ASSESSING KNOWLEDGE OF MEDICAL AND DENTAL PERSONNEL ABOUT ORAL CANCER

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ABSTRACT

The objective of the study was to determine awareness and knowledge of oral cancer among medical and dental personnel of Pakistan.

Study was conducted in Combined Military Hospital (CMH) Lahore Medical College. In this cross-sectional study 600 self administered questionnaires comprising of 24 questions on risk factors of oral cancer, screening of oral cancer, premalignant lesions and precursor tissue changes were distributed. Data were analyzed by SPSS version 21. ANOVA significance level was considered as $p<0.05$.

Large percentage of respondents were able to identify smoking (95.1%), betel quid (82.4%), family history (76.6%) and occupation (77.6%) as risk factors of oral cancer whereas only 59.1% of respondents correctly identified HPV (human papilloma virus) a risk factor of oral cancer with higher awareness among medical personnel as compared to dental personnel ($p$ value<0.05). Only 15.9% of the respondents were aware of indirect mode of transmission of oral cancer (risk factor through sexual contact).

There is a dire need to increase awareness. As medical physicians are most easily accessible by general population in this country, so they should be adequately educated and trained in performing screening examinations to detect oral and pharyngeal cancers in their early stages.

Key Words: Oral squamous cell carcinoma (OSCC), oral cancer awareness, oral cancer and human papilloma virus.

INTRODUCTION

Cancer is the abnormal and uncontrolled proliferation of cells in a tissue or organ. Oral cancer is a serious health issue that has a world-wide occurrence. Oral cancer is ranked as second most common cancer in males and is ascribed to the regional custom of excessive use of smokeless tobacco products such as betel nut with accessaries. The most common histological type of oral cancer is squamous cell carcinoma (OSCC) which attributes to 80-90% of malignant oral neoplasms. Oral cancer has a multifactorial aetiology with contributions of heavy use of alcohol, tobacco both smokeless and smoked form, paan or betel quid nut chewing, infections, genetic factors and ionizing radiations. An inadequate serving of fruits and vegetables is also considered a potential risk factor especially in younger population. In Asians most prevalent site is buccal mucosa while in western population floor of mouth is the most prevalent site. Oral cancer is on rise in a younger population due to putative role of human papilloma virus (HPV).

Mortality rate due to oral cancer is high owing to lack of awareness of the disease among patients and primary health care providers, leading to delayed diagnosis. Its early diagnosis and treatment planning can markedly enhance survival rate of oral cancer. This is only possible if primary health care providers are well aware of risk factors and early signs of premalignant lesions. Knowledge regarding causative factors of oral cancer helps in its prevention and diagnoses.
The rationale of this study was to assess knowledge of physicians and dentists regarding oral cancer as in developing countries like Pakistan, access to dental care is limited; however, there is relatively better access to medical physicians. Therefore, physicians could play a vital role in prevention of oral cancer by efficient identification of high-risk patients and referring them to oral and maxillofacial surgeon.

**METHODOLOGY**

A descriptive cross sectional study was conducted at the Institute of Dentistry, Combined Military Hospital Lahore Medical College. 600 self-administered questionnaires were distributed to the final year students (BDS, MBBS), house officers, dentists and physicians. Ethical approval was obtained from the ethical review board of the institute. Informed consent was obtained from respondents.

Demographics like age, gender, public or private sector of practice, designation, field BDS or MBBS was collected, along with 24 questions on risk factors of oral cancer, screening of oral cancer, premalignant lesions and precursor tissue changes. Other questions were included to assess their opinions on incidence of oral cancer in Pakistan, most prevalent site in oral cavity, and whom to refer the suspected patients.

Data were collected and analyzed by SPSS version 21. ANOVA was applied and level of significance was kept p < 0.05. Key features of questionnaire are given in Table 1.

**RESULTS**

Analysis included 465 respondents, 158 male and 307 female. Age range was from 21-69 years. This study included 77.2% undergraduates and 22.8% graduates (physicians and dentists). Greater numbers of respondents were from dental field (65.8%). Majority did not know (51.4%) that oral cancer is second most common cancer in Pakistan.

