ORIGINAL RESEARCH

Awareness on Oral Cancer: An Overriding Track toward its Prevention - A Cross-Sectional Survey

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ABSTRACT

Introduction: Lifestyle factors are the prime cause for a majority of oral cancer cases. Early diagnosis of oral cancer has become a formidable challenge for health-care professionals due to lack of knowledge and awareness among the population. There is a profound necessity to bring awareness among public on the risk factors, signs, and symptoms of oral cancer. Equally necessary are dental visits and behavior modification because of the fact that oral cancer is largely preventable is not an overstatement.

Objectives: The objective of this study is to know the oral cancer awareness and attitude toward prevention of oral cancer among patients attending a dental institution and to find the influence of socioeconomic status on the awareness and attitude toward oral cancer.

Methods: A cross-sectional study was carried out on 306 randomly selected adult patients visiting the outpatient department of a teaching dental hospital for a period of 1 week. To assess the patients' knowledge and attitude, a 13 item structured, self-administered questionnaire was used. Chi-square test and Spearmen correlation tests were used to analyze the data using SPSS Version 20 ($P \leq 0.05$).

Results: 65.7% of the samples were males and 34.3% were females. 85.94% of the study population was found to have low or very low knowledge. A significant correlation was observed between levels of socioeconomic status and knowledge levels. In the study population, 33.1% of people have reported habits which can cause oral cancer, among which only 36% of people were interested in quitting the habits on doctors' advice.

Conclusion: These results give us a heads-up on the cognizable need for the execution of oral cancer awareness programs particularly in the socioeconomically disadvantaged areas which could be an overriding track toward oral cancer prevention.

Keywords: Awareness, Early detection, Knowledge, Oral cancer.

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INTRODUCTION

Cancer is a silent epidemic and one of the most common causes of morbidity and mortality today, with more than 10 million new cases and more than 6 million deaths each year worldwide.[1] Oral cancer burdens approximately to 20–30% of all cancers and ranks as the most common cancer in men and third most common cancer in women. Recently, relative increase in the incidence of oral cancer has been observed.[2] India contributes to the highest number of incident cases of oral cancer. In India, the age-standardized incidence rate of oral cancer is reported at 7.5 per 100,000 population (males 9.8 and females 5.2). It has been reported that, by the year 2010, the total number of estimated new oral cancer cases in India alone would amount to 73,946 (males 48,074 and females 25,872) with around 50,540 deaths due to oral cancers alone (males 32,936 and females 17,604).[3] The WHO stated that cancer burden would increase to 20 million by 2020 with 70% in the developing world.[4] Since at least two-third of all oral cancer cases are due to lifestyle factors, such as tobacco and alcohol abuse, effective primary preventive programs must be initiated to bring behavioral changes.[2] Besides these habitual factors, other stimuli such as human papillomavirus infection,[5] genetic susceptibility,[6] and diet[7] have been shown to influence carcinogenesis.[8] Unfortunately, most oral cancers are diagnosed in advanced stages, requiring aggressive treatment and associated morbidity, resulting in higher mortality rates than when diagnosed early.[9,10] Early diagnosis of oral cancer has become a formidable challenge for health-care professionals due to the lack of knowledge and awareness among the population. The public needs to be aware of the risk factors, signs, and symptoms of oral cancer. Equally necessary are dental visits and behavior modification because of the fact that oral cancer is largely preventable is not an overstatement. Researchers in oral cancer believe that the early diagnosis of oral cancer greatly increases the cure and survival rates in addition to minimizing impairment and deformity. Despite recent advances in the diagnosis and treatment of cancer, visual accessibility of oral mucosa, and easy early detection, the prognosis of oral cancer has yet to change. This is because the proportion of oral cancer cases diagnosed at an early and localized stage is

still less than approximately 50%.[2] Thus, awareness on signs of oral cancer and knowledge about its causative factors is very important as majority of the public still remains unaware of basic knowledge about oral cancer.[11] There is a need for oral health promotion with regard to oral cancer prevention and early detection. The literature about oral cancer knowledge and risk factors among Indian population is limited.[10,12] Hence, the aim of the present study was to investigate the oral cancer awareness and preventive attitude among the patients attending a dental institution and to find the influence of socioeconomic status on the awareness and attitude toward oral cancer.

