Review Article

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ORAL PRECANCER TO CANCER-AWARE TO BEWARE

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ABSTRACT:

Background: Oral squamous cell carcinoma (OSCC) accounts for most malignant lesion of the oral mucosa. The tumor may arise in a part of mucosa that appears normal, but it may also be preceded by clinically detectable lesions of that type known to predispose to malignancy. Lack of proper knowledge and awareness among medical and dental personnel result in delay or sometimes missing the diagnosis. It has been demonstrated that effective awareness measures can reduce the incidence of these lesions.

Method: Questionnaires were delivered to undergraduate medical and dental students and the non-teaching staff assessing to assess the awareness of the sample regarding various aspects of precancerous and cancerous lesion of the oral cavity.

Results: Medical students were less aware regarding the risk factors for oral cancer as compared to dental students. Awareness regarding pre-cancerous lesion and condition was poor among medical, dental and non-teaching staff.

Conclusion: This study shows that non-teaching staffs because of their working environment in the institution are aware regarding oral cancer and pre cancer. However, more efforts need to be taken to use them as an adjunct tool in spreading awareness regarding oral cancer and pre cancer among general population.

Key words: Awareness, Questionnaires, Pre-Cancerous lesion, non-teaching staff.

INTRODUCTION:

One of the major health threats in the world today is oral cancer. The term “oral cancer” is used to describe any malignancy that arises from oral tissue. There is a worldwide annual incidence of 274,300 cases and 128,000 deaths, with two-thirds of the burden in the developing countries.[1] India has one of the highest rates of oral cancer in the world, accounting for one-third of the total cancer burden; this figure continues to rise and accounts for 50-70% of total cancer mortality.[2] Oral squamous cell carcinoma accounts for most malignant lesion of the oral mucosa. The tumor may arise in a part of mucosa that appears normal, but it may also be preceded by clinically detectable lesions of that type known to predispose to malignancy. The morbidity and mortality rate associated with oral squamous cell carcinoma (OSCC) are still unacceptably high and prognosis is generally poor. Yet this need not be so for two reasons, one the oral cavity is an area which can be easily accessed for

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direct examination and can be subjected for diagnostic procedures. Secondly, OSCC very often is preceded by mucosal changes known as pre cancer or potentially malignant disorders(PMD) which aids in early recognition and elimination.

Common PMD's include Oral leukoplakia, Oral submucous fibrosis, Oral lichen planus etc. Prevalence of oral leukoplakia in India varies from 0.2%-5.2%.[3] The prevalence of Oral Submucous Fibrosis (OSF) in India varies between 0.03% and 3.2% according to various studies conducted here.[4,5,6,7,8,9] Also, higher occurrence of leukoplakia and cancer are observed in OSF patients and it is believed to be an important risk factor for oral cancer among youths. The prevalence of oral lichen planus (OLP) varies between 0.02%-0.4%.[10,11,12] In the large-scale community-based surveys with long follow-up periods performed in India, estimates of the rate of malignant transformation of potentially malignant disorder range from 0.13% to 2.2% per year.[13] Though these potentially malignant disorder provide a window of opportunity for early detection of oral cancer lesion most of the time they go unnoticed or undiagnosed.

Because most of the PMD and early stages of oral cancer are asymptomatic these lesion go unchecked leading late stage diagnosis and poor prognosis. Lack of public awareness has been reported in the past to be the most significant factor in delaying referral and treatment of oral cancer.[14,15] Lack of general medical and dental practitioner's knowledge has also been shown to contribute to delays in referral and treatment. Many a time patients seek help from general medical practitioner for oral lesion rather than general dental practitioner. Hence they need to be as aware regarding the oral lesions as to aid in early detection of these lesions. The nursing staff in a hospital based set up also is exposed to patients who may have oral lesions. It is paramount that nursing staff are also aware of the risk factors and clinical signs of oral cancer.