Most of the respondents (82.4%) were able to identify betel quid as risk factor. Smoking was identified by 95.1% of respondents as a causative factor. Occupation and family history was identified as etiological factor in oral cancer by 77.6% and 77.6% respectively respondents where as less awareness about role of HPV
Assessing knowledge of medical and dental personnel about oral cancer

Results of this study have revealed important information concerning the awareness of oral cancer among dental and medical professionals. Tobacco (betel quid) and alcohol were reported as etiological factors for oral cancer by majority of dental and medical practitioners, and this is in accordance with the results of British studies.14,17 In the present study, the least reported causative factor for oral cancer were dietary habits. Color changes like white and red patches and ulcerations were reported as signs and symptoms of oral cancer by most participants with lymphadenopathy being the most reported signs of oral cancer. Majority of medical and dental practitioners believed that tongue is the most common site of oral cancer which is in agreement with the results of a Nigerian study.17,18 The prevalence of OSCC in the Asian countries is highly associated with tobacco and alcohol. Smoking tobacco as a risk factor was identified well by both medical and dental students however, significantly more dental students identified this risk factor. Oral cancer awareness was better among dental personnel as compared to medical personnel.14 Workshops and seminars should be con-

<table>
<thead>
<tr>
<th>Case Scenario For Suspicious Oral Lesion</th>
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<tbody>
<tr>
<td>Age: 41</td>
</tr>
<tr>
<td>Alcohol consumption: No</td>
</tr>
<tr>
<td>Chief complaint: Lesion on left side of tongue for 3 months duration. However it was diagnosed as traumatic lesion by physician.</td>
</tr>
<tr>
<td>Oral squamous cell carcinoma (OSCC) is the 2nd most common oral malignancy in Pakistan. Yes / no / not sure</td>
</tr>
<tr>
<td>Oral squamous cell carcinoma (OSCC) is associated with betel quid (tobacco) chewing. Yes / no / not sure</td>
</tr>
<tr>
<td>Leukoplakia and erythroplakia have malignant potential for oral cancer production. Yes / no / not sure</td>
</tr>
<tr>
<td>Biopsy is the primary tool in diagnosing oral cancer. Yes / no / not sure</td>
</tr>
<tr>
<td>Oral cancer may be transmitted through sexual contact. Yes / no / not sure</td>
</tr>
<tr>
<td>Daily intake of recommended servings of fruits and vegetables may reduce the risk of oral cancer. Yes / no / not sure</td>
</tr>
<tr>
<td>Annual oral cancer screening examinations performed by a dental hygienist are critical to the early discovery of oral cancer. Yes / no / not sure</td>
</tr>
<tr>
<td>Presence of non-healing ulcer for more than 2 weeks relevant / not relevant / do not know</td>
</tr>
<tr>
<td>Spouse diagnosed with Human papilloma virus (HPV) infection relevant / not relevant / do not know</td>
</tr>
<tr>
<td>Involvement of lymph gland relevant / not relevant / do not know</td>
</tr>
<tr>
<td>Smoking history. relevant / not relevant / do not know</td>
</tr>
<tr>
<td>Family history of cancer. relevant / not relevant / do not know</td>
</tr>
<tr>
<td>Occupation of a person relevant / not relevant / do not know</td>
</tr>
</tbody>
</table>

(59.1%) in oral cancer development was observed with more awareness in medical respondents as compared to dental respondents with p value<0.05. Only 16.6% respondents were aware about its increased occurrence in younger population who do not smoke or drink alcohol. 15.9% of the respondents were aware of indirect mode of transmission of oral cancer risk factor through sexual contact.

Respondents reported lack of adequate training (44.3%) as most common barrier in oral cancer screening followed by lack of interest (24.7%), Shortage of specialist to whom you could refer patient and lack of time (6.2%).

Majority of respondents (57.8%) correctly identified lateral surface of tongue as most prevalent site.18.3% and 16.3% respectively, selected floor of mouth and buccal mucosa to be most prominent site for cancer occurrence. Only few respondents (7.7%) identified lip as highest prevalent site.