MATERIALS AND METHODS

A cross-sectional study was conducted to investigate the oral cancer awareness and preventive attitude among the patients attending a teaching dental hospital and to find the influence of socioeconomic status on the awareness and attitude toward oral cancer. Before the start of the study, the institutional ethical committee approval was obtained. The awareness and attitude were identified using a structured, self-administered questionnaire. The questionnaire consists of 13 questions, of which eight were concerned with awareness and five were with attitude. Data on demographic details were also obtained along with the questionnaire. Depending on the prevalence (24%) obtained in the pilot survey, the sample size was determined using the formula $Z\alpha^2$ p q/d^2, taking 1.96 as the value of standard normal variate (Z) at 95% confidence interval, and the permissible error of 0.05. The sample size thus obtained was 281. The sampling method used was systematic random sampling. The study was conducted on alternate days of a week over a period of 3 months in the year 2016. The days were switched every week, i.e., if the 1st, 3rd, and 5th days were included in a week, 2nd, 4th, and 6th days were included in the next week and so on. Every fifth subject from the subjects visiting the outpatient department of a teaching dental hospital on the day of data collection was included in the study. Data were collected from 322 participants, of which 16 were not included in the final sample owing to lack of completeness in the filling of questionnaire. Test–retest reliability of the questionnaire was checked by read-ministering the study questionnaire to 30 participants on their subsequent visits to the hospital. The questionnaire was found to have good test–retest reliability with a kappa value of 0.87. The study pro forma consists of two parts, first part is about demographic details and the second part consists of knowledge, awareness, and attitude questions related to oral cancer. Under demographic details, age, gender, and socioeconomic status (Kuppuswamy scale-2015) were recorded. The knowledge level of each participant was obtained based on the percentage of correct answers given. Individuals with 25% or less were categorized under "very low" knowledge level, 26–50% under "low," and 51–75% under "high," and those with more than 75% were categorized under "very high" knowledge level. Chi-square test and Spearman correlation tests were employed to analyze the data using SPSS version 20 software. $P \leq 0.05$ was considered to be statistically significant.

RESULTS

The sociodemographic characteristics of the study population are presented in Table 1. Of the 306 subjects participated in the study, 105 (34.3%) were females. Majority of the participants belonged to the age group of 18–30 years (33.67%). The educational level of the study participants was considerably good with 38.9% of them having graduate or postgraduate education. 51.3% of the subjects belonged to lower middle socioeconomic status. A considerable majority of the study participants were found to have low or very low knowledge relating to oral cancer (85.94%). Health-care professionals (doctor/dentist) and electronic media were reported to be the most common sources of information regarding oral cancer. 82.4% of the study participants were episodic visitors to a dental clinic who seek care exclusively in cases of pain or discomfort, and only 17.6% reported regularly visiting a dentist for oral health care. Only 54.6% of the study participants showed a positive attitude toward the importance of dental visits on observation of any mucosal changes in the oral cavity. In the study population, 32.68% of people have the habits which can cause oral cancer, among which only 35.6% of people were interested in quitting the habits on doctors' advice.

Table 2 shows the differences in oral cancer knowledge levels of participants based on their age. There were no significant differences in the knowledge levels among different age groups, and majority population were found to have low knowledge level regardless of the age group. The influence of socioeconomic status on oral cancer knowledge levels of the participants is presented in Table 3. Significant differences were found between people from different socioeconomic groups.

Females were found to be relatively better compared to males in oral cancer knowledge levels; however, the knowledge levels among both the genders were low [Table 4]. When Spearman's correlation test was applied, knowledge on oral cancer was significantly positively correlated with only socioeconomic status of the participants but not age group.

Health-care professionals were reported to be the major source of information for oral cancer in the present

