

## Oral Cancer Awareness of People Attending the Oral Medicine Center of Zahedan Dental School

<sup>1</sup>Masoumah Shirzaiy, <sup>2</sup>Zohreh Dalirsani, <sup>2</sup>Atessa Pakfetrat

<sup>1</sup> Assistant Professor of Oral Medicine, Department of Oral Medicine of Zahedan Dental School, Zahedan, Iran.

<sup>2</sup> Assistant Professor of Oral Medicine, Oral and Maxillofacial Diseases Research Center, Mashhad University of Medical Sciences, Department of Oral Medicine of Mashhad School of Dentistry, Mashhad, Iran.

<sup>3</sup> Associate Professor of Oral Medicine, Dental Research Center, Mashhad University of Medical Sciences, Department of Oral Medicine of Mashhad School of Dentistry, Mashhad, Iran.

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**Abstract:** Despite persistent attention to early detection and treatment, cancer remains important public health problem and cause of death. Squamous cell carcinoma(SCC) is the most common malignant neoplasm of the oral cavity. Oral SCC is a important public health threat over the world. We studied to access awareness about oral cancer among patients attending for dental treatment at dental school. We studied in a cross sectional - descriptive survey 200 persons attending to oral medicine center of Zahedan dental school. The questionnaire consisted of 14 questions about demographic information and signs and symptoms, risk factors of oral cancer. Finally, the achieved information analyzed by SPSS 13 software and statistic test of chi square. Patient's knowledge level about oral cancer were as follow: Among the people, %37 of patients had poor knowledge, %57.5 moderate knowledge and %5.5 good knowledge about oral cancer. The relation between the studied patient's knowledge with educational level was significant ( $P<0.05$ ). Gender, age, occupation and source of information did not have significant relation with patient's oral cancer knowledge ( $P>0.05$ ). Majority of the respondents had moderate level of knowledge about oral cancer. There was a significant relationship between educational level and oral cancer knowledge.

**Key words:** Oral cancer, knowledge, signs, symptom, risk factor

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### INTRODUCTION

Oral cancer is a common malignancy and a serious health problem worldwide. Squamous cell carcinoma (SCC) is a malignant neoplasm of epithelium; most frequency occurring in the mouth (Al-Sharif *et al*, 2009). SCC, representing 90-95% of oral malignancies (La Vecchia *et al*, 1997). The survival of patients is very poor (Gemenetzidis *et al*, 2009).

Despite all efforts and therapeutic developments, the 5 years survival rates for head and neck cancers has not remarkably improvement over the last 2 decades (Carvalho *et al*, 2003).

In spite of persistent attention to early detection and presentation, cancer is an important public health problem and cause of death.

Oral cancer survival rates is related to different factors such as stage of disease and tumor size.

Early detection and treatment of precancerous lesion and diagnosis of oral cancer at localized stages increase a patient's chances of survival.

Lack of awareness of the signs and symptoms of oral cancer leads to late diagnosis of the disease consequently leads to poor survival of the patients.

Early detection is dependent to population awareness of this disease and ability to recognize early signs, particularly among high risk groups.

Some studies about oral cancer knowledge were done in different countries.

Among them, some studies revealed that people were aware regarding the presence of the oral cancer (Saini *et al*, 2006, Ariyawardana *et al*, 2005) and in other studies people never heard of oral cancer (Patton *et al*, 2004).

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**Corresponding Author:** Dr. Zohreh Dalirsani, Department of Oral Medicine, Mashhad Dental School, Vakilabad Blvd, Postal code: 91735, Mashhad, Iran.  
Tel: +989155002857 Fax: +985118829500  
Email: zdalirsani@gmail.com

Some researchers showed that level of knowledge about risk factors and signs and symptoms of oral cancers was low (Horowitz *et al*, 1998) and another study done by West *et al* in 2006 defined that awareness was lower in people who their behaviors were at higher risk and detected the importance of increasing public awareness (West *et al*, 2006).

There is a clear need to inform and educate the public in matters relating to the known risk factors associated with oral cancer. A media campaign informing the public about oral cancer is clearly required. The need for the reduction in the incidence of oral cancer should be included in population health programs. An overall health promotion strategy to reduce cancers should include oral cancer as a priority.

Since oral cancer is related to lifestyle factors, such as tobacco and alcohol abuse, these behaviors need to be changed by effective education and primary prevention programs (Room *et al*, 2005).

In addition, increasing in awareness leads to improve prevention, early diagnosis and better treatment. Recognition of oral cancer in local strategies for oral health should be encouraged.

A combination of personal knowledge of oral cancer signs and risk factors, personal awareness of oral health status, and professional oral cancer examinations may influence the early detection, and morbidity and mortality of oral cancers.