DISCUSSION

Oral cancer is a serious health issue ranked as second most common cancer in Pakistan in males.2,4 Results of this study have revealed important information concerning the awareness of oral cancer among dental and medical professionals. Tobacco (betel quid) and alcohol were reported as etiological factors for oral cancer by majority of dental and medical practitioners, and this is in accordance with the results of British studies.14,17 In the present study, the least reported causative factor for oral cancer were dietary habits. Color changes like white and red patches and ulcerations were reported as signs and symptoms of oral cancer by most participants with lymphadenopathy being the most reported signs of oral cancer. Majority of medical and dental practitioners believed that tongue is the most common site of oral cancer which is in agreement with the results of a Nigerian study.17,18 The prevalence of OSCC in the Asian countries is highly associated with tobacco and alcohol. Smoking tobacco as a risk factor was identified well by both medical and dental students however, significantly more dental students identified this risk factor. Oral cancer awareness was better among dental personnel as compared to medical personnel.14 Workshops and seminars should be con-
ducted after every 6 months to educate medical and dental personnel about risk factors of oral cancer and screening protocols.

Risk factors like lack of fruits and vegetables have been investigated in previous studies which demonstrate to have a positive influence in preventing oral cancer.\(^8\) Vegetables and fruits may exert their influence through antioxidant effect of various nutrients as Vitamins A, C, E, iron, folic acid. Increased intake of Vitamin C, Vitamin A and β-carotene is associated with a reduced risk of oral cancer.\(^9,19\) Alcohol is a major risk factor associated in developing OSCC.\(^20\) Majority of dental practitioners were unaware of role of Human Papilloma Virus (HPV) in developing oral cancer, however increased awareness was seen in medical practitioners. Awareness about role of HPV was almost same in students and faculty. HPV-16 is the most common type associated with OSCCs and oral premalignant lesions.\(^20\) HPV-18 is involved in only 14% of the cases of oral cancer while HPV 16 is involved in developing oral cancer in 50% of the cases.\(^21\) Trends observed for HPV-associated oropharyngeal cancers were similar between males and females.\(^22\) HPV infects the epithelial cells of skin and mucosa. Most susceptible sites are mouth, throat, tongue, tonsils, vagina, cervix, uvula, penis (the urethra - the opening), and anus. Virus can be transmitted when the following areas come into contact with a virus. While it is established now that, both conventional and oral means of sexual contact can transfer the virus.\(^12,22\)

Dental students identified more risk factors than medical students. Despite the malignant potential of these lesions, erythroplakia was not frequently identified by medical students. Increased number of dental students identified erythroplakia and leukoplakia as oral changes. Most of the participants agreed on referring a patient with non-healing ulcer to an oral and maxillofacial surgeon, these results were in accordance with a study published in 2007 by M Carter and R Ogden.\(^14\) 27% of respondents would refer to an oncologist. Definitive diagnosis can be delayed if not timely referred to oral and maxillofacial surgeon who is competent enough to screen for oral cancer. Lack of adequate training was considered the most important barrier in oral cancer screening by the participants of our research.

There were some limitations in this study. Oral cancer displays a regional variance in site prediction. In present study we did not mention the most susceptible site according to regions. Participants on the medical side were not categorized during data collection according to their designations. Stratification in categories is not done. Multiple categories create bias in their level of knowledge as the level of knowledge among undergraduates/physicians and dentists must be different.

**CONCLUSION**

According to the results of this study, large number of health care providers were well aware of the risk factors associated with oral cancer. There is a dire need to increase public awareness against the aggressive role played by tobacco, areca nuts, and other substitutes which are very commonly use in south Asian region. As medical physicians are most easily accessible by general population in this country and they more often see a patient with high risk of oral cancer, so they should be adequately educated and trained in performing screening examinations to detect oral and pharyngeal cancers in their early stages as the prognosis of the oral cancer is grave when diagnosed later a advanced stage.

**REFERENCES**

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Final approval of version to be published