Table 1: Descriptive statistics

Variables	Category	Number of individuals (%)
Gender	Male	201 (65.7)
	Female	105 (34.3)
Education	Illiterate	40 (13.1)
	Primary school certificate	13 (4.2)
	Middle school certificate	19 (6.2)
	High school certificate	60 (19.6)
	Intermediate or post high school	45 (14.7)
	Graduate or postgraduate	108 (38.9)
	Professional or Honors	21 (7.5)
Socioeconomic status	Upper	8 (2.6)
	Upper middle	66 (21.6)
	Lower middle	157 (51.3)
	Upper lower	54 (17.6)
	Lower	21 (6.9)
Knowledge	Very high	6 (2.0)
	High	37 (12.1)
	Low	185 (60.5)
	Very low	78 (25.5)
Source of information about oral cancer	Doctor/Dental Doctor	192 (62.7)
	Newspapers, pamphlets (print media)	69 (22.5)
	T.V, Movies, Internet (electronic media)	135 (44.1)
	Family members	27 (8.8)
	Others/other media	10 (3.3)
	No idea	35 (11.4)
Regular dental visits	Yes	54 (17.6)
	No	252 (82.4)
Dental visit in case of oral mucosal changes	Yes	167 (54.6)
	No	70 (22.8)
	Don't know	69 (22.6)
Adverse habits	Tobacco smoking	66 (21.6)
	Tobacco chewing	3 (1.0)
	Alcohol	35 (11.4)
	Betel nut chewing	18 (5.9)
	No habits	206 (67.3)
Willingness to quit the habit on doctor's advice	Yes	36 (35.6)
	No	2 (1.9)
	Cannot say	62 (62.3)

Table 2: Knowledge levels of the individuals based on their educational level

Age group	Number of individuals	Very low knowledge (%)	Low knowledge (%)	High knowledge (%)	Very high knowledge (%)	Total (%)
18–30	103	19 (18.4)	75 (72.8)	7 (6.8)	2 (1.9)	103 (100)
31–40	83	23 (27.7)	48 (57.8)	12 (14.5)	0	83 (100.0)
41–50	54	11 (20.4)	35 (64.8)	6 (11.1)	2 (3.7)	54 (100.0)
51–60	36	16 (44.4)	14 (38.9)	6 (16.7)	0	36 (100.0)
> 60	30	9 (30.0)	13 (43.3)	6 (20.0)	2 (6.67)	30 (100.0)
Total	306	78 (25.5)	185 (60.5)	37 (12.1)	6 (2)	306 (100)

Chi-square test, $P=0.078$ (Not Significant); Spearman's correlation, ($r=-0.024$, $P=0.092$)

study accounting for 62.7%. 82.6% of the study population admitted that they visit a dentist only when they had a problem. 54.6% of the people said that they would consult a dentist in case of any white/red discoloration in the oral cavity. 22.8% responded that they would not consult, and 22.6% were unsure of what they may do in case of such observation. 32.68% of the study population had habits that are carcinogenic. Among these people, only 35.6% were interested in quitting the habits on doctor's advice. 2% admitted that they would not be able to

Table 3: Knowledge levels of the individuals based on their socioeconomic status

Socioeconomic status	Number of individuals	Very low knowledge (%)	Low knowledge (%)	High knowledge (%)	Very high knowledge (%)
Upper	21	3 (14.3)	12 (57.1)	5 (23.8)	1 (4.8)
Upper middle	54	5 (9.3)	40 (74.1)	8 (14.8)	1 (1.9)
lower middle	157	41 (26.1)	98 (62.4)	15 (9.6)	3 (1.9)
upper lower	66	23 (34.8)	35 (53.0)	7 (10.6)	1 (1.5)
Lower	8	6 (75.0)	0 (0.0)	2 (25.0)	0 (0.0)
Total	306	78 (28.5)	185 (60.5)	37 (12.1)	6 (2)

Chi-square test, *P*=0.003** (Highly Significant); Spearman's correlation, (*r*=0.292, *P*=0.031*)

Table 4: Knowledge levels of the individuals based on their gender

Gender	Number of individuals	Very low knowledge (%)	Low knowledge (%)	High knowledge (%)	Very high knowledge (%)
Male	201	49 (24.4)	131 (65.2)	18 (9.0)	3 (1.5)
Female	105	29 (27.6)	54 (51.4)	19 (18.1)	3 (2.9)
Total	306	78 (25.5)	185 (60.5)	37 (12.1)	6 (2)

Chi-square test, *P*=0.049* (Significant)

quit the habits. 62.3% were indistinct in the decision of quitting.

