International Journal of Epidemiologic Research
doi:10.15171/ijer.2018.05 2018 Winter;5(1):19-23 http://ijer.skums.ac.ir

Original Article

Knowledge of Adults' Reading Oral Cancer in South-East of Iran

Sara Amanpour[1], Maryam Raoof[2*], Shahla Kakoei[3], Sorena Fardisi[4], Azadeh Iranmanesh[5], Molouk Torabi Parizi[6]

[1]Oral and Dental Diseases Research Centre, Kerman University of Medical Sciences, Kerman, Iran
[2]Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran
[3]Department of Oral Medicine, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran
[4]Department of Oral and Maxillofacial Surgery, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran
[5]Endodontology Research Center, Endodontology Research Center, Kerman University of Medical Sciences, Kerman, Iran
[6]Department of Oral and Maxillofacial Pathology, School of Dentistry, Endodontology Research Center, Kerman University of Medical Sciences, Kerman, Iran

***Corresponding Author:**
Maryam Raoof
Tel: +98 9133416108;
Fax: +98 343 2118073;
Email:
Maryam.raoof@gmail.com

Received: 1 August 2017
Accepted: 9 October 2017
ePublished: 10 November 2017

Abstract

Background and aims: Squamous cell carcinoma is one of the most common cancers in the oral cavity. The aim of this study was to assess the rate of awareness of people referring to medical clinics in Kerman because of the oral cancer and its risk factors from 2015 to 2016.

Methods: This cross-sectional study was conducted on a sample size of 1200 subjects between April and December 2016 in Kerman, Iran. The participants were selected based on stratified sampling from dental clinics of 4 different areas of the city. After filling the informed consent form, they were asked to complete a self-administered questionnaire. The questionnaire included demographic information, awareness of subjects about common characteristics of oral cancer, and predisposing risk factors. To analyze the data, chi-square and analysis of variance (ANOVA) tests were used by means of SPSS 21.0. A value of $P \leq 0.05$ was considered to be significant.

Results: A total of 58.8% of the participants showed intermediate level of knowledge regarding oral cancer. Knowledge about risk factors and symptoms was also at an intermediate level (57.2% and 65% respectively). Knowledge of women was significantly more than that of men ($P=0.02$). moreover, subjects who were married presented more correct answers than single ones ($P=0.01$). Moreover, urban dwellers were found to be more knowledgeable than rural populations ($P=0.03$).

Conclusion: Although the public information on oral cancer is improving compared to a study carried out 7 years ago in Kerman, the level of knowledge is still not satisfactory. Indeed, much more efforts to increase public information by social media is needed.

Keywords: Awareness, Knowledge, Oral cancer, Risk factors, Squamous cell carcinoma

Introduction

Oral cancer is known as the sixth most common cancer in the world. Squamous cell carcinoma (SCC) accounts for approximately 90% of oral cancers and it seems to become a major public health problem worldwide. The most recent estimated world incidence of oral cancer is around 263 861 new cases for the year of 2008.[1] It has been identified that age is an established risk factor for oral cancers, especially in males.[2] The other predisposing risk factors include smoking, alcohol use, tobacco consumption, and human papilloma virus (HPV). Majority of oral cancer cases have been observed to arise from long-standing premalignant lesions especially in high risk areas of oral mucosa.[1] The relative importance of each risk factor varies markedly across different regions.[3] The incidence of this malignancy is also associated with social and economic status.[4] Meanwhile, the use of hookah and other forms of tobacco and alcohol consumption is alarmingly increasing especially among young adults; therefore, it is absolutely necessary to improve the public knowledge on risk factors of oral cancer.

As oral SCCs are mostly asymptomatic and are often preceded by precancerous lesions, a good deal of attention on the part of patients and detection of the lesion in primary stages are required because they will result in early diagnosis and treatment of tumors.[5,6] The sooner the disease is detected, the better prognosis and survival rate will be expected.[7] If an early diagnosis and treatment are implemented, the levels of emotional

stress, social complications, and severe facial deformities that are due to aggressive surgical treatments may be decreased.[4,8]

The purpose of the present study was to evaluate the knowledge of adults on risk factors and symptoms of oral cancer in Kerman, the largest province of Iran.

Methods

Kerman is located 1076 km south of Tehran, capital of Iran and is divided into 4 distinct zones based on municipality divisions. In this study, in each zone the largest medical clinics were selected. A sample of 1200 subjects selected based on Cochran formula participated in this study without time restriction, in the waiting rooms of the dental clinics. Subjects completed their informed consent forms to participate in the study.

