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ASSESSMENT OF THE FACTORS INFLUENCING EARLY DETECTION PRACTICES OF ORAL CARCINOMAS BY DENTISTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: One of the significant health issues globally includes oral carcinoma (OC). It is the 16th most common type of cancer. The incidence of oral carcinoma worldwide is 8/100000 following with a mortality rate of 3.8/100000 of the population. Countries who have low socioeconomic status have a high number of OC cases. In developing countries, almost 2/3rd of the total new cases are reported out of which 25% are from Asian countries. In low-income and middle-income countries, the 5-year survival rate is very low because lip and oral carcinoma ranks the second most common cancers in South Asia. According to the Global Burden of Disease (GBD), there is a 148.76% rise in OC deaths for about the last 30 years in Asian countries.

Objective: To identify and assess the factors that could influence early detection practices of oral carcinoma among dentists

Study design: A cross-sectional analysis

Duration and place of study: This study was conducted in Jinnah Postgraduate Medical Centre Karachi from January 2024 to January 2025

Methodology: This research is a cross-sectional analysis which included a total of 200 participants. All the participants were gathered from different dental care facilities which included both dental hospitals and private clinics. The participants of this study were all registered dentists who were having the license of PMDC. Digitally, all the data was collected from both clinics and hospitals. SPSS version 26 was used to analyse the data. Percentages, standard deviations, mean, and frequencies were all the descriptive variables. Low, medium, and high levels were described as knowledge scores. ANOVA and t-test were conducted.

Results: There were a total of 200 participants in this study and all of them were registered dentists. The majority of the population were females, representing 70% of the total sample. All the

participants were aged from 23 years to 59 years old. About 68% participants were from a younger age group (23 to 29 years). The majority of the participants were general dentists (34%).

Conclusion: The study highlights that early detection of oral carcinoma can improve prognosis, reduces treatment costs, and reduces mortality. Early detection practices are better where there are proper guidelines written.

INTRODUCTION

One of the significant health issues globally includes oral carcinoma (OC) [1]. It is the 16th most common type of cancer [2]. The incidence of oral carcinoma worldwide is 8/100000 following with a mortality rate of 3.8/100000 of the population [3]. These cancers are a substantial component in the global burden of cancers. According to GLOBOCAN, 377,713 new cases of OC were reported in 2020 throughout the world [4].

Countries who have low socioeconomic status have a high number of OC cases. In developing countries, almost 2/3rd of the total new cases are reported out of which 25% are from Asian countries [5]. However, in European Union countries, only 5.5% of all cancers are reported as OC [6]. Moreover, in the USA, only 3% of all cancers were reported for OC [7]. This shows that due to inadequate access to healthcare and limited early detection, the incidence rate of OC is higher in Asian countries while European Union countries, who are already well developed countries, have very low incidence rate because they have better screening options and treatments [8].

In low-income and middle-income countries, the 5-year survival rate is very low because lip and oral carcinoma ranks the second most common cancers in South Asia [9]. According to the Global Burden of Disease (GBD), there is a 148.76% rise in OC deaths for about the last 30 years in Asian countries [10]. On the other hand, countries like Bahrain or Singapore have very low rates due to better healthcare and GDP. Oral carcinoma occurs due to many reasons, some of which include smoking, alcohol, smokeless tobacco (chewable forms), HPV infection, sun exposure, and areca nut use [11]. The things which worsen the situation is poor oral hygiene and late diagnosis.

Early detection of disorders plays a key role in preventing these cancers. If oral carcinomas are detected earlier, the 5-year survival rate can increase from 50% to 80% [12]. Visual exams and palpation, identification of lesions such as leukoplakia, ulcers, and erythroplakia can be used for screening of OC easily [13]. Despite this high rate of OCs, there is no control strategy for it and the early detection practices remain under explored. Therefore, we conducted this study to identify and assess the factors that could influence early detection practices of oral carcinoma among dentists.

METHODOLOGY

This research is a cross-sectional analysis which included a total of 200 participants. All the participants were gathered from different dental care facilities which included both dental hospitals and private clinics. The participants of this study were all registered dentists who were having the license of PMC. Digitally, all the data was collected from both clinics and hospitals.

Exclusion criteria: Dentists o had the license but were in a non clinical or non practicing setting were not a part of this study.

A team of dentists were there to gather all the data from the participants. The data was gathered in-person. All the participants were informed about this study and their written consent was obtained. A questionnaire was given to all participants in which they were requested to fill all sections by themselves except “practices related to early detection of oral carcinomas.”

