

# AWARENESS OF ORAL CANCER IN UNDERGRADUATE MEDICAL AND DENTAL STUDENTS

<sup>1</sup>SARA REHMAN, BDS (PESH)

<sup>2</sup>MUSLIM KHAN, BDS (LUMHS) FCPS (OMFS)

## ABSTRACT

*Cancer is the most common cause of death in economically developed countries and the second most lethal entity in developing countries. Oral cancer is a serious health issue that has a universal occurrence. The aim of this study was to determine the awareness level of undergraduate medical and dental students regarding oral cancer by assessing their knowledge of etiology, risk factors and signs of oral cancer.*

*A self-administered questionnaire comprising of 12 questions was distributed amongst a random sample of 50 students each from Khyber Medical College and Khyber College of Dentistry, Peshawar. The study was conducted during December 2011 academic year. The data was compiled and analyzed using SPSS version 17. Our study showed that dental students were more likely to identify tobacco and alcohol use as the main risk factors for oral cancer. When asked about the signs of oral cancer, a greater number of medical students than dental students were able to name leukoplakia and erythroplakia. With regards to treatment modalities of oral cancer, 96% of the dental students while 56% of medical students listed surgery, radiotherapy and chemotherapy.*

*The present study shows better knowledge and awareness of oral cancer amongst final year BDS students as compared to final year MBBS students. A poor level of awareness in the next generation of general medical practitioners thus highlights the need for improving the education of undergraduate medical and dental students regarding oral cancer.*

**Key Words:** Oral cancer awareness, among medical, dental students.

## INTRODUCTION

Cancer is the top cause of death in economically developed countries and the second most lethal entity in developing countries.<sup>1</sup> The burden of cancer is continuously on the rise globally in part due to the growth of world population, an increasing adoption to habits such as smoking, betel quid chewing and alcohol abuse.<sup>2</sup> Oral cancers is a serious health issue that has a universal occurrence.<sup>3</sup> A significant proportion over (90%) of malignant neoplasms of the oral cavity are attributed to oral squamous cell carcinoma.<sup>4</sup>

It has been reported in some studies<sup>5,6,7</sup> that there exists a general lack of public awareness about oral cancer; which is the most important factor in the delay

of referral and treatment of oral cancer affecting its morbidity and mortality.<sup>8,9,10</sup> Since early diagnosis is the most significant factor influencing prognosis of oral cancer<sup>4</sup> hence timely diagnosis and immediate referral plays an important role in its prevention<sup>10</sup>. Simple diagnostic tools include health history, specifically identifying the risk factors and examination of oral mucosa with vigilance for suspicious lesions.<sup>11</sup>

It has been reported that there exists an increased need for undergraduate dental students to be educated and trained in the identification of signs and symptoms of oral malignancy and pre-malignancy as well as early management of patients with suspicious oral lesions<sup>12</sup>. Prevention is hence possible in many cases by spreading awareness.<sup>11</sup>

1. House surgeon, Khyber College of Dentistry, Peshawar Email: sara\_rehman35@hotmail.com Res: 98, G-1 St. 9. Phase 2 Hayat abad Peshawar

2. Associate Professor, Oral and Maxillofacial Surgery

The aim of this study was to determine the level of awareness of oral cancer by assessing the knowledge of undergraduate dental and medical students relating to the etiology, risk factors and signs of oral cancer.

## METHODOLOGY

The oral cancer awareness and knowledge of medical and dental students was assessed by means of a questionnaire. A validated questionnaire comprising of twelve questions was designed which was inclusive of both open and close ended questions relating to risk factors, etiology, clinical appearance and treatment of oral cancer. The survey was conducted on the undergraduate medical and dental students of Khyber College of Dentistry and Khyber Medical College, Peshawar. A total of 100 questionnaires were distributed among the students of final year BDS and MBBS during routine lectures, where a random sample size of fifty students from both final year BDS and MBBS were given the opportunity to participate in this study. The students selected had received teaching on oral diseases including oral cancer.

The actual study was conducted during December 2011 academic year. Of the 100 questionnaires distributed, 50 from MBBS final year and 48 from BDS final year were successfully completed and returned. Questionnaires of the MBBS and BDS students were ana-

lyzed separately to evaluate the level of awareness of BDS and MBBS final year students.

The data was compiled and analyzed using SPSS version 17.

