

ARE DENTAL ACCESS CENTERS, THE POTENTIAL LOCATIONS FOR PRIMARY PREVENTION OF ORAL CANCER

¹SANA ADEEBA ISLAM

²KAMRAN HABIB AWAN

³REHAN AHMED MUGHAL

ABSTRACT

The objectives of the study was to determine the proportion of patients attending dental access centers that are at risk of developing oral cancer because of lifestyle habits. Data were collected prospectively about the smoking and smokeless tobacco habits of patients attending a dental access centre at Karachi Medical & Dental College and Abbasi Shaheed Hospital in Karachi. It was a cross-sectional questionnaire survey. Results showed that more than 50% of patients attending the dental access centre were smokers, with almost 30% of the patients in high or very high tobacco use groups. The majority of attendees were under 45 years of age. It was concluded that significant numbers of patients attending the dental access centre have lifestyle habits that make them vulnerable to oral cancer. Dental access centres could usefully provide opportunistic health messages to patients about risk factors in the development of oral cancer and could create smoking cessation programmes.

Key Words: Oral cancer, dental access centers, lifestyle habits, smokeless and smoking tobacco.

INTRODUCTION

One of the ten most common cancers worldwide is the oral squamous cell carcinoma.¹ The incidence of oral cancer in Indo-Pakistan subcontinent is 40% of the total cancers as compared to Europe where prevalence is 2-4%.² The high incidence rate in Pakistan is mainly due to the consumption of smokeless tobacco (betel nut, betel leaves and related products). Other main cause of illness is smoking.^{2,3} Public health professionals in dentistry for example dentists and dental hygienists can actively support their patients in their attempts to stop smoking through proper advice.^{4,5} There are studies which have shown the role of dentists in primary and secondary preventions of tobacco dependence.⁶

In Pakistan, consumption of smokeless tobacco is traditional practice and is culturally acceptable habit.

In Karachi, the consumption of betel nut in males (21%) is more common than in females (12%).² When one compared the rate of oral cancer in Pakistan with other countries in Eastern Mediterranean region the disease is more prevalent in Pakistan and the comparison in the prevalence of oral cancer within Pakistan shows that it is not same everywhere but differ among communities.⁷ A report from Pakistan has also revealed that people using betel leaves with tobacco are 9.9 times more likely to develop oral cancer. Successful treatment for oral cancer requires early diagnosis, but due to the limited access to the proper medical care for poor communities this disease is often not diagnosed in early phase and therefore diagnosis and treatment in late stage causes spread of this disease and decreases the survival rate. Among all the Urban Cancer Registries of South Asia the incidence of Oral Cancer in both the gender was found to be the highest in this region.^{7,8}

Diagnosing oral cancer in an early stage is the most effective way to reduce morbidity and improve survival rate.⁷ On the basis of known statistics on oral cancer it is essential to develop Oral Cancer Primary and Secondary prevention strategies to reduce the incidence of oral cancer.¹ Age, tobacco, alcohol and areca nut increases the oral cancer landscape.^{9,10}

Oral Leukoplakia and Submucous Fibrosis are potentially malignant in the oral cavity and are implicated by areca nut chewing. These disabling conditions in Asian population can be controlled by recommending the public to quit areca use. The epidemiological data

¹ Sana Adeeba Islam, BDS, MSc (KCL, Lon), Assistant Professor, Department of Community Dentistry, Karachi Medical & Dental College, Karachi, A-195, Long Life Bungalows, Block 17, Gulstane-e-Jauher, Karachi, Tel: 34618126 Mob: 03077772572 Email: sanadeeba12@hotmail.com

² Kamran Habib Awan, BDS, Ph.D (KCL, Lon), Assistant Professor, Department of Oral Medicine & Diagnostic Sciences College of Dentistry, King Saud University Riyadh, Saudi Arabia Tel: (966) (1) 467-7422; Fax (966) (1) 467-9018 Email: kamranhabibawan@gmail.com

³ Rehan Ahmed Mughal, MBBS, Dip (Cardif, UK), DMS Premises Abbasi Shaheed Hospital, Karachi, H No. B-26, Block-13/C, Gulshan-e-Iqbal Tel: 34992324, Mob: 03333500749 Email: drrenupk@hotmail.com

Received for Publication: October 20, 2014
Revision Received: February 7, 2015
Revision Accepted: February 12, 2015

arising largely from India, Pakistan and South Africa have derived much of the evidence implicating areca nut.¹¹ The rationale of the study was to determine the proportion of patients who are at risk factors of developing oral cancer.

