attitude and perception seems to be better. The alleged data on exposure of second hand smoke in public places restaurants etc. seems to be more than the national average so does the motivation to quit based on various initiative seems to be on a higher front. A much extensive bigger population based study needs to be undertaken to see the changing trends of the tobacco menace, its effects, and control measures on its public consumption and advertisement.

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