DISCUSSION

Oral cancer is a serious and growing problem in many parts of the globe.[13] A plethora of factors such as tobacco smoking, tobacco chewing (pan and gutka), alcohol, betel net chewing, sun exposure, and nutritional deficiency have been reported to be risk factors for oral cancer. However, tobacco remains the primary cause for oral cancer. It acts synergistically with alcohol, rendering those tobacco users who consume excessive amounts of alcohol to be particularly at risk.[14] Being a condition that is greatly influenced by lifestyle factors, reduction in the incidence of oral cancer calls for an increase in the awareness among people and an improvement in their preventing attitude toward oral cancer.

In the present study which was done to determine the awareness on oral cancer, it was found that the study population has a limited knowledge and poor positive attitude toward oral cancer. 85.94% of the study population has low or very low level of knowledge on oral cancer. These results are in accordance with the studies conducted by Pakfetrat *et al*.[2] and Bhurgri *et al*.[15] and in contrast with the studies conducted by Shakoor *et al*.[16] Significant differences between males and females were found in the oral cancer knowledge levels, with females demonstrating comparatively better knowledge. In conservative countries like India where females conventionally do not get interested in or adopt deleterious habits such as tobacco and alcohol consumption, it could be comprehended that females with negative attitudes toward these deleterious habits also find a reason for why they are deleterious. In the present study, health-care professionals were reported to be the major source of information for

oral cancer. These results are in contrast with a study done by Amarasinghe *et al*.[17] where a majority of study population relied on electronic media for information on oral cancer, suggesting that electronic media also have a great potential in informing the public on oral cancer.

More than 80% of the study participants were episodic visitors to dental clinics. Similar results were reported by Devadiga *et al*.[18] A minor percentage of people responded that they go for regular dental checkups. The importance of regular dental visits has to be carried deep into the public enlightening them on the absence of symptoms of oral cancer in its early stages. Only slightly more than half of the study participants' demonstrated to have an attitude of consulting a dentist in case of any white/red lesions which highlights the need to bring awareness among public on the clinical manifestations of oral precancerous lesions and oral cancer. Only 35.6% of participants with deleterious habits exhibited interest in quitting the habits on doctor's advice. It is clear from these findings that public attitude toward quitting the carcinogenic habits have to be changed. In course of achieving the change, formidable challenges would be in the cards for certain, especially in view of the personal commitment of the public. Hence, empathy plays a crucial role in designing motivational interventions and to progress toward a positive outcome in this context. Social desirability bias could be a limitation for this study which is inherent for all self-reporting studies, especially in light of the fact that this study included a collection of data on deleterious habits and the readiness to quit those habits.

Recommendations

- Strengthening of health systems, in general, and public health systems, in particular, are essential for

a nation to respond better to its health and health system challenges.

- Strict laws must be enforced to limit youth access to tobacco and alcohol. All the promotional activities by tobacco industries must be prohibited, and excise taxes on tobacco and alcohol products must be increased.
- Due emphasis must be placed on improving education and training of health-care professionals. The health-care curricula must be designed in such a way that competency in prevention, diagnosis, and multidisciplinary management of oral cancer is ensured.
- The burden of oral cancer can be significantly reduced by ensuring the availability of affordable early detection programs. Population-based early detection programs with special emphasis on risk groups shall be universally implemented. This aspect of accessibility must be given due importance in India where the payment for oral health care services is out of pocket almost exclusively and seeking regular oral health care for a considerable majority is prohibitively expensive.
- Cancers, cardiovascular diseases, diabetes, and respiratory diseases, the four major chronic non-communicable diseases (NCDs) are strongly linked with tobacco consumption and heavy alcohol use. Efforts toward prevention of oral cancer can be integrated with the efforts toward prevention of other NCDs.
- Efforts must be made to indoctrinate positive oral health behaviors among public which includes regular self-examination of the oral cavity. The proficiency of public in oral cavity self-examination must be determined, and necessary measures must be taken toward betterment, if required.
- In many societies, cancer remains a taboo subject and persons with cancer are subjected to discrimination. Efforts must be made toward reducing this stigma and dispelling myths about oral cancer. Establishing advocacy networks of oral cancer survivors might help in this endeavor and must be considered diligently.

CONCLUSION

These results give us a heads-up on the cognizable need for the execution of oral cancer awareness programs. The negative influences of oral cancer on the quality of life of patients and consequently on their families cannot be overstated. This negative influence further aggravates when it comes to socially disadvantaged families, and these communities must be given due importance while putting efforts toward oral health promotion with regard to oral cancer.

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