By now, no study has been done about oral cancer awareness in Iran south east. South east communities in Iran are thought to be a high-risk group for oral cancer, primarily because of high prevalence of drug abuse and habit of snuff using in this region, this study aimed to evaluate population awareness about oral cancer presentations and risk factors.

## **METHODS AND MATERIAL**

A self administrated questionnaire was used to collect information from 200 randomly selected attended to Zahedan Dental School, Zahedan University of Medical Sciences, Iran, in 2009. We also collected socio-demographic information such age, sex, occupation, educational level. The questionnaire consisted of personal questions regarding socio-economical parameters, educational level, awareness of oral cancer and precancerous conditions, symptoms and presentations of oral cancer, oral cancer risk factors including smoking and snuff and alcohol consumption (Pakfetrat *et al*, 2010).

Questions regarding oral cancer knowledge were validated by an expert panel, and pretested on 33 subjects for clarity, and modifications were made according to the responses before the final questionnaire was administered. The deduced data were analyzed using Cronbach's Alpha Test and resulted in 80% reliability.

Each response was assigned scores where "1" mark was given for correct answer and "0.5" mark was given for "No idea" answer and a score of 0 was given when the response was wrong.

A total of 15 questions evaluated patient knowledge, and attitude towards oral cancer. The scores were added up to obtain total individual scores.

So that the final possible score range was 0–22.

Total individual scores under 9 described as "low knowledge level";

Total individual scores between 9.1 -13.5, described as "intermediate knowledge level";

Total individual scores upper 13.6 described as "high knowledge level".

Data were analyzed using the SPSS (Statistical Package for the Social Sciences) program. Bivariate analyses of the association between each of the independent variables and the dichotomous dependent variables such as-an oral cancer examination, knowledge of one sign of oral cancer and risk factors for oral cancer-were carried out and evaluated using a chi-square test.

### **Results:**

The ages of the 200 subjects ranged from 21 to 54 years. Among them, 61.5% were male and 38.5% were female.

The mean age was  $31.76 \pm 8.01$  years old. The mean age of male and female were  $32.2 \pm 8.4$  and  $31.05 \pm 7.32$  years old, respectively.

In this study, 45% of respondents were 20-29; 34.5% were 30-39 years old and 20.5% were older than 40.

The demographic characteristics of the respondents are presented in table 1.

Analysis showed that sex, age, type of job and source of information and oral cancer knowledge score were independent predictors.

Oral cancer awareness differed significantly educational attainment ( $P < 0.001$ ).

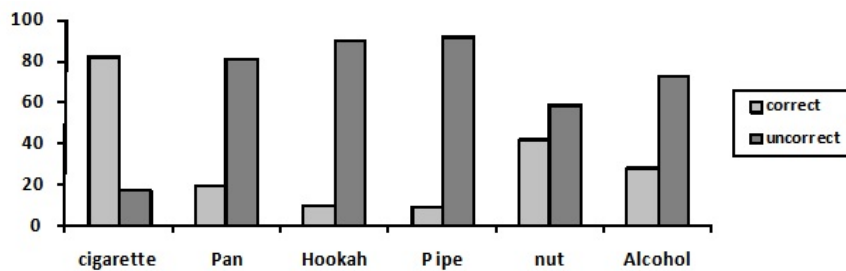
Those with some college education were more likely to have a higher level of knowledge than were those with a high school education or less.

Intermediate level of knowledge was higher in all age groups.

Among the respondents, 169 (84.5% ) knew that oral ulcer could be a sign of oral cancer. 168 (84%) recognized white and red lesions as a sign and 42(21%) defined neck mass as oral cancer sign.