METHODOLOGY

A self-administered questionnaire was used to assess the main aims of the current study. Questionnaire was carefully prepared from relevant published reports in international journals. The questionnaire questions were related to participants' nationality, age and sex. Data were collected prospectively about the smoking and smokeless tobacco habits of patients attending a dental access centre at Karachi Medical & Dental College and Abbasi Shaheed Hospital in Karachi. Response formats were used in the questionnaire such as 'yes,' 'no.' A pilot study was carried out on 10 patients at Karachi medical and dental college in the waiting area to assess the response of participants to the questionnaire before conducting the study.

369 questionnaires were distributed to the patients attending the outpatient dental clinic in Karachi Medical and Dental College and Abbasi Shaheed Hospital one of the largest government hospital in Karachi, Pakistan. Completion of questionnaire was taken as consent from the patients. However, questionnaires which were not completely filled they were 11. Therefore the data of those 11 was excluded and a total of 357 completed questionnaires were entered into Statistical Package for Social Sciences (SPSS) version 13 for data statistical analysis. Descriptive data analysis was carried out.

Patients were categorised into one of four groups ranging from low risk to very high risk, according to their smoking tobacco and smokeless tobacco history. The four groups were as follows:

- Group A: History of no addiction to smokeless tobacco and smoking tobacco or consuming very few smoking tobacco (1-4cigarretes/day) and 1-2 smokeless tobacco.
- Group B: Using smoking tobacco 5-20 cigarettes/day but no use of smokeless tobacco.
- Group C: Using smokeless tobacco 3-5 quid/day but no use of smoking tobacco.
- Group D: Using smoking tobacco > 20 cigarettes / day and/or smokeless tobacco > 5 quid / day.

DISCUSSION

In the current study though it appeared that a significant proportion of patients attending the access centre had the risk factors for oral cancer, but few oral cancers would present clinically at the dental access centers as patients were mostly under 45 years old. As

TABLE 1: PATIENT CHARACTERISTICS

Variables	Frequency(N)	%
Gender		
Female	166	43.6
Male	213	55.9
Age		
Males Under 45 years	112	29.4
Females Under 45 years	89	23.4
Males 45-60 years	77	20.4
Females 45-60 years	49	12.9
Males Over 60 years	24	6.3
Females Over 60 years	27	7.1
Smoking tobacco use		
Non-smoker	134	35.2
< 20 cigarettes/ day	73	19.2
>20 cigarettes/ day	39	10.2
Smokeless tobacco use		
Non user of smokeless tobacco	134	35.2
< 5 quid /day	73	19.2
>5 quid/ day	39	10.2
Ethnicity		
Urdu Speaking	183	48.0
Punjabi	63	16.5
Sindhi	46	12.1
Baluchi	28	7.3
Variables	Frequency	%
Pathan	59	15.5
Marital status		
Married	278	73.0
Unmarried	99	26.2
Employment		
Employed	169	44.4
Unemployed	207	55.1
Number of family members		
<5 in numbers	160	42
<10	210	55.1

a consequence the value of oral screening and provision of information about self examination for these individuals was limited. It would had greater importance to provide advice about risk factors, as it was likely that in due course, some of these younger patients with adverse lifestyle habits would develop oral cancer in later life.