The participants were asked to complete a self-administered questionnaire constructed by the research team according to previous similar studies.[4,5,9,10] For illiterate subjects, the interviewer transferred their answers to the questionnaire. This self-administered questionnaire was validated completely (100%) by an expert panel. For reliability of the questionnaire, it was pretested on 30 subjects with different levels of literacy. Modifications were then made according to the responses before the final questionnaire was administered. The deduced data were analyzed using Cronbach α test which resulted in 90% reliability.

The first part of the questionnaire was about demographic data including patient's age, gender, educational level, and rural or urban living areas. The second part included 6 items regarding awareness of subjects about oral cancer as a known type of cancer and its common characteristics. The third section contained 13 items regarding predisposing risk factors and the last part was consisted of 11 items about symptoms of oral SCC. For illiterate individuals, the interviewer completed the questionnaire based on their answers.

The questionnaire included 2 kinds of questions. The first 3 questions of the second part and the questions of third and fourth parts of the questionnaire had "yes", "no", and "do not know" options. The other questions of the second part (questions number 4, 5, and 6) were in multiple-choice question format.

A score of 1 was given for each correct answer, while the wrong and "do not know" items were scored 0. Question number 6 in the first part about the most prevalent sites of oral cancer was not given any score. Therefore, the maximum possible score of knowledge was 29. The final classification was as follows: high level of knowledge (greater than 67% of the total score), intermediate level (34%-66% of the total score) and low level (less than 33% of the total score).

Chi-square and analysis of variance (ANOVA) tests were used by means of SPSS 21.0 (IBM, Chicago, IL, USA) for data analysis. A value of $P \leq 0.05$ was considered to be significant.

Results

Among 1200 participants, 44.4% were males and 55.6% were females. The mean age was 31±13.1 years and 56.9% of the participants were married. Data on demographic characteristics are presented in Table 1.

Furthermore, 58.8% of the participants showed intermediate level of knowledge regarding oral cancer. Knowledge about risk factors and symptoms was also at an intermediate level (57.2% and 65% respectively). About 24% of the subjects remarked that oral cancer is in the list of 10 most common malignancies in the world and 11.8% of them incorrectly thought that this cancer is contagious and 41.1% of the subjects expressed that oral cancer is treatable.

Regarding the most common age for this malignancy occurrence, 19.6% of the participants stated that it is over the age of 45. Moreover, 56.5% of respondents expressed equal distribution in both genders, whereas 30.5% of them selected males.

Gingiva, tongue, and floor of mouth were the most frequent locations for oral cancer selected by the participants (44.9%, 21.3%, and 17.8% respectively).

The most correct answers about predisposing risk factors of oral cancer were smoking (85.9%), alcohol consumption (62.1%), and viral diseases (55.8%). Figure 1 shows the percentages of correct answers for

Table 1. Demographic Data of the Participants

	Number	Percent
Sex		
Male	550	45.8
Female	650	54.2
Maternal status		
Single	557	46.4
Married	643	53.6
Literacy		
Illiterate	68	5.6
Lower than diploma	203	17
Diploma	554	46.2
Academic degree	375	31.2
Lodging		
Rural residents	185	15.4
Urban dwellers	1015	84.6

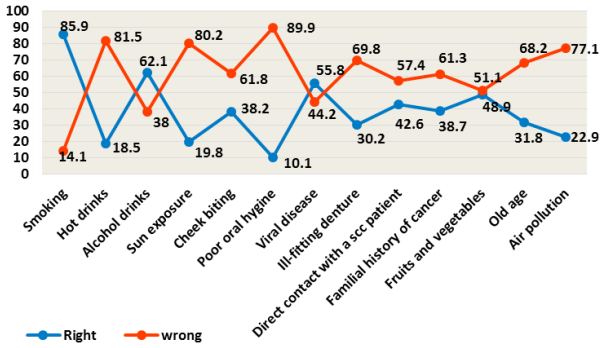

Figure 1. Answers to Questions on Risk Factors of Oral SCC.

