



A Survey About Awareness of Oral Cancer Among the Undergraduate Dental Students

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ABSTRACT

Dentists have a crucial role within the best prevention measures, controlling etiological factors and early detection. Lack of general dentist carcinoma knowledge has been shown to be a serious factor to delays in referral and treatment. Dentists' competence and confidence in detecting carcinoma could also be strongly influenced by their school of dentistry training. Hence, it's the responsibility of the school of dentistry to make sure the formation of a generalist with solid technical, scientific, ethical knowledge, promoting good oral hygiene and prevention of oral diseases. Therefore, the aim of this study was to assess dental student's awareness, role in preventing and early detection of oral cancer. The study population included 100 dental students. The risk factors for carcinoma mainly described by the scholars were 44% for smoking and 8% for alcohol consumption. Most of the scholars considered that labial/ buccal mucosa was the commonest site in diagnosis of oral cancer. The early detection of carcinoma improves survival, which was suggested by 46% of scholars. About 59% of scholars reported that they need sufficient knowledge regarding prevention and management of carcinoma. In this present study, out of 100 Dental students who participated in awareness of carcinoma, majority of the dental students were aware and had better knowledge on preventive measures of oral cancer. This study also highlights the necessity for an improvement of the teaching program regarding oral examination.



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INTRODUCTION

Recently the incidence of oral cancer is increasing to an alarming level, especially in developing countries. Epithelial cell carcinoma (SCC) makes about 95% of oral cancers (Soares *et al.*, 2014). Tobacco consumption, unhealthy diet, physical inactivity, and infections are the foremost common causes of cancer. The risk factor for development of carcinoma increases when tobacco is employed in combination with alcohol or betel nut (Sandeepa, 2018). Oral cancer affects the anterior tongue, cheek, floor of mouth, gingiva or the other part of the mouth. The commonest risk factors liable

for carcinoma are chemical factors like tobacco and alcohol, oro-dental factors, biological factors like Human papillomavirus (HPV), syphilis, dietary deficiencies, chronic candidiasis and viruses (Ram *et al.*, 2011; Ramaswamy *et al.*, 2014). Carcinoma occurs more often in males, in people from the lower socioeconomic scale and in ethnic group groups, although rates in females are on the increase (Scully and Felix, 2006). Early detection of oral potentially malignant disorders (OPMDS) and oral cancers is extremely important in achieving an honest prognosis and as a result reducing the morbidity and mortality rates (Speight *et al.*, 1996; Johnson *et al.*, 2000). Dentists have a prominent role within the prevention and early diagnosis of carcinoma because they could be the primary clinicians to encounter a patient with oral cancer. Therefore, they're ready to perform screening for oral cancers, advice interventions and recommend avoiding risky habits and behaviours. Delays within the diagnosis of oral cancers are reported to be related to both healthcare professionals and patients (Pitiphat *et al.*, 2002; McGurk *et al.*, 2005). However, the awareness among academics & professionals is additionally decreasing due to the shortage of proper knowledge about some risk factors, oral lesions that result in oral carcinoma and prevention of carcinoma. Multimedia, videos, podcasts, wikis, social network programs like "Facebook", are all now available on computers and mobiles, and they will collectively play a huge role in increasing awareness with regards to the importance of early detection & prevention of cancer (Elgazzar, 2018). Research on correlation of width of maxillary anterior teeth using extraoral and intraoral factors (Ariga *et al.*, 2018), Periodontal health of three different groups wearing temporary denture (Jyothi *et al.*, 2017), evaluations of microgap at the implant-Abutment interface with original and non original Abutments (Duraisamy *et al.*, 2019), efficacy of fifth generation of cephalosporins against methicillin-resistant staphylococcus aureus (Selvan and Ganapathy, 2016), effect of resin bonded luting agents (Ganapathy *et al.*, 2016), effect of burn plant in oral health (Subasree *et al.*, 2016), cervical and incisal marginal discrepancy in ceramic laminate veneering materials (Jain *et al.*, 2017), medical management of cellulitis (Vijayalakshmi and Ganapathy, 2016), effect of coated surfaces which influencing screw loosening in implants (Ganapathy *et al.*, 2017), ceramic restoration (Ashok and Suvitha, 2016), Lip bumper prosthesis for an acromegaly patient (Ashok *et al.*, 2014), magnetically retained silicone facial prosthesis (Venugopalan *et al.*, 2014), effect of use of impregnated retraction cords on gingiva (Kannan and Venugopalan, 2018), Oral hygiene