**Table 1:** Demographic characteristics of the respondents.

| Characteristic      | Awareness |         |          |         |        |         | Total |
|---------------------|-----------|---------|----------|---------|--------|---------|-------|
|                     | Low       |         | Moderate |         | High   |         |       |
|                     | Number    | Percent | Number   | Percent | Number | Percent |       |
| <b>Sex</b>          |           |         |          |         |        |         |       |
| Male                | 44        | 35.8    | 72       | 58.5    | 7      | 5.7     | 123   |
| Female              | 30        | 39      | 43       | 55.8    | 4      | 5.2     | 77    |
| total               | 74        | 37      | 115      | 57.5    | 11     | 5.5     | 200   |
| <b>Age</b>          |           |         |          |         |        |         |       |
| 20-30               | 35        | 38.9    | 49       | 54.4    | 6      | 6.7     | 90    |
| 30-40               | 21        | 30.4    | 45       | 35.2    | 3      | 4.3     | 69    |
| 40+                 | 18        | 43.9    | 21       | 51.2    | 2      | 4.9     | 41    |
| total               | 74        | 37      | 115      | 57.5    | 11     | 5.5     | 200   |
| <b>Education</b>    |           |         |          |         |        |         |       |
| Illiterate          | 9         | 81.8    | 2        | 18.2    | -      | -       | 11    |
| Elementary school   | 11        | 45.8    | 13       | 54.2    | -      | -       | 24    |
| Middle school       | 23        | 42.6    | 30       | 55.6    | 1      | 1.9     | 54    |
| High school diploma | 25        | 34.7    | 46       | 63.9    | 1      | 1.4     | 72    |
| Associate diploma   | 3         | 14.3    | 15       | 71.4    | 3      | 14.3    | 21    |
| Bachelor diploma    | 3         | 17.6    | 9        | 52.9    | 5      | 29.4    | 17    |
| Master degree +     | -         | -       | -        | -       | 1      | 100     | 1     |
| total               | 74        | 37      | 115      | 57.5    | 11     | 5.5     | 200   |
| <b>Occupation</b>   |           |         |          |         |        |         |       |
| Self employed       | 26        | 40      | 36       | 55.4    | 3      | 4.6     | 65    |
| Government employee | 10        | 20      | 35       | 70      | 5      | 10      | 50    |
| Health field        | 2         | 25      | 5        | 62.5    | 1      | 12.5    | 8     |
| Laborer             | 5         | 45.5    | 6        | 54.5    | -      | -       | 11    |
| Unemployed          | 31        | 47      | 33       | 50      | 2      | 3       | 66    |
| total               | 74        | 37      | 115      | 57.5    | 11     | 5.5     | 200   |



**Fig. 1:** Respondents' knowledge about oral cancer risk factors.

The average and standard deviation of patients total knowledge level score were 10.06 and 1.92 respectively. The average and standard deviation of total knowledge level score were 10.10± 1.82 for males and 9.98± 2.09 for females.

The large majority of respondents (82.5%) correctly reported that tobacco use increases the risk of oral cancer. Among respondents, 41.5% and 27.5%, respectively, identified snuff and alcohol consumption as a cancer risk factor. Table 2 shows respondents' knowledge about oral cancer risk factors.

The most correct answer was related to question 8 (which specialist do you refer for oral cancer diagnosis?) and the least was related to question 8 (Where are the most likely locations of oral cancer?)

Radio and television were source of information of 31.5% of respondents (Table 2).

**Discussion:**

Findings from this study suggest that awareness of oral cancer is moderate among adult patients, aged 20 years and older, referred to Zahedan Dental School.

Moderate level of knowledge was higher in all age groups. This result was compatible with Patton's study that showed moderate knowledge about oral cancer signs and risk factors among north Carolina adults however, fourteen percent of adults had never heard of oral cancer (Patton *et al*, 2004).

In Horowitz and West Studies, awareness about oral cancer was moderate among respondents. (Horowitz *et al*, 1998; West *et al*, 2006).

Siani did cross-sectional study in which interview of 108 subjects aged 20-65 was conducted. Eighty nine percent of the patients were aware regarding the presence of the oral cancer (Saini *et al*, 2006).

**Table 2:** Information source of respondents about oral cancer.

| Source of information  | awareness |         |          |         |        |         | Total |
|------------------------|-----------|---------|----------|---------|--------|---------|-------|
|                        | Low       |         | Moderate |         | High   |         |       |
|                        | Number    | Percent | Number   | Percent | Number | Percent |       |
| Media                  | 17        | 27      | 44       | 69.8    | 2      | 3.2     | 63    |
| Magazine and newspaper | 12        | 27.3    | 28       | 63.6    | 4      | 9.1     | 44    |
| Physician or dentist   | 13        | 37.1    | 18       | 51.4    | 4      | 11.4    | 35    |
| Others                 | 32        | 55.2    | 25       | 43.1    | 1      | 1.7     | 58    |
| total                  | 74        | 37      | 115      | 57.5    | 11     | 5.5     | 200   |

In Lawoyin study oral cancer awareness was remarkably high, but this was low compared to awareness about occurrence of cancer in other parts of the body. Difference in studies results could be due to different sample size (Lawoyin, *et al*, 2003).

Horowitz's study among Maryland adults defined level of knowledge about risk factors and signs and symptoms of oral cancers was low (Horowitz *et al*, 1998).

Tomar assessed awareness of oral cancer, knowledge of its major risk factors and clinical signs, and oral cancer examination experiences among Florida adults aged 40 years and older. About one-half of adults did not think oral white or red patches or bleeding could be a sign for oral cancer. 27.6% correctly identified three of oral cancer's major risk factors. This study detected lack of awareness and knowledge in Florida regarding oral cancer (Tomar and Logan, 2005).

