DOI: https://doi.org/10.53350/pjmhs221661089

ORIGINAL ARTICLE

Factors Associated with Early-Stage Diagnosis of Oral and Pharyngeal Cancer

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ABSTRACT

Background and Aim: Oral cancer is still being identified at advanced stages, reducing patients' odds of surviving. Oral and pharyngeal cancer (OPC) has the highest rate of death and morbidity among oral illnesses. The present study aimed to determine the factors associated with early-stage diagnosis of oral and pharyngeal cancer.

Materials and Methods: This interview based survey was conducted on 112 newly diagnosed OPC patients at Dentistry Department of Tertiary Care Hospital, Rawalpindi from July 2020 to December 2020. Those patients with lip's malignancies, oral cavity, or oropharynx were eligible. A patient with recurring tumors in the hypopharynx or nasopharynx and a patient with nasopharyngeal malignancies were excluded from the study. Patient's characteristics such as early or advance stage of cancer, pattern of dental care, and occurrence of early signs and symptoms were compared and analyzed. Details regarding patient's utilization of dental care such as primary care on regular basis and the latest dental visits by OPC examination receipt were recorded. Data analysis was done using SPSS version 27.

Results: Of the total 112 OPC patients, there were 76 (67.9%) male and 36 (32.1%) females. Based on smoking status, the incidence of current, former, and never smoked participants were 40 (35.7%), 38 (33.9%), and 34 (30.4%) respectively. The prevalence of Oral cancer screening during the most recent dentist appointment were 23.8% (n=27). The proportion of patients with a frequent primary healthcare dentist 64% (n=72) was higher than the proportion of patients without a primary healthcare dentist 36% (n=40). The likelihood of undergoing an OPC examination was significantly influenced by the frequency of dental primary care, dentistry appointments in the past 12 months, and regular treatment. Most patients reported discomfort in their mouth as their first symptom, which was influenced by the disease stage at diagnosis.

Conclusion: The present study found that individuals who had an OPC exam were far more prone to be identified at an earlier and more curable stage. Despite this, only a relatively small proportion of those newly diagnosed with OPC reported that they had recently received an OPC exam. OPC examinations were more likely to be performed on regular dental treatment participants than episodic use participants, nevertheless even among frequent attendees, there were numerous missed chances. These findings highlight the need of dental practitioners doing frequent OPC exams on all patients, including episodic attendees.

Keywords: Early-stage diagnosis, Oral and pharyngeal cancer, oral pathology

INTRODUCTION

Oral and pharyngeal cancer (OPC) has the highest rate of death and morbidity among oral illnesses. An estimated 34,400 new cases of OPC are identified each year, with 7500 fatalities [1]. Approximately 97% of OPC cases occur in individuals over 35 years old in France [2]. In their early stages, oral and oropharyngeal malignancies are frequently asymptomatic. A majority of all cases of neoplasms occur among people over the age of 60 years [3]. These illnesses induce significant physical and mental changes due to symptom's emergence that increase with progression associated with therapy. Despites these consequences, older persons have distinct requirements due to physical and psychological variations associated with ageing [4-6]. Quality of life is measured by symptom assessment [7]. Patients' symptoms can be measured through routine screening and since treating the first symptom or the most influential symptom can help prevent a cascade of symptoms arising, clusters of symptoms are clinically significant and reliable indicators of their outcome [8, 9].

Age, tumor size, co-morbidity, tumor location, immunological state, nodal status, tumor DNA, and proliferation markers have all been examined as an oral cancer independent prognostic indicators [10, 11]. A number of approaches have also been used to detect precancerous lesions. These approaches includes oral cytology, fluorescence imaging, oral cavity traditional inspection with time, optical technology, and oral mucosa lesions inspection for symptomatic and asymptomatic [12, 13]. The oral cavity and oropharyngeal malignancies (OPC) epidemiology, which were classified under the oral cancer (OC) as an umbrella term, has changed [14]. Previously, the condition mostly affected older males of poor socioeconomic position; though, since few years, younger men and women, and those from better social strata have been diagnosed with OPC [15]. A primary objective of this study was to determine whether seeing an oral healthcare provider in the preceding year was associated with an earlier stage of diagnosis and to examine the characteristics and behaviors of oral and pharyngeal cancer (OPC) diagnosed patients.

METHODOLOGY

This interview based survey was conducted on 112 newly diagnosed OPC patients at Dentistry Department of Tertiary Care Hospital, Rawalpindi from July 2020 to December 2020. Those patients with lip's malignancies, oral cavity, or oropharynx were eligible. A patient with recurring tumors in the hypopharynx or nasopharynx and a patient with nasopharyngeal malignancies were excluded from the study. Patient's characteristics such as early or advance stage of cancer, dental care pattern, and frequency of initial signs and symptoms were compared and analyzed. Details regarding patient's utilization of dental care such as primary care on regular basis and the latest dental visits by OPC examination receipt were recorded. Patients were investigated for their age, gender, education, and ethnicity. Staging was done as usual, depending on the lesion's location and size. CT scans was performed in each individual that would take precedence over clinical staging. Participants were inquired about their last dental visits and duration before that. Patients were questioned regarding their regular primary care dentist and if their dentist had completed an oral cancer assessment at their most recent appointment. SPSS version 27 was used for data analysis.

Chi-squared analyses were used to evaluate features of patients receiving OPC exams according on cancer summary stage (early or advanced), frequency of signs and symptoms, and dental treatment pattern. To regulate receiving OPC examination, variables associated to patients' dental treatment were examined using the Chi-square test.