status among pregnant women (Basha *et al.*, 2018), Invitro study on surface modifications of cement retained implant crowns under fatigue loads (Ajay *et al.*, 2017) was done in our institute and that I prefer to do a cross sectional study on awareness of oral cancer among undergraduate Dental students. Dental professionals should have sufficient awareness and knowledge of carcinoma and its associated risk factors and appropriate clinical skills to properly perform a scientific carcinoma examination. In previous studies, there's a scarcity of carcinoma awareness amongst doctors and dentists, particularly among medical and dental students. Only 39.0% of dental surgeons and 9.0% of physicians knew the way to identify the foremost common sites during which carcinoma develops. Interestingly, only a couple of them prepared to perform the biopsy procedure (da Silva *et al.*, 2016). Among the university students, 71% and 61.5% of scholars reported that ulcer or oral bleeding and swelling are signs and symptoms of carcinoma (Dubai *et al.*, 2012). While, among postgraduate students 96% of scholars were aware that habits were the most risk factor for many of the carcinoma whereas 50% of students were conscious of carcinoma and 67% of them were confident about the correct treatment protocol (Ramaswamy *et al.*, 2014). Studies performed on medical and dental students, dentists, dental hygienists, physicians, and nurse practitioners have shown their lack of carcinoma awareness and inability to perform standardised preventive measures and diagnostic procedures (Burzynski *et al.*, 2002). Dentists are professionally liable for determining whether patients are in danger of developing carcinoma, also as for providing a comprehensive carcinoma examination for his or her patients. Therefore assessing Dentist knowledge, opinions and practices toward carcinoma is vital. In previous literature, there's no better knowledge and practices about oral cancer among undergraduate Dental students. Therefore, the aim of this study is to examine the dental student's awareness, knowledge of prevention and early detection of oral cancer.

MATERIALS AND METHODS

Self-administered structured questionnaires comprising 17 questions covering socio demographic information, knowledge, attitude and perception were framed. The questionnaire comprised a few open-ended questions and mix of multiple choice. The questionnaire was distributed through Google forms and the study population included 100 undergraduate dental students. The participants were selected randomly by using a simple random sampling method. Students took 5min to complete the

survey. In this study, the pros include economical, easy to create, gather larger data, quick interpretation and wide reach whereas Cons includes response, survey fatigue, homogeneous population. This study obtained approval from the Scientific review board, Saveetha Dental college and hospitals in Chennai. The measures taken to minimise the sampling bias is based on internal and external validity, minimise error in questions and avoid leading questions. The internal validity is based on awareness, knowledge and preventive measures of oral cancer whereas the external validity is based on awareness, results and outcomes of the study. In this study, the output variables are demographic information, social media, Oral cancer, etiological factors, signs and symptoms, early detection and prevention of oral cancer. Each output variable was collected as ordinal data and the collected data were represented as a bar graph. The Statistical Package for the Social Sciences (SPSS) was used to enter and analyse the data.

RESULTS AND DISCUSSION

Out of total 17 questionnaires that were distributed, the response rate of the study was 100%. There were 48% male and 52% females who participated in this study (Figure 1). There were 25% of students in 1st year, 23% of students in 2nd year, 18% of students in 3rd year, 15% of students in 4th year and 19% of students in an internship (Figure 2). Among the participants, 76% of students were aware of Oral cancer (Figure 3). The labial/ buccal mucosa was the structure which is most ordinarily examined during diagnosis of oral cancer, this answer was supported by 41% of students (Figure 4). The oral cancer was diagnosed more frequently at the age group of 45-59 years, which was supported by 45% of students (Figure 5). 48% of students responded smoking tobacco and alcohol consumption would be the etiological factor for oral cancer (Figure 6). 42% of students reported that labial/ buccal mucosa was the foremost common site for oral cancer (Figure 7). 53% of students reported that oral cancer is asymptomatic in early stage; 9% of students responded that Oral cancer shows any mild symptoms in early stage and 38% of students reported in a moderate way whether it is an symptomatic or asymptomatic in early stage (Figure 8). 31% of students responded that white or red patches within the mouth could be the sign of oral cancer (Figure 9). Oral cancer is usually diagnosed in advanced stage, which was supported by 83% of students, whereas 17% of students reported that Oral cancer isn't mostly diagnosed in advanced stage (Figure 10). 80% of students declared that erythroplakia and leuko-

plakia are the foremost common lesions associated with Oral cancer. While, 20% of students weren't accepted (Figure 11). 46% of students suggested that early detection of oral cancer improves survival; 9% of students reported that early detection of cancer isn't possible to increase the survival rates and 45% of students reported in a moderate way that early detection may or may not be possible to extend survivability (Figure 12). 18% of students reported that the Clinical exam would be the early detection of oral cancer; 12% of students reported to Biopsy; 33% of students reported to Regular dental checkup and 37% of students reported to Patient education (Figure 13). 26% of students reported that Good oral hygiene would prevent oral cancer; 16% of students reported Quitting Tobacco; 29% of students reported Regular checkup to dental clinics; 2% of students reported Quitting alcohol consumption and 27% of students reported that maintaining good oral hygiene, quitting tobacco and alcohol consumption, regular checkups to clinics would prevent oral cancer (Figure 14). 2% of students referred their patient to Plastic surgery specialist while suspecting them with oral malignancy; 7% of students referred to an Oral and maxillofacial surgeon