Though awareness level of dental practitioner has been well documented, awareness level among medical practitioner and nursing staff especially in India has been poor. Hence an attempt has been made to assess the awareness level among medical, dental students and the non teaching staff of medical and dental colleges regarding risk factors and clinical presentation of oral cancer and potentially malignant disorders.

MATERIALS AND METHODS:

Oral cancer awareness of medical dental students and non teaching staff was assessed by means of a questionnaire. The questionnaire was delivered during routine lectures of pre final and final year medical and dental students. Nursing staff were approached directly by the researchers and asked to complete the questionnaire with the researchers present. A total of 15

questions were asked to medical and dental students out of which 4 were open question while rest were required to be answered in yes or no. Questions for non teaching staff were typed in local language and were slightly modified to avoid inability to understand medical terminology. Questions asked were to investigate the awareness of subject regarding opportunity to examine patients with oral lesion, knowledge regarding risk factors for oral cancer, knowledge regarding clinical presentation of oral cancer, knowledge regarding potentially malignant disorder and their presentation. The participating students were made aware that the data would be used for research purposes. The results were analysed using the $\chi 2$ test.

RESULTS:

A total of 349 individuals participated in the survey (128: medical students, 125: dental students, 96: non teaching staff). 39.8% (n=51) of medical 49.6% (n= 62) of the dental, and 41.6% (n=40) of non teaching staff knew someone with oral cancer. A significant difference was noted regarding medical and dental students who had personally examined patients with oral cancer ($\chi 2=47.861$, df =2, p=0.00), figure 1. Overall 100% of the participants identified with one or more risk factors for oral cancer. Most common being smoking, tobacco and betel nut chewing. Other factors were poorly identified by the participants. Dental students were able to identify risk factors better than medical students. As stated in previous studies alcohol was less identified as risk factor for oral cancer by medical students.[16,17,18] Non teaching staff showed good awareness regarding the common risk factors for oral cancer (tobacco, smoking and betel nut)Figure 2 . Medical students were unable to identify different pre-cancerous lesions compared to dental students (figure 3). Only 30.4% (n=39) of the medical students identified OSMF compared to 76 %(n= 95) of the dental students. Similarly 35.1% (n= 45) and 24.2% (n=31) of the medical students identified leukoplakia and erythroleukoplakia respectively as compared to 79.2% (n=99) and 64% (n= 80) of the dental students. None of the medical students could identify lichen-planus as potentially malignant lesion. 40% (n= 40) of the non teaching staff could identify reduced mouth opening as a sign of development of pre cancer lesion (fig 4). Also 56% (n= 56) and 15% (n =15) individuals identified burning sensation and ulcer as sign of development of pre cancerous lesion. Oral and maxillofacial surgery was the most common choice for referral for the patients with oral cancer among dental and non teaching staff (69.6% & 39% respectively) whereas Ear Nose and Throat (ENT) was common choice for medical students (71%, n =91)(figure 5).

DISCUSSION:

Oral cancer continues to remain one of the greatest threats to health of the ever growing population of India. With one of the highest incidence of oral cancer in

world and the alarmingly increasing trend of younger population getting addicted to tobacco, prevention of oral cancer possess a great challenge.

While there have been many oral health prevention measures that have taken in the country there implementation and success is largely unknown. Awareness regarding oral cancer among general population still remains poor. Medical and dental practitioners deal with patients with oral lesions on a day to day basis. Hence they hold prime responsibility towards early detection and treatment of the oral cancer.

Though a medical practitioner is more likely to encounter patients with oral cancer [19, 20] in our study we found that the medical students are comparatively less exposed to patients with oral cancer than dental students. Only about 27% (n=35) of the medical students had personally seen or examined a patient with oral cancer. Lack of exposure to patients with oral cancer will compromise their capability to early detect and diagnose the lesion. Also it explains the poor capability of the medical students identify with the clinical presentation of oral cancer.

