ORIGINAL ARTICLE

FREQUENCY, RISK FACTORS, AND AWARENESS ABOUT ORAL CANCERS AMONG PATIENTS PRESENTING AT TERTIARY CARE HOSPITALS IN LAHORE

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Background: Oral squamous cell carcinoma (OSCC) presents a substantial health challenge in areas where betel nut chewing and tobacco use are prevalent. This study aims to evaluate the contributing risk factors of oral cancers (OC), to know the awareness of the disease in patients, and to attribute knowledge towards early management. **Methods:** It was a cross-sectional survey using closed-ended questionnaires to collect data from 120 patients aged 18 years or older who had been diagnosed with oral cancer, after approval of the IRB. Details of tobacco, betel quid, and *Gutka* (گٹکا) use, and awareness about disease and its management were recorded. Data were tabulated as frequencies and percentages. **Results:** Male patients in the study were affected more with OC than females. Patients aged above 40 years were more prevalent. The most common and significant risk factors were tobacco and betel nut. Oral cancer was seen more in patients with low socio-economic status (SES) and uneducated people belonging to urban areas. Level of awareness was very low among the patients. **Conclusion:** Oral Squamous Cell Carcinoma occurs more frequently in males with the highest incidence in 4th decade of life. Using tobacco was identified as the predominant risk factor, followed by betel nut and *Gutka* consumption. Enhancing public awareness may facilitate earlier detection, improved treatment outcomes, and ultimately lead to a better quality of life for affected individuals.

Keywords: Betel quid, Education, Oral cancer, Risk factors, Socio economic status, Tobacco

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INTRODUCTION

Oral cancer (OC) is among the top ten cancers globally and it is lethal. It is one of the most common types of cancers in Southeast Asia due to habit of chewing betel nuts, smoking, and drinking alcohol.[1,2] Despite its high frequency, cancer of the oral cavity has been generally overlooked since symptoms occur late, resulting in restricted advances in diagnosis and therapy.[3] In Pakistan, the cancer of head and neck is the most frequent type of cancer. Unhealthy practices, such as areca nut eating, betel nut, and smoking are significant risk factors for oral squamous cell carcinoma (OSCC).[4]

Pervasive sites of OSCC are tongue and oral cavity tumours, followed by lip and palate malignancies.[5] OCSS has a significant death rate due to spread, with an overall 5-year survival rate of 50%. Half of those diagnosed die within their initial years of diagnosis.[6] The diagnosis is based on the clinical, radiological, and histological examination. The different methods included in the diagnosis are OPG, CT dent scan, MRI, bone scans, ultrasound, and PET CT.

The stage of oral cancer depicts its severity, the extent of cancer, and the tendency to spread, and is determined by clinical and pathological staging. TNM staging is the widely used method. The significance of staging is that it helps in decision-making and provides optimal treatment regimen.[7,8] The degree to which the cancerous cells mimic healthy ones and how they react to therapy are the two main factors used to grade oral cancer. Treatment options differ based on the site, degree, local, and regional metastases.[9]

Oral cancer is a major health concern worldwide, and WHO expects that global incidences of mouth cancer will rise substantially in the next decades. The increasing occurrence of OC is alarming situation, and the basic risk factors and pathogenesis of this deadly illness should be better understood.[10] It is vital to understand that risk factors play a crucial role in growth of a certain type of oral cancer. It is vital to eliminate these risk factors to avoid an outbreak of oral cancer.[11]

Because people are ignorant of the most serious effects and risk factors for the disease and the reporting symptoms with a low chance of survival, there is need for more research and resources to tackle this lethal sickness. The current study aimed to explore prevalence of OSCC and gender differences, as well as risk factors for it.

METHODOLOGY

This cross-sectional study was conducted at Mayo Hospital, Lahore, Alle Fatima Hospital and other tertiary care hospitals from Jun to Nov 2022. The study was approved by the Institutional Review Board of Alle Fatima Hospital, Lahore (Ref. No. AFH-IRB-07-144, dated 7 Feb 2022. Written informed consent was obtained from all patients.

The sample size was calculated to be approximately 120 patients using the Raosoft sample size calculator, with a 95% confidence level, 5% margin of error, and an assumed response distribution of 50%. Patients aged 18 years or older with a history, physical examination, and histologically confirmed diagnosis of OSCC were included using non-probability consecutive sampling technique.

Data were collected on age, gender, duration of symptoms, type of lesion, pattern of clinical presentation, and risk factors such as use of tobacco, betel nut, *gutka* (گٹکا), alcohol, sunlight exposure, and sharp teeth.

RESULTS

A total number of 120 patients were included of which 83 (69.17%) were male and 37 (30.83%) were female. The male-to-female ratio was 2.2:1. The patients with different age groups were included, i.e., 18–25 years were 6 (5%), 26–40 years were 18 (15%), and >40 years were 96 (80%). (Table-1).

The most common risk factor was tobacco use 86.7%, the second most common was betel quid and *gutka* (گٹکا) 75%, repeated trauma due to sharp teeth was seen in 68.3%, loss of fitted dentures was 62.5%, poor oral hygiene cases were 46.6%, exposure to sunlight was seen in 25%, alcohol use in 15% and malnutrition in 8.3%. (Table-2).