Present study has also shown that significant numbers of patients attending dental access centers at Karachi Medical and Dental College and Abbassi Shaheed Hospital had lifestyle habits comprising of smoking tobacco which made them vulnerable to oral cancer. Primary prevention of oral cancer could be achieved very well in the dental access centers as these centers appeared well placed to play this role. There was the opportunity to provide opportunistic information about the hazards of smoking tobacco and smokeless tobacco use to the patients whose lifestyle habits had placed them at risk of developing oral cancer. Information leaflets provided to the patients had showed to be effective in improving and increasing knowledge, awareness and perception about risk of oral cancer.^{17,18,19} In addition smoking cessation programs could be implemented to prevent them from continuing the smoking habits. However, a fact should be taken into account that these patients had visited dentist when they had pain and therefore might not give importance to the information about the primary preventive measures.

In this study sample, about half of the participants were employed and had less than 5 family members. Almost half of the participants were unemployed and had low socio-economic status. One of the study had investigated the cost effectiveness of screening for oral cancer, concluded that opportunistic screening of high-risk groups in the private dental practice may be cost effective if targeted towards 40-60 year olds.²⁰ Hence dental access centers could incorporate opportunistic oral mucosal screening into their practice.

As mentioned earlier, the primary preventive programs such as cessation of smoking and betel nut chewing should be aimed at those age groups who are under 45 years and who consume tobacco and areca nuts. Secondary prevention programs include promotion of regular self or professional examination. Prompt help seeking for potentially malignant oral symptoms should be aimed at those age groups who are over 45 years of age, who use tobacco and chew moderately to heavily areca nut.¹²

Previous studies had reported that there was a role of dentist in the recognition of oral cancer via opportunistic oral mucosal screening.¹⁵ This was based on the fact that dentist had depth knowledge about oral mucosal lesions, but unfortunately those who were most at risk of developing oral cancer were the least likely to visit a dentist on regular basis.¹⁶

It would appear that tobacco usage is widely recognized by patients as a risk factor for oral cancer. The dental practice provides a potential opportunity to provide oral health promotion services. Dental access centers were there in a government and private set up. Due to the high cost of the dental treatments

in the private setups the patient's access was mostly towards the government setup. Majority of the people that were at risk of developing oral cancer because of lifestyle habits were from the poor community or low middle class because of less awareness about the risk factors. Private setups obviously attract a different type of client to a dental practice. The best way to initiate oral health promotion services is to implement primary prevention programs (e.g smoking cessation program) at government dental access centers. There were lots of barrier in achieving preventive health services such as cost, time, awareness, lack of adequate incentives and lack of regular and routine enquiry into the smoking habits.

Smoking is an addictive activities with strong social links and is very difficult to discontinue. Nevertheless, advice support and encouragement from health care professionals can have a major impact for those who want to stop. Smoking cessation program is one of the few areas of health promotion where good evidence exists to show effectiveness.²¹

Information provided by patients was taken at face value; there were no secondary questions to check the veracity of the responses, and this may be a source of under-reporting.^{13,14} Furthermore, the results are based on two dental access centers of same organization and as such it is questionable as to whether the findings are generalizable to dental access centres throughout the rest of the Pakistan. Future research should therefore include multi-centre studies to address this limitation.

CONCLUSION

This study indicates that dental access centers are able to identify target groups as part of their routine triaging processes. It may be possible to use dental access centers as an effective way to selectively target risk group individuals by designing effective information programs. There should be an investment made by the commissioning bodies in the provision of such health care messages in dental access centers. Given the relatively poor survival rates of Oral cancer patients, cessation of tobacco use remains the key element in the fight against oral cancer.

ACKNOWLEDGEMENT

The authors are greatly thankful to Dr. Nabeel Baig, and Dr. Nauman Shirazi (Demonstrators in the Department of Restorative Dentistry and Oral Biology respectively KMDC) for their contribution in distributing the questionnaire.