67% of the medical students identified ulcer in comparison to 96% of dental students and 75% identified exophytic growth in comparison to 92.8% of the dental counterparts as one of the feature of oral cancer (figure 6). Other clinical presentations like bleeding, pain and induration were poorly identified by both though dental students fared better. It is noteworthy that in our study that almost more than 50% of the non teaching staff could also identify with ulcer and exophytic growth as manifestation of oral cancer.

The most common risk factor associated with oral cancer in India is tobacco and alcohol.[21] Tobacco is taken in many forms both as smoked and smokeless. It includes guthka, pan masala, betel quid and several others, all of which contain betel nut, catechu, tobacco, lime, flavouring and colouring agents. Because the oral mucosa is directly exposed to them, they act as potent carcinogens. In our study we placed an open question regarding risk factors for oral cancer. To this most common factors identified were tobacco, betel nut and alcohol. Smoked and smokeless tobacco and betel nut were identified well by both medical and dental students. Non teaching staff were also to a greater extent able to identify the above mentioned risk factors well. However alcohol was one risk factor that was poorly identified by medical students as compared to dental students. This is consistent with previous studies done on medical practitioners.[16,17,18] Hence greater emphasis on role of alcohol as a risk factor should be made in future teaching of undergraduate medical students. Knowledge regarding other risk factors was poor in dental, medical and non teaching staff. However dental student fared better among others.

Pre cancerous lesions provide a window of opportunity to prevent future development of oral cancer. According to certain studies it has been found that in South Asia, the majority of squamous cell carcinomas are preceded by clinically distinct precancerous lesions or conditions caused by tobacco or areca nut chewing habit whereas in Europe and other parts of the western world most of the carcinomas arise de novo.[22,23] Hence it is of utmost importance that medical and dental practitioner are well aware of the sign and symptoms of oral pre cancer so that they can detect and diagnose the lesion properly. However in our study we found that medical students were poorly informed regarding these pre cancerous lesions and conditions. Less than 35% of the medical students could identify with OSMF, leukoplakia, and erythro - leukoplakia. Only 1.5% of the medical students knew lichen planus was a potentially malignant disorder. Dental students were somewhat better aware regarding, OSMF (76%), leukoplakia(75.2%), erythroleukoplakia (64%). However they also poorly identified lichen planus as a potentially malignant disorder.

In order to assess the level of awareness regarding pre cancerous lesions and conditions among non teaching staff, in our questionnaire we asked them about the clinical presentations of these lesions as it was not expected that they would know the actual medical terms for the lesion. 40% identified reduced mouth opening and 56% identified burning sensation in mouth as features of pre cancerous lesion. Clearly they were aware regarding the features of OSMF. However none stated red and white lesions as one of the presentation of pre cancerous lesion.

CONCLUSION:

This study highlights the need for increased awareness among medical dental students regarding the oral cancer and pre cancerous lesion. This study also shows that non teaching staff because of the working environment in the institution are aware regarding oral cancer and pre cancer, however more efforts need to be taken to use them as an adjunct tool in spreading awareness regarding oral cancer and pre cancer among general population.

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TABLES AND GRAPHS:

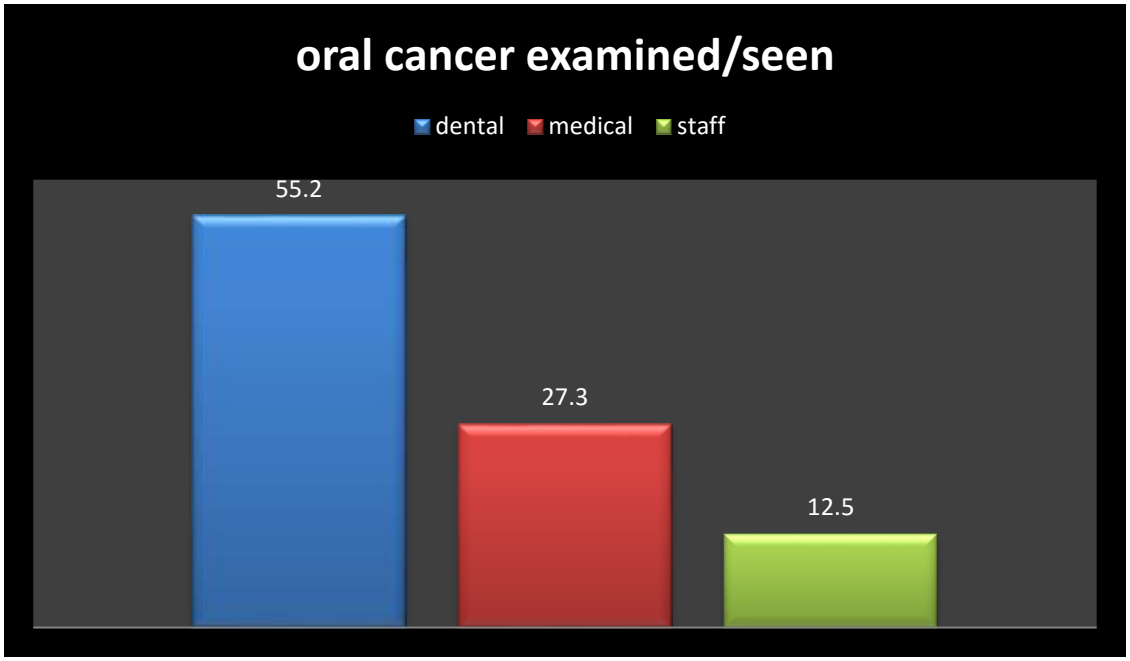

Figure 1 : Percentage of Dental, Medical students and non teaching staff personally seen or examined oral cancer patients

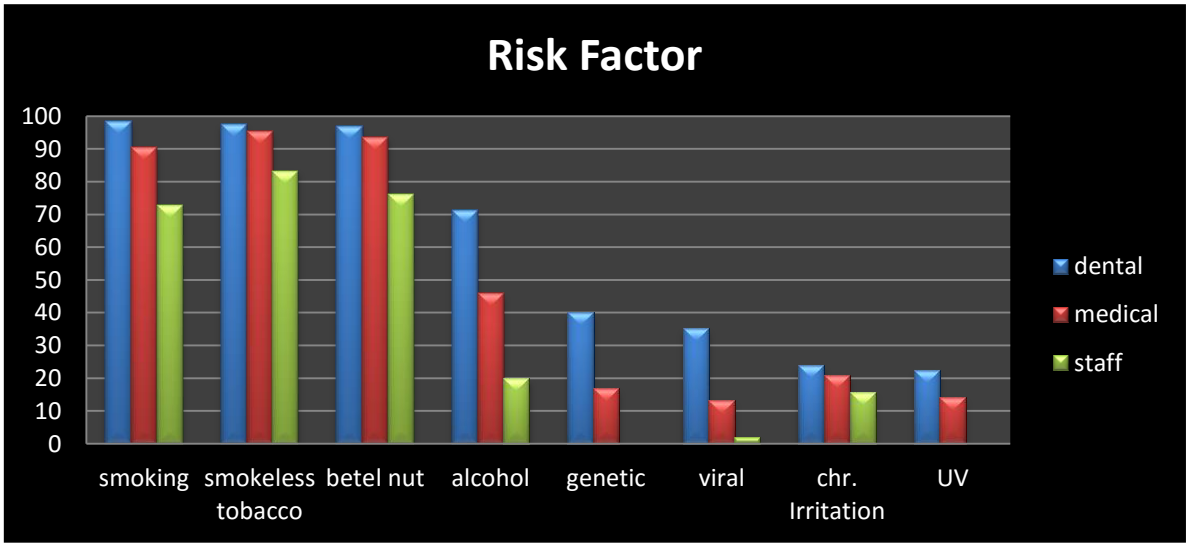

Figure 2: Percentage of Dental , Medical students and non teaching staff identifying with risk factor associated with oral cancer