In present study, oral cancer awareness was closely associated with educational status. Persons with educational level higher than diploma had higher knowledge about oral cancer. In Sani's study, subjects who have had higher education were significantly more aware about the presence of oral cancer compared to those without any schooling (Saini *et al*, 2006). These results are similar with Lawoyin, Tomarresearches (Lawoyin *et al*, 2003; Tomar and Logan, 2005). These studies confirmed that persons with low level of education have lower awareness about oral cancer and lack regular oral examination.

Horowitz showed that only 28 percent of the respondents reported having an oral cancer examination. Respondents were 40-64 years of age, white, and higher educated reported having an oral cancer examination more than lower educated persons (Horowitz *et al*, 1998).

In our study, there was no significant association of age range and gender and awareness. However, in Saini's study, those patients between 20-29 years old had moderate awareness (Saini *et al*, 2006).

In most studies, correlation between sex and awareness has not been assessed.

In present study, 168 (84%) recognized that white and red lesions were a sign. The awareness level about oral cancer signs was high. But, in West study, respondents' awareness of early signs of oral cancer was low as only 33.8% recognized that white patches in the mouth could be a sign (West *et al*, 2006).

Ariyawardana study was done in Sri Lanka revealed that the patients' awareness was high about oral cancer and low about precancerous conditions (Ariyawardana *et al*, 2005).

According to Patton study done among North Carolina adults, awareness about signs of oral cancer was significantly higher in younger people, nonsmokers, and respondents with college education (Patton *et al*, 2004).

In our study, 82.5% of respondents knew cigarette as oral cancer risk factor. In Saini's study(Saini *et al*, 2006) 93.5%, in West's study (West *et al*, 2006) 84.7%, and in Warnakulasuriya's study, 76% of patients defined that cigarette is a risk factor (Warnakulasuriya, *et al*, 1999).

In present study, awareness about correlation of alcohol and oral cancer was 27.5%. Our results showed most of respondents had high level of awareness about cigarette and low level of awareness about alcohol.

Our results were similar to West study in which 80.1% of respondents knew that smoking and chewing are tobacco were risk factors but only 19.4% recognized alcohol use as a risk factor (West *et al*, 2006).

In other studies amount of awareness about alcohol was almost similar to our study (West *et al*, 2006; Warnakulasuriya *et al*, 1999). But knowledge about this risk factor was higher in Saini's study, in which

showed a high awareness about the relationship between smoking, tobacco chewing, betel nut chewing, and alcohol with oral cancer among adult patients attending school of dental sciences, in Malaysia (Saini *et al*, 2006).

Also, in Patton study risk factors knowledge of 56 percent was high (Patton *et al*, 2004).

Warnakulasuriya revealed a lack of knowledge about causation relationship between alcohol consumption and oral cancer (Warnakulasuriya *et al*, 1999).

Also, Lowry showed there is a lack of knowledge about oral cancer risk factors in alcohol drinkers and tobacco smokers (Lowry *et al*, 1999).

In West study about knowledge of early signs and risk factors of oral cancer, revealed that awareness was lower in people who their behaviors were at higher risk (West *et al*, 2006).

In our study, 41.5% of persons knew that snuff is a cancer risk factor. In Johnson's study, despite current usage of nut, there was lack of awareness about its carcinogenicity (Shetty and Johnson, 1999).

Shetty evaluated the attitudes South Asian adults regarding the risk factors and signs of oral cancer and revealed a general lack of awareness about them. Use of snuff was current habit among South Asian adults but awareness about its carcinogenicity was low in this population (Al-Shammari, *et al*, 2006).

But, in Ariyawardana study; 80.7% were knowledgeable about the causal relationship between betel chewing habit and oral cancer. Knowledge about the causal relationships with betel chewing was higher compared to use of alcohol and tobacco smoking (Ariyawardana *et al*, 2005).

Also, Al-Shammari showed that fewer smokers than non smokers thought that smoking affected oral cancer (Al-Shammari *et al*, 2006).

A major information source of our study respondents was media. This result was similar to Lawoyin results that showed 50% of persons take their information about oral cancer from media and 20.1% from specialists (Lawoyin *et al*, 2003).

Different results about oral cancer awareness between present study and previous study could be due to difference in race, age range, educational level, socio-economical level, various habits and different sample size and methods of study.

Briefly, these results confirmed necessarily of more education among persons with high risk habits.

It's recommended that oral health professionals focus educational programs to patients with cancer high risk behaviors. There is a clear need to educate the public about risk factors associated with oral cancer.

The dissemination of information cancer risk factors leads to a reduction of these risk factors usage.

### **Conclusion:**

This study showed moderate level of knowledge about oral cancer in respondents. It demonstrates a need for interventions designed for increasing knowledge level about risk factors, signs and symptoms of oral cancers and the need for oral cancer examinations.

The increasing in information about oral cancer and awareness of the disease, especially among those who have risk factors, may cause early detection and better prognosis.

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