Only 12.3% of participants had an idea about oral cancer. Whereas 84.2% and 83.3%, respectively believed that oral cancer was neither preventable nor treatable. Only 16.7% believed that oral cancer is curable. (Table-3).

Table-1: Demographics of the population

Variable	Category	n (%)
Age	**18–25 years**	6 (5.0)
	26–40 years	18 (15.0)
	>40 years	96 (80.0)
Gender	**Male**	83 (69.17)
	Female	37 (30.83)

Table-2: Predisposing risk factors for oral cancer among study participants (n=120)

Risk Factor	Category	n (%)
Tobacco use	**High**	104 (86.7)
	Low	16 (13.3)
Betel quid and *Gutka* (گٹکا)	**Yes**	90 (75)
	No	30 (25)
Repeated trauma due to sharp cusp teeth	**High**	82 (68.3)
	Low	38 (31.7)
Loose-fitted dentures	**Yes**	75 (62.5)
Poor oral hygiene	**Present**	56 (46.6)
Exposure to sunlight	**Yes**	30 (25)
Alcohol use	**Present**	18 (15)
Malnutrition	**Present**	10 (8.3)

Table-3: Awareness and perceptions about oral cancer among participants [(n (%)]

Question	Yes	No
Are you aware of oral cancer?	15 (12.5)	105 (87.5)
Is it possible to prevent oral cancer?	19 (15.8)	101 (84.2)
Is it possible to treat oral cancer?	20 (16.7)	100 (83.3)

DISCUSSION

Oral squamous cell carcinoma accounts for nearly 90% of all head and neck cancers and can arise from any part of the upper aerodigestive tract, including the lip, oral cavity, nasopharynx, oropharynx, hypopharynx, and larynx.[12] Each sub-site demonstrates distinct clinical behaviour in terms of local spread, nodal metastasis, and treatment response. For instance, lower alveolar OSCC is particularly associated with cervical lymph node metastases, especially in the submandibular triangle and upper jugular nodes.[13] In such cases, palpable, painful, and fixed lymph nodes, particularly those exceeding 2 Cm are indicators of metastatic involvement. The prognosis of OSCC is favourable when detected early, especially for well-differentiated, non-metastatic lesions. However, majority of cases are diagnosed at advanced stages.[14] Recent advances in treatment, such as laser-based techniques, photodynamic therapy, immunotherapy, and gene therapy, are now being explored to improve outcomes in early-stage OSCC.[15]

Hernández-Guerrero *et al*[16] reported a male-to-female ratio of 1.4:1 in Mexico. In our study, the male-to-female ratio was 2.2:1, which is comparable to the study conducted by Khaleel ME *et al*[17] who also found that males were more prone to OSCC. The middle-aged group (45–65 years) was most affected in our study, which aligns with the findings of Javed *et al*[18] where the majority of OSCC patients were aged 47.62±12.18 years. Anwar *et al*[19] also reported that patients above 40 years were significantly more affected.

Tobacco use was identified as the most significant risk factor in our study. This aligns with the findings of Balaram *et al*[20] who noted that over 90% of OSCC cases reported tobacco use. Madani *et al*[21] observed that tobacco acts as an independent risk factor, increasing gingival blood flow, arterial blood pressure, and heart rate, with an OSCC occurrence rate 11 times higher among users compared to non-users. Our findings support these studies, reinforcing the central role of tobacco in pathogenesis of OSCC.

Another risk factor observed in our population was chronic use of ill-fitting dentures, causing long-term mucosal irritation. Several studies have indicated that wearing dentures for over 15 years without regular dental consultations is strongly associated with OSCC.[22–24] Our results also reflect this association.

Only 12.3% of respondents were aware of oral cancer, and a mere 15.9% and 17.0% believed it was preventable and treatable, respectively. These figures are consistent with previous research by Mangalath *et al*[25] and Zhou XH *et al*[26] who found that public knowledge regarding oral cancer prevention and treatment remains poor across many low- and middle-income countries. These low awareness levels reflect a serious gap in health education and underline the need for effective community outreach programs.

There is urgent need to educate the general public about OSCC risk factors, especially tobacco, betel quid, and poor oral hygiene, to facilitate behavioural change. Harmful habits are still common, and knowledge regarding cancer prevention and early detection is limited. Lack of information contributes to late-stage diagnoses, as many individuals seek medical attention only after symptoms have progressed significantly, when prognosis is often poor.

Our findings emphasize the importance of regular dental checkups and early consultations for any suspicious oral lesions. Awareness campaigns and school- and community-level education programs could play a vital role in enhancing public understanding, dispelling myths, and promoting early diagnosis and treatment-seeking behaviour.

CONCLUSION

Oral Squamous Cell Carcinoma occurs more frequently in males with the highest incidence in 4th decade of life. Using tobacco was identified as the predominant risk factor, followed by betel nut and *Gutka* (گٹکہ) consumption. Enhancing public awareness may facilitate earlier detection, improved treatment outcomes, and ultimately lead to a better quality of life for affected individuals.

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IS: Statistical analysis **SZ:** Drafting, Revision **MAN:** Data collection **FS:** Data collection

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