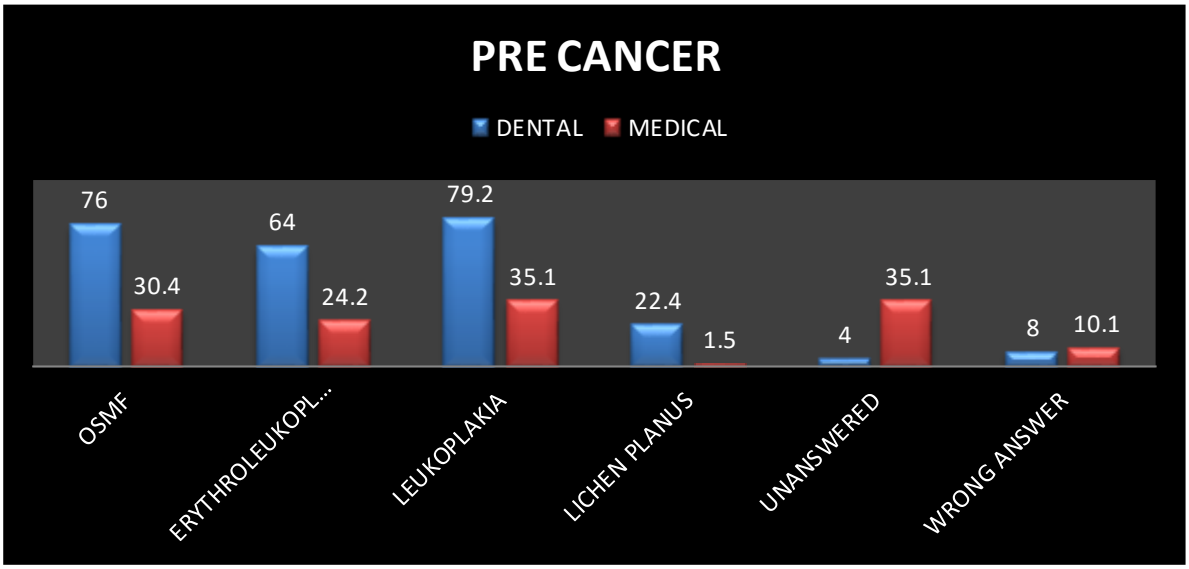

Figure 3: Percentage of Medical and Dental students identifying potentially malignant disorders