RESULTS

Of the total 112 OPC patients, there were 76 (67.9%) male and 36 (32.1%) females. Based on smoking status, the incidence of current, former, and never smoked participants were 40 (35.7%), 38 (33.9%), and 34 (30.4%) respectively. The prevalence of Oral cancer screening during the most recent dentist appointment were 23.8% (n=27). The proportion of patients with a frequent primary healthcare dentist 64% (n=72) was higher than the proportion of patients without a primary healthcare dentist 36% (n=40). The likelihood of undergoing an OPC examination was significantly influenced by the frequency of dental primary care, dentistry appointments in the past 12 months, and regular treatment. Most patients reported discomfort in their mouth as their first symptom, which was influenced by the disease stage at diagnosis. Four stages of patients are shown in Table-I. Baseline characteristics of patients are shown in Table-II. Table-III represents the demographics details, dental care features, tobacco usage, signs or symptoms, diagnosis of oral and pharyngeal cancer (OPC) by stage and receipt of OPC examination.

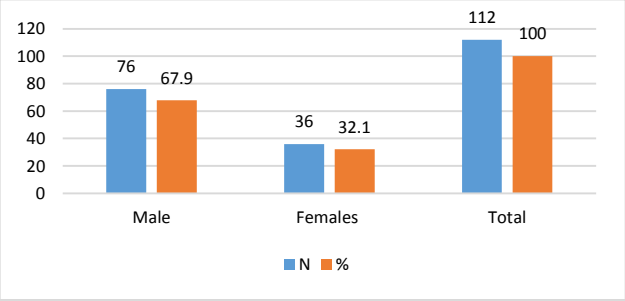

Figure-1: Gender's distribution (n=112)

Table-1: Stages of patients based on their lesions on CT scans

Stages	Frequency N	Percentage %
Stage I	25	22.3
Stage II	32	28.6
Stage III	15	13.4
Stage IV	40	35.7
Total	112	100

Table-2: Baseline characteristics of patients (n=112)

Variables	Value
Age (years) Mean ± SD	56.76±12.6
Gender N (%) Male Females	 76 (67.9) 36 (32.1)
Education N (%) Higher school Graduate Post graduate	 52 (46.4) 48 (42.9) 12 (10.7)
Cancer stage summary N (%) Early Advance	 58 (51.8) 54 (48.2)
Tobacco user's status N (%) Current Former Never	 40 (35.7) 38 (33.9) 34 (30.4)
Regular primary care dentist N (%) Yes No	 72 (64) 40 (36)
Time of most recent visit to dental Within 12 months >12 months	 57 (51.2) 55 (48.2)

Table-3: demographics details, dental care features, tobacco usage, signs or symptoms, diagnosis of oral and pharyngeal cancer (OPC) by stage and receipt of OPC examination

Variables	Early stage N=58	Advance stage N=54	P-value
Oral cancer examination (last dental visit) Yes No	 21 (77.8) 33 (56.9)	 6 (22.2) 52 (96.3)	0.005
Regular primary care dentist Yes No	 38 (65.5) 20 (34.5)	 20 (34.5) 34 (63)	0.010
Initial signs or symptoms 1 2 ≥3	 23 (39.7) 24 (41.4) 10 (17.2)	 12 (22.2) 13 (24.1) 24 (44.4)	0.001
Smoking status Current Former Never	 22 (55) 24 (63.2) 23 (67.6)	 18 (45) 14 (36.8) 11 (32.4)	0.003

DISCUSSION

The present study mainly investigated the OPC associated early-stage diagnosis and found that Participants with OPC exam were considerably more susceptible to early diagnosis and remediable stage. Nevertheless, among those newly diagnosed with OPC, self-reported receipt of recent OPC exams was slightly low. Individuals who had frequent dental care were more prone to have undergone an OPC examination than episodic users, but even among frequent attendance, there were no social and demographic disparities between patients with these tumors, nor were there any differences in smoking behaviors, alcohol intake, or family history of cancer. The majority of study on assessed symptoms both individually and during therapy [16].

Participants who reported obtaining an OPC inspection at their latest current dentist's clinic for checkup were considerably susceptible to be in the early stages of cancer. Previous study confirms the examinations of oral cancer screening efficacy in improving initial finding and lowering death [17]. The disparities in OPC examination rates reported by patients and practitioners, combined with late-stage diagnosis significantly higher incidence, recommended that: OPC investigations are provided dentists about less frequent dental hygienists [18].

The majority of the early indications observed by the patient during an assessment. Number of indications were related to the stage of cancer upon diagnosis. These trends show that dentists and other healthcare practitioners frequently overlooked early, vague symptoms of OPC. There is a scarcity of evidence on the OPC signs and symptoms that are more prone to recognize as an early indicator of illness [19, 20].

Seeing a primary care dentist on a regular basis and obtaining regular treatment may increase the probability of having an OPC examination and being diagnosed with OPC at an earlier stage. Furthermore, individuals who had seen a dentist in the previous 12 months, or who had a history of regular treatment were more prone to have reported obtaining an OPC examination [21, 22].

Numerous investigations had examined the first symptom like pain [23] or on the time between the development of initial symptoms and presenting to a practitioner [24]. Though the individuals in this study were very homogeneous in terms of race, they properly mirrored the gender, age, stage of diagnostic patterns, and racial inequalities commonly associated with this disease [25, 26]. The major risk factor for OPC is cigarette smoking [27] and, as predicted, the vast majority of individuals were either past or current smokers.

CONCLUSION

The present study found that individuals who had an OPC exam were far more prone to be identified at an earlier and more curable stage. Despite this, only a relatively small proportion of those

newly diagnosed with OPC reported that they had recently received an OPC exam. OPC examinations were more likely to be performed on regular dental treatment participants than episodic use participants, nevertheless even among frequent attendees, there were numerous missed chances. These findings highlight the need of dental practitioners doing frequent OPC exams on all patients, including episodic attendees.

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