## RESULTS

Out of a total of 100 questionnaires, 97 were returned back. The results of our study showed that a significant number of medical (84%) and dental students (83%) thought that oral squamous cell carcinoma is the most common oral malignancy. Dental students were considerably more likely to list tobacco (betel quid chewing) and alcohol use as the main risk factors for oral cancer compared to medical students. An alarming 30% of medical students could not correlate oral cancer with betel quid chewing. Moreover; when asked about the signs of oral cancer, a greater number of medical students than dental students were able to identify leukoplakia and erythroplakia; whereas, 76% of medical students were uncertain whether speckled leukoplakia had a significantly higher rate of malignant potential over homogenous lesions. When asked that leukoplakia and erythroplakia did not have malignant potential for oral cancer, 79% of dental students were certain this statement was false whereas 30% of medical students believed it to be true. Most of them agreed that biopsy was a primary diagnostic tool for oral cancer. (Table 1)

TABLE 1: QUESTIONNAIRE

Questions	MBBS%			BDS%		
	Yes	No	Not Sure	Yes	No	Not Sure
Oral SCC is the most common oral malignancy	94	0	16	83	8	9
Tobacco and alcohol use are considered the main risk factors for oral cancer	58	0	42	86	5	9
Oral SCC is not associated with betel quid (tobacco) chewing	30	32	38	4	79	6
Leukoplakia and erythroplakia donot have malignant potential for oral cancer production	30	36	34	11	89	10
Speckled leukoplakia have a significantly higher rate of malignant potential than homogenous lesions	22	2	76	83	0	17
Early signs of oral cancer include white patches (leukoplakia) and red patches (erythroplakia)	86	2	12	70	9	21
Biopsy is the primary tool in diagnosing oral cancer	76	0	24	67	13	20

Lateral surface of tongue was stated by 26% of the BDS students, while 34% of MBBS students answered the floor of mouth to be the highest risk site for oral cancer. (Figure 1) In response to identifying the pri-