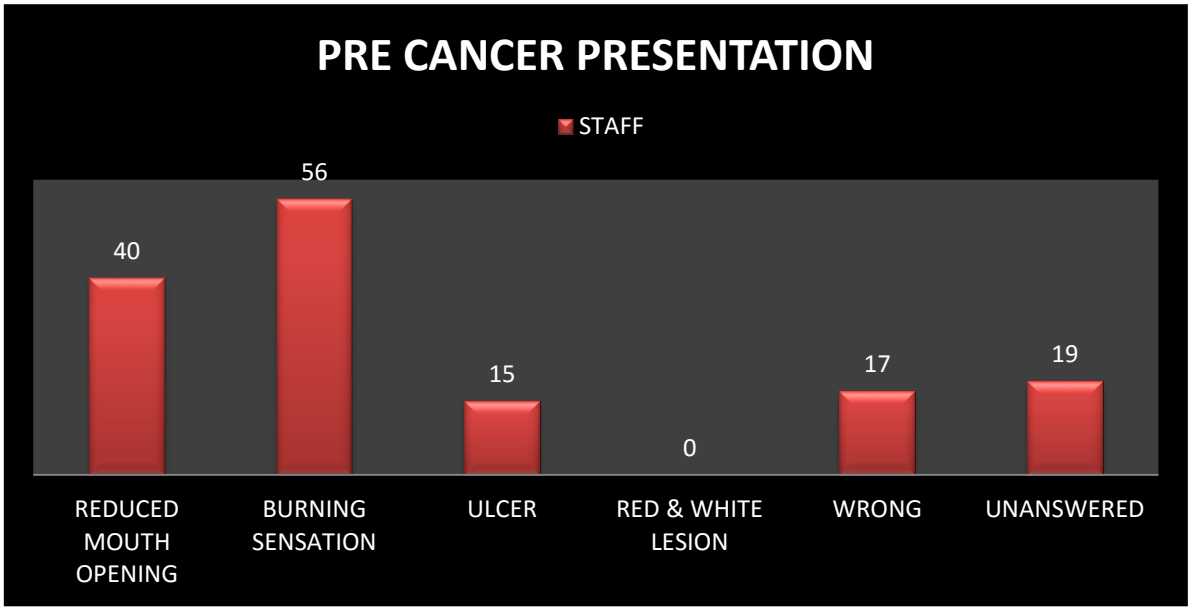

Figure 4 : Percentage of Medical non teaching staff identifying clinical presentation of potentially malignant disorder.

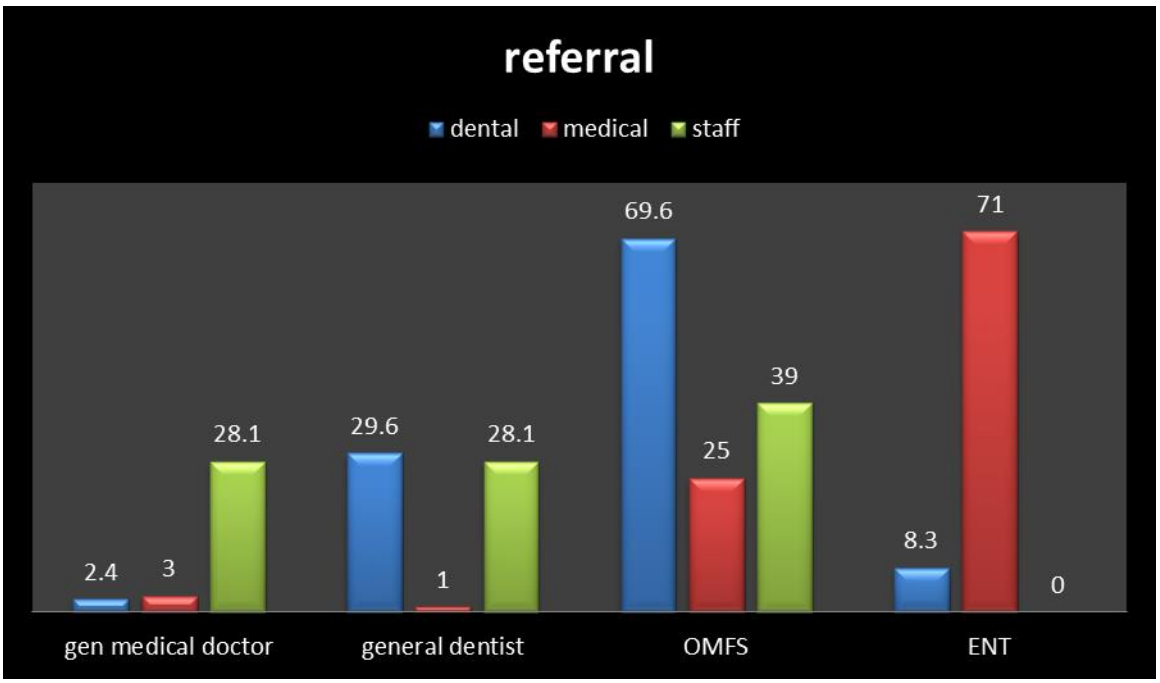

Figure 5: Percentage of Dental, Medical students and non teaching staff referring oral cancer to different speciality