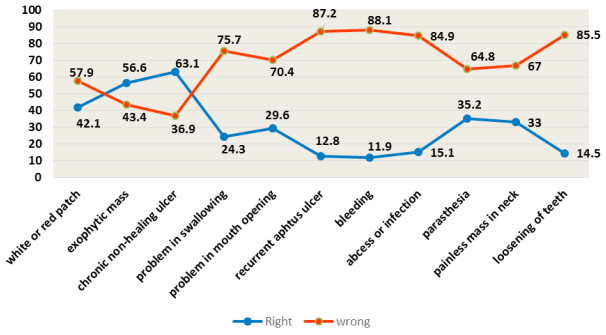

Figure 2. Answers to Questions on Symptoms of Oral SCC.

the knowledge of risk factors of oral cancer. As it has been shown in Figure 2, the most correct answers to the questions about symptoms of oral cancer were related to chronic ulcer (63.1%), exophytic mass in oral cavity (56.6%), and white or red patch (42.1%).

Women's knowledge of oral cancer was significantly more than that of men (P=0.02). There was a significant relationship between maternal status and knowledge on oral cancer. Subjects who were married presented more correct answers than singles (P=0.01). Moreover, urban dwellers were found to be more knowledgeable than rural populations (P=0.03).

Respondents with some college or bachelor or higher degrees had significantly more knowledge on oral cancer than the others (P<0.001).

Discussion

The participants of this study showed intermediate level of knowledge regarding oral cancer. Knowledge about risk factors and symptoms was also at an intermediate level. Among several diseases in the field of dentistry, oral cancer has the potential to cause most morbidity and mortality.[5] It has been reported that if an early diagnosis is achieved, the 5-year survival rate will be 80% for oral cancer, whereas delayed diagnosis results in decreased survival rate to 30%.[4] In this regard, lack of public knowledge about the risk factors and specially the symptoms may be a considerable barrier to early diagnosis of disease.[11]

Kerman is the largest province in Iran, located in south-east with about 3 million inhabitants. There are several medical clinics in the capital of Kerman province, Kerman. We selected the largest medical clinics in 4 different zones of the city to reduce the selection bias and increase the ability to generalize the results beyond the subjects actually studied.

According to the present study, the adults' knowledge score about the risk factors of oral cancer was 7.7 out of total score of 13. The participants scored 6.5 out of 11 regarding the symptoms of the disease while the overall score on the knowledge was 16.4 out of 29.

Inconsistent with some previous studies, which reported a low level of knowledge about oral cancer,[4,5,9,12,13] in the current survey, the respondents' knowledge was moderate. Nevertheless, a low level of knowledge has been suggested by another survey conducted in the same study area, Kerman, in 2009.[10] It seems that the level of knowledge about SCC is increasing in this region. This may be as a result of improving the quality of public health education. Increasing the awareness regarding malignancies may lead to early diagnosis of the cancer. It has been established that prompt intervention in the management of early stage of oral SCC has a fundamental role in achieving the best possible prognosis.[14-16]

We found a significant and positive correlation between the level of knowledge and educational level of participants (P< 0.05). This finding is in line with that of Tadbir et al[4] and Kakoei et al,[10] but such a relation was not observed by Powe and Finnie in American adults.[15] Inconsistent with the findings of Pakfetrat et al,[12] Zareei et al,[16] Motallebinezhad et al,[17] Khalili et al,[18] and Humphris et al,[19] in the present study, females and married subjects were significantly more knowledgeable about oral cancer. Association between the level of knowledge and gender in our study was similar to previous studies.[3,4,13,20,21] The higher level of knowledge in females can be explained by the fact that women tend to be more concerned about their health status, so they try to get more information than men.[22]

The participants in this study, in line with some previous studies,[4,5,9-11,13] have indicated that smoking and alcohol consumption are the most etiologic risk factors for oral cancers. Despite being knowledgeable on the risks, there is an alarming prevalence of hookah tobacco smoking in Iran.[23,24] Health educational programs are proposed to bridge the gap between knowledge about high-risk habits and the modification of these habits.[9] Preventive measures encompassing all forms of tobacco smoking should be designed, supported, and conducted by various organizations including government institutions. Dental professionals can also play a critical role not only in educating their patients about oral cancer but also in

changing their behavior.

On the other hand, in the study by Pakfetrat et al, only 15.9% of the participants believed that smoking is a main risk factor for oral cancer and even less (6.6%) stated that alcohol drinking can increase the risk of developing oral cancer.[12] In the reports by Al-Maweri et al,[9] Tadbir et al,[4] Kakoei et al,[10] only a small population of the participants considered as old age and excessive sun exposure to the lips was predisposing risk factors for cancer.