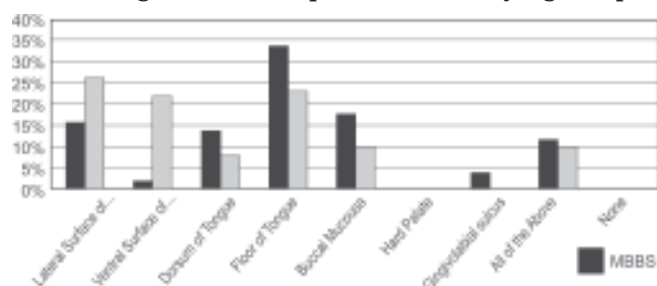


Fig 1: High risk sites of oral Squamous Cell Carcinoma

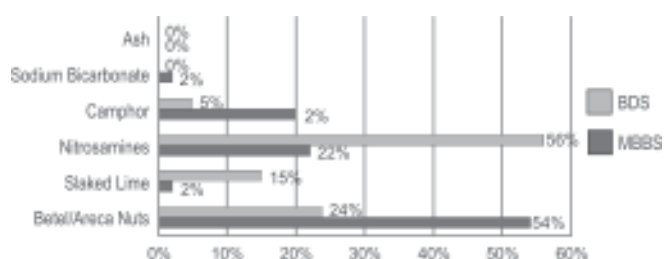


Fig 2: Primary carcinogens of oral Squamous Cell Carcinoma

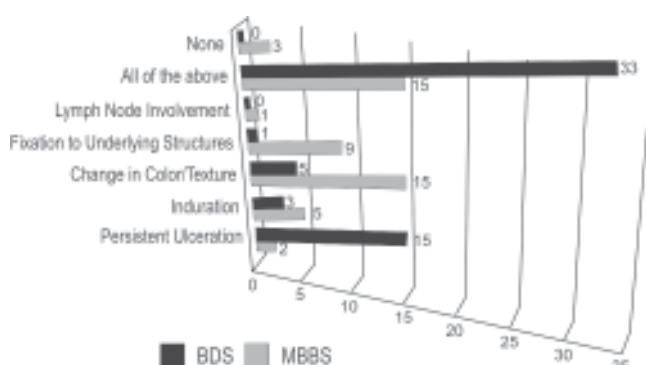


Fig 3: Oral changes are associated with Oral squamous cell carcinoma

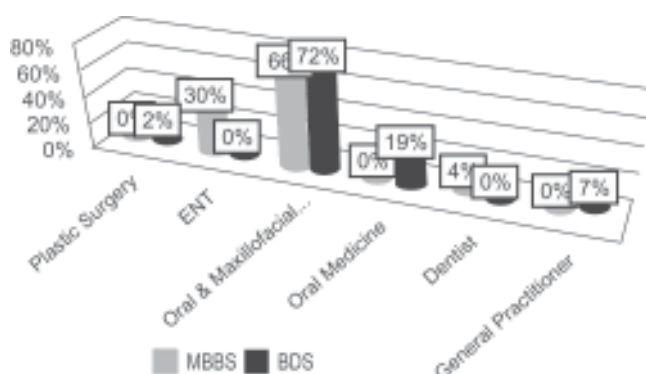


Fig 4: Referral of patients with oral Squamous Cell Carcinoma

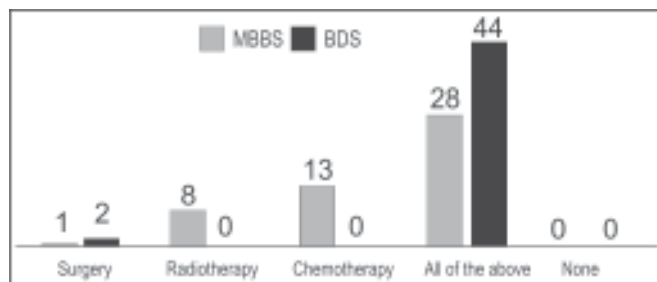


Fig 5: Treatment modalities for oral Squamous Cell Carcinoma

mary carcinogen of smokeless tobacco, 56% of dental students answered nitrosamines whereas 54% of medical students pointed out betel/areca nut. (Figure2) 58% of BDS students were aware of the different oral changes associated with oral squamous cell carcinoma however, 41% of MBBS students correlated persistent ulceration with oral cancer. (Figure3)

Majority of medical and dental students opted for Oral and Maxillofacial Surgery department for referral of a patient with oral cancer. However 19% of dental students and 30% of medical students named Oral Medicine and ENT respectively. (Figure 4) With regards to treatment modalities of oral cancer, 96% of the dental students while 56% of medical students listed surgery, radiotherapy and chemotherapy. (Figure 5)

## DISCUSSION

Oral cancer is a lethal disease that has progressively become global menace. Oral cancer is a common problem in the region. It is the third most common cancer after bronchogenic carcinoma in males and breast carcinoma in females<sup>12</sup>.

The results of our study showed that a significant number of medical and dentals students were aware that oral squamous cell carcinoma is the most common oral malignancy, these results were similar to the study of by Jaber MA et al<sup>13</sup> where squamous cell carcinoma was the most frequently observed oral tumor among Spanish dental students. However; another study conducted among dentists in Italy, one third of them indicated the most common form of oral cancer.<sup>14</sup> The reason of better results could be due to the fact that our study population was 100 students whereas the study conducted in Italy was carried out amongst 1000 dentists which is comparatively a larger sample size.

In the present survey, dental students were more likely to identify tobacco and alcohol as main risk factors for oral cancer than medical students These

findings are consistent with reports from Iran<sup>15</sup>, Spain<sup>13</sup>, UK<sup>10</sup>, and in a study among doctors and dentists from North East of England.<sup>16</sup> The reason for this could be that dental students are more well informed about oral cancer.

When asked about the high risk sites for oral cancer, 26% of the BDS students stated lateral surface of tongue while 34% of MBBS students answered the floor of mouth. In comparison the study conducted among doctors and dentist of North East of England showed that dentists preferred examining tooth or denture bearing tissues in the mouth rather than high risk sites<sup>16</sup>. There are geographical variations in the sites that are at high risk for oral cancer which reflects different etiological factors. In the UK, the tongue and floor of the mouth are high risk sites for oral cancer whereas in India the buccal mucosa is the most common site in relation to chewing of betel quid or pan<sup>4</sup>. But in this part of the world, the mandibular gingivolabial sulcus and alveolus is the most common site because of the habitual use of smokeless tobacco in the form of Niswar.<sup>17</sup>

When asked about the signs of oral cancer, greater number of medical students were able to identify leukoplakia and erythroplakia; however, the results are contradictory to a study by Carter LM et al where more number of dental students identified these oral changes.<sup>10</sup> This could be due to the fact that dental students had better knowledge of oral cancer as well as having the opportunity to routinely examine the oral mucosa of dental patients. A similar study was carried out among the doctors and dentists of North East England<sup>16</sup> which also showed that general dental practitioners (GDP's) had better knowledge than general medical practitioners (GMP's) of the signs and clinical appearance of oral cancer.