REFERENCES

- 1 Scully C, Felix DH. Oral medicine- update for the dental practitioner. *Oral cancer*. *Br Dent J*. 2006; 200: 13-17.
- 2 Alaiwahi. Political issues, with specific reference to human

- rights. Health Pakistan, 2011; May 13.
- 3 Hilgers KK, Kinane DF. Smoking, periodontal disease and the role of the dental profession. *Int J Dent Hyg.* 2004; 2: 56-63.
 - 4 Chestnutt IG, Binnie VI. Smoking cessation counselling - a role for the dental profession? *Br Dent J.* 1995; 179: 411-15.
 - 5 Cohen SJ, Stookey GK, Katz BP, Drook CA, Christen AG. Helping smokers quit: a randomized controlled trial with private practice dentists. *J Am Dent Assoc.* 1989; 118: 41-45.
 - 6 Gerbert B, Coates T, Zahnd E, Richard RJ, Cummings SR. Dentists as smoking cessation counsellors. *J Am Dent Assoc.* 1989; 118: 29-32.
 - 7 Nair U, Bartsch H, Nair J. Alert for an epidemic of oral cancer due to use of the betel quid substitutes gutkha and pan masala: a review of agents and causative mechanism. *Mutagenesis.* 2004; 19(4): 251-61.
 - 8 Marchant A. Paan without tobacco: an independent risk factor for oral cancer. *Int J Cancer.* 2000; 86: 128-31.
 - 9 Llewellyn CD, Johnson NW, Warnakulasuriya KAS. Risk factors for oral cancer in newly diagnosed patients aged 45 years and younger: a case control study in Southern England. *J Oral Pathol Med.* 2004; 33: 525-32.
 - 10 Llewellyn CD, Linklater K, Bell J, Johnson NW, Warnakulasuriya KAS. An analysis of risk factors for oral cancer in young people: a case control study. *Oral Oncol.* 2004; 40: 304-301.
 - 11 Trivedy CR, Craig G, Warnakulasuriya. The oral health consequences of chewing areca Nut. *Addiction Biology.* 2002; 7: 115-25.
 - 12 Williams M, Scott S. Is there scope for providing oral cancer health advice in dental access centres. *BDJ.* 2008; 205.
 - 13 West R, Witold Z, Przewozniak K, Jarvis MJ. Can we trust national smoking prevalence figures? Discrepancies between biochemically assessed and self-reported smoking rates in three countries. *Cancer Epidemiol Biomarkers Prev* 2007; 16: 820-22.
 - 14 Stockwell T, Donath S, Cooper-Stanbury M, Chikritzhs T, Catalano P, Mateo C. Under-reporting of alcohol consumption in household surveys: a comparison of quantity-frequency, graduated-frequency and recent recall. *Addiction* 2004; 99: 1024-33.
 - 15 Netuveli G, Sheiham A, Watt R. Does the 'inverse screening law' apply to oral cancer screening and regular dental check ups? *J Med Screen* 2006; 13: 47-50.
 - 16 Mohad Yusof ZY, Netuveli G, Ramli AS, Sheiham A. Is opportunistic oral cancer screening by dentists feasible? An analysis of the pattern of dental attendances of a nationally representative sample over 10 years. *Oral Health Prev Dent* 2006; 4: 165-71.
 - 17 Humphris GM, Field EA. The immediate effect on knowledge, attitudes and intentions in primary care attenders of a patient information leaflet: a randomized control trial replication and extension. *Br Dent J* 2003; 194: 683-88.
 - 18 Humphris GM, Freeman R, Clarke HMM. Risk perception of oral cancer in smokers attending primary care: a randomised controlled trial. *Oral Oncol* 2004; 40: 916-24.
 - 19 Humphris GM, Field EA. An oral cancer information leaflet for smokers in primary care: results from two randomised controlled trials. *Community Dent Oral Epidemiol* 2004; 32: 143-49.
 - 20 Speight PM, Palmer S, Moles DR et al. The cost-effectiveness of screening for oral cancer in primary care. *Health Technol Assess* 2006; 10(14): 1-144.
 - 21 Raw M, McNeill A, West R. Smoking cessation guidelines for health professionals: a guide to effective smoking cessation interventions for the health care system. *Thorax Suppl.* (1998); 5, 1-38.