Three previously validated instruments were used to develop the study tool. Sections on knowledge of clinical presentation and risk factors, perceived barriers, opinions, and early detection practices were gathered from a multi-country survey [14]. The questionnaire was first tested on approximately 5% of the total population and its content validity was confirmed by field specialists. The main outcome were the practices of dentists regarding early detection of oral cancers. The independent variables were opinions, barriers, knowledge, and demographics.
SPSS version 26 was used to analyse the data. Percentages, standard deviations, mean, and frequencies were all the descriptive variables. Low, medium, and high levels were described as knowledge scores. ANOVA and t-test were conducted.

RESULTS

There were a total of 200 participants in this study and all of them were registered dentists. The majority of the population were females, representing 70% of the total sample. All the participants were aged from 23 years to 59 years old. About 68% participants were from a younger age group (23 to 29 years). The majority of the participants were general dentists (34%). Table number 1 shows the socio-demographics of the study population.

Table No. 1:

Characteristics	**N**	**%**
Gender		
● **Male**	60	30
● **Female**	140	70
Age (yrs)		
● **23 to 29**	136	68
● **30 to 39**	54	27
● **40 to 49**	8	4
● **50 to 59**	2	1
Job Title		
● **General Dentist**	68	34
● **House Officer**	36	18
● **Dental Specialist**	38	19
● **Post-graduate Trainee**	58	29
Job Type		
● **Part-time**	46	23
● **Full-time**	154	77
Practical experience (yrs)		

● **> 5**	128	64
● **5 to 10**	52	26
● **11 to 15**	12	6
● **< 15**	8	4
Education		
● **BDS**	112	56
● **Fcps**	40	20
● **Masters**	26	13
● **PhD**	2	1
● **Certification**	20	10
Post-graduation		
● **Yes**	94	47
● **No**	106	53
Facility type		
● **Hospital**	160	80
● **Clinic**	38	19
● **Dispensary**	2	1
Procedure Type		
● **Basic**	18	9
● **Intermediate**	74	37
● **Advanced**	108	54

Table number 2 shows the risk factors of oral carcinoma.

Table No. 2:

Factors	**N**	**%**
Non-risk Factors		
● **Obesity**	134	67
● **Spicy food**	116	58
● **Marijuana**	38	19

● **Mouth rinses**	160	80
● **Hot beverages and food**	152	76
● **Poor-fitting dentures**	46	23
● **Family history**	28	14
● **Poor oral hygiene**	76	38
Risk Factors		
● **Tobacco**	196	98
● **Alcohol**	172	86
● **HPV**	178	89
● **Old age**	152	76
● **Ghukta**	192	96
● **Less consumption of fruits and vegetables**	62	31
● **Prior OC**	182	91
● **Betel quid**	192	96

Table number 3 shows practices related to early detection of OC.

Table No. 3:

Practices	**N**	**%**
Perform visual inspection of oral mucosa	190	95
Examine tonsils/oropharynx	90	45
Take history of smoking habits	190	95
Provide counseling for smoking cessation	140	70
Perform palpation of lymph nodes	96	48
Take history of alcohol consumption	116	58
Perform palpation of oral mucosa	124	62
Examine posterior-lateral border of tongue	150	75

DISCUSSION

This study was conducted to identify and assess the factors that could influence early detection practices of oral carcinoma among dentists. There were a total of 200 registered dentists involved in this study. The majority of the population were females, representing 70% of the total sample. All

the participants were aged from 23 years to 59 years old, having a high proportion (68%) of the younger population.

Overall, substantial knowledge of clinical presentation and risk factors of OC were demonstrated by the participants. 94% of the participants identified squamous cell carcinoma as the most common type while 72% said that the tongue is the most common site. Only 12% patients responded to the early asymptomatic nature of OC which highlights the evident gaps of knowledge. Although dentists are aware of the general risk factors of oral carcinoma, there is limited awareness about the asymptomatic early stages. These results are similar to other studies which have also reported gaps in early identification of oral carcinoma among dentists [15,16,17].

The risk factor awareness was very high. Some of the risk factors were widely acknowledged such as ghutka (96%), tobacco (98%), HPV (89%), betel quid (96%), and alcohol (86%). If we talk about clinical practices, most dentists routinely perform visual inspections of oral mucosa (95%). As a number of questions were asked from the participants to assess the steps of the examination, the results show that only a few participants performed all steps. The most commonly overlooked inspection during examinations was the inspection of tonsils and palpation of the lymph nodes. These practices can be improved by continuous training and guidelines [18,19, 20]. Screening practices are better in those settings where guidelines are present.

CONCLUSION

The study highlights that early detection of oral carcinoma can improve prognosis, reduces treatment costs, and reduces mortality. Early detection practices are better where there are proper guidelines written.

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This study was conducted without receiving financial support from any external source.

Conflict in the interest

The authors had no conflict related to the interest in the execution of this study.

Permission

Prior to initiating the study, approval from the ethical committee was obtained to ensure adherence to ethical standards and guidelines.

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