A study by Carter LM et al<sup>10</sup> showed similar results when it came to patient referral for oral cancer, the specialty of Oral and maxillofacial Surgery was most commonly chosen by majority of the medical and dental students. The word 'oral' in the options could have led the respondent to believe that this was the correct option. Our results were in accordance with that of a study on GDP's and GMP's in England; where 19% of GDP's chose Oral medicine as the place of referral for patients and most of them named Oral and Maxillofacial Surgery department.<sup>16</sup> Most of the dental students and 56% of medical students had listed Surgery, chemotherapy and radiotherapy as the possible treatment for oral cancer. These results were inconsistent with that of a study by Greenwood M<sup>16</sup> in which chemotherapy was named by 60.8% of General Dental Practitioners and 32.5% of General Medical Practitioners.

## CONCLUSION

From the present study it was concluded that the undergraduate dental students were more aware about oral cancer than the medical students. As the prognosis of this grave disease is stage dependent and most of the patients report in advanced stages due to patient or professional delay; therefore, it is hoped that in the future this professional delay will be avoided because the undergraduates of today are the General dental or medical Practitioners of tomorrow.

## Acknowledgement

We are very thankful to the final Professional BDS and MBBS students of Khyber College of Dentistry and Khyber Medical College in general, and Hana Rehman and Omer Farooq Rehman in particular for their co-operation and help in the completion of this study.

## REFERENCES

- 1 Health Organization. The Global Burden of Disease: 2004 Update. Geneva: World Health Organization; 2008.
- 2 Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global Cancer Statistics CA.Cancer J.CLIN 2011; 61(2): 69-90.
- 3 Moore SR, Johnson NW, Pierce AM, Wilson DF. The Epidemiology of Mouth Cancer: A Review of Global Incidence. *Oral Dis* 2000; 6: 65-74.
- 4 Soames JV, Southam JC. Oral Epithelial tumours; Oral pathology (4<sup>th</sup> edition) Oxford University Press 2005: 135-49.
- 5 Mehboob B, Khan E, Khan M. Awareness about oral cancer among non-medical university students of Peshawar. *Pakistan Oral and Dental Journal* 2011; 31: 392-95.
- 6 Ali TS, Baig S. Evaluation of a cancer awareness campaign: experience with a selected population in Karachi. *Asian Pac J Can Pre* 2006; 7(3): 391-95.
- 7 Bhurgri H, Gowani SA, Itrat A et al. Awareness of cancer risk factors among patients and attendants presenting to a tertiary care hospital in Karachi, Pakistan. *J Pak Med Assoc.* 2008; 58(10): 584-8.
- 8 McLeod NMH, Saeed NR, Ali EA: Oral Cancer: Delays in Referral and Diagnosis Persist. *BR Dental J* 2005; 198: 681-84.
- 9 Hollows P, McAndrews PG, Perini MG. Delays in the Referral and Treatment of Oral Squamous Cell Carcinoma. *Br Dent J* 2000; 188: 262-65.
- 10 Carter LM, Ogden GR. Oral cancer awareness of undergraduate medical and dental students. *BMC Med Edu.* 2007; 7:44.
- 11 Shah I, Rehman P, Ibrahim MW et al. Oral cancer-are the dentists doing enough for its prevention and early diagnosis? - A study. *PODJ* 2010; 30(1): 72-74.
- 12 Khan M, Salam A, Din Q U. Niswar as a risk factor in the aetiology of oral cancer. *J Pak Dent Assoc Apr - Jun* 2007; 16(2): 77-81.
- 13 Jaber MA, Diz Dios P, Vazquez Garcia E et al. Spanish dental students' knowledge of oral malignancy and premalignancy. *Eur J Dent Edu* 1997 Nov; 1(4): 167-71.
- 14 Colella G, Gaeta GM, Moscariello A, Angelillo I F. Oral cancer and dentists: Knowledge, attitudes, and practices in Italy. *Oral Oncology* April 2008 44(4): 393-99.
- 15 Ogden GR, Mahboobi N. oral cancer awareness among undergraduate medical and dental students in Iran. *Journal of cancer education* 2011; 26(2): 380-85.
- 16 Greenwood M, Lowry RJ. Oral cancer: primary care Clinician's knowledge of oral cancer: a study of dentists and doctors in North East of England. *BDJ* 2001; 191: 510-512.
- 17 Khan M, Mansoor N, Memon MR, Salam A. Patterns of Oral Squamous Cell Carcinoma- A Study. *PODJ*; 27(2): 277-82.