Within the present study, chronic ulcer (63.1%), exophytic mass (56.6 %), and red or white patch (42.1%) were identified as initial signs of oral cancer. Monterio et al,[1] and Al-Maweri et al,[9] also found that a non-healing chronic ulcer and oral lumps were the most selected signs of oral cancer by the participants. However, in that study almost half of the participants did not know that white or red patch can be an initial sign of oral cancer.[1,9] In the Tadbir et al study, chronic ulcer and red and white patch were the most well-known early signs of oral cancer,[4] whereas Kakoei et al reported that oral lumps, paresthesia, and red or white patch were selected by the participants as common signs of oral cancer.[10] Half of the participants in the Tomar and Logan study identified red and white patch as an oral cancer sign.[25] Notably, Pakfetrat et al found that 90% of their population study had not any information about signs of oral cancer. In his study, only 0.9% of the respondents knew that red or white patch is a clinical presentation of oral cancer.[12]

Although based on the findings of the current study, the public information on oral cancer is improving compared to a study carried out 7 years ago in Kerman, the level of knowledge is not still satisfactory. The development of continuing educational programs in public media, in addition to fact sheets, posters, or leaflets can improve the public knowledge about risk factors and early signs of oral cancer.

Conclusion

Although based on the findings of the current study, the public information on oral cancer is improving compared to a study carried out 7 years ago in Kerman, the level of knowledge is not still satisfactory and needs to be increased by more structured teaching programs such as radio and TV advertisements, posters, and booklets about the early signs and symptoms of oral cancer and also the importance of regular oral examination in order to diagnose such lesions in early stages.

Limitations of the Study

Because of the cross-sectional design of the study, the participants are unlikely representative of the whole population of the society as they were recruited from some limited number of medical clinics. Therefore, as far as the participation is taken into account, the interpretation of the results should be with caution.

Ethical Approval

This cross-sectional study was approved by the research ethics committee of Kerman University of Medical Sciences (code: K/93/637).

Conflict of Interest Disclosures

None.

Funding/Support

The vice-chancellor of Research of Kerman University of Medical Sciences (grant No. 930486).

Acknowledgments

We are grateful to Dr. Maryam Rad for her kind corporation. Also, the authors would like to thank the vice-chancellor of Research of Kerman University of Medical Sciences for providing financial support for this study.

References

1. Monteiro LS, Salazar F, Pacheco J, Warnakulasuriya S. Oral cancer awareness and knowledge in the city of valongo, portugal. Int J Dent. 2012;2012:376838. doi: 10.1155/2012/376838.
2. Al-Maweri SA, Addas A, Tarakji B, Abbas A, Al-Shamiri HM, Alaizari NA, et al. Public awareness and knowledge of oral cancer in Yemen. Asian Pac J Cancer Prev. 2014;15(24):10861-5.
3. Gomez I, Warnakulasuriya S, Varela-Centelles PI, Lopez-Jornet P, Suarez-Cunqueiro M, Diz-Dios P, et al. Is early diagnosis of oral cancer a feasible objective? Who is to blame for diagnostic delay? Oral Dis. 2010;16(4):333-42. doi: 10.1111/j.1601-0825.2009.01642.x.
4. Tadbir AA, Ebrahimi H, Pourshahidi S, Zeraatkar M. Evaluation of levels of knowledge about etiology and symptoms of oral cancer in southern Iran. Asian Pac J Cancer Prev. 2013;14(4):2217-20.
5. Ashe TE, Elter JR, Southerland JH, Strauss RP, Patton LL. North Carolina dental hygienists' assessment of patients' tobacco and alcohol use. J Dent Hyg. 2005;79(2):9.
6. Delilbasi C, Akman H, Redzep E, Akal UK. Prevalance of oral precancerous lesions in a selected Turkish population. Turk J Med Sci. 2003;33:39-42.
7. Ganly I, Patel S, Shah J. Early stage squamous cell cancer of the oral tongue--clinicopathologic features affecting outcome. Cancer. 2012;118(1):101-11. doi: 10.1002/cncr.26229.
8. Ghani WM, Doss JG, Jamaluddin M, Kamaruzaman D, Zain RB. Oral cancer awareness and its determinants among a selected Malaysian population. Asian Pac J Cancer Prev. 2013;14(3):1957-63.
9. Al-Maweri SA, Al-Soneidar WA, Dhaifullah E, Halboub ES, Tarakji B. Oral Cancer: Awareness and Knowledge Among Dental Patients in Riyadh. J Cancer Educ. 2017;32(2):308-13. doi: 10.1007/s13187-015-0924-y.
10. Kakoei S, Rad M, Mahmoudvand N, Mohammadalizadeh S. A survey of the Kerman adults' knowledge about the signs and risk factor of oral carcinoma. Shiraz Univ Dent J. 2009;10(3):234-240.
11. Howaldt HP, Kainz M, Euler B, Vorast H. Proposal for

modification of the TNM staging classification for cancer of the oral cavity. DOSAK. J Craniomaxillofac Surg. 1999;27(5):275-88.
12. Pakfetrat A, Falaki F, Esmaily HO, Shabestari S. Oral cancer knowledge among patients referred to Mashhad Dental School, Iran. Arch Iran Med. 2010;13(6):543-8. doi: 010136/aim.0016.
13. Ho MW, Field EA, Field JK, Risk JM, Rajlawat BP, Rogers SN, et al. Outcomes of oral squamous cell carcinoma arising from oral epithelial dysplasia: rationale for monitoring premalignant oral lesions in a multidisciplinary clinic. Br J Oral Maxillofac Surg. 2013;51(7):594-9. doi: 10.1016/j.bjoms.2013.03.014.
14. Mısırlıoglu M, Nalcacı R, Yardımcı SY, Adisen MZ. Oral cancer knowledge among Turkish dental patients. Clin Cancer Investig J. 2013;2(2):149-52. doi: 10.4103/2278-0513.113639.
15. Powe BD, Finnie R. Knowledge of oral cancer risk factors among african americans: do nurses have a role? Oncol Nurs Forum. 2004;31(4):785-91. doi: 10.1188/04.onf.785-791.
16. Zareei M, Asadpoor F. Evaluation of knowledge and diagnose experience among dentists, Kerman, Iran. J Shahid Beheshti Dent Sch. 2001;19:357-364.
17. Motallebinejad M, Hedayati M. General dentists knowledge about oral cancers in Babol, in 2005. J Mashhad Dent Sch. 2007;30(3-4):309-318.
18. Khalili M, Aghababaei H, Hosseinzadeh A. Knowledge, attitude and practice of general physicians in relation with oral malignancies. J Qazvin Univ Med Sci. 2004;32:67-72.
19. Humphris GM, Ireland RS, Field EA. Immediate knowledge increase from an oral cancer information leaflet in patients attending a primary health care facility: a randomised controlled trial. Oral Oncol. 2001;37(1):99-102.
20. Rogers SN, Hunter R, Lowe D. Awareness of oral cancer in the Mersey region. Br J Oral Maxillofac Surg. 2011;49(3):176-81. doi: 10.1016/j.bjoms.2010.04.004.
21. Srikanth Reddy B, Doshi D, Padma Reddy M, Kulkarni S, Gaffar A, Ram Reddy V. Oral cancer awareness and knowledge among dental patients in South India. J Craniomaxillofac Surg. 2012;40(6):521-4. doi: 10.1016/j.jcms.2011.09.002.
22. Bertakis KD, Azari R, Helms LJ, Callahan EJ, Robbins JA. Gender differences in the utilization of health care services. J Fam Pract. 2000;49(2):147-52.
23. Sabahy AR, Divsalar K, Bahreinifar S, Marzban M, Nakhaee N. Waterpipe tobacco use among Iranian university students: correlates and perceived reasons for use. Int J Tuberc Lung Dis. 2011;15(6):844-7. doi: 10.5588/ijtld.10.0744.
24. Nakhostin-Roohi B, Valizadeh S. Hookah smoking in students: Prevalence, pattern of smoking, situational characteristics and motivation of use: Evidence from one Iranian university. Gazzetta Medica Italiana Archivio per le Scienze Mediche. 2010;169(2):41-45.
25. Tomar SL, Logan HL. Florida adults' oral cancer knowledge and examination experiences. J Public Health Dent. 2005;65(4):221-30.

How to cite the article: Amanpour S, Raoof M, Kakoei S, Fardisi S, Iranmanesh A, Torabi Parizi M. Knowledge of adults' reading oral cancer in south-east of Iran. Int J Epidemiol Res. 2018;5(1):19-23. doi: 10.15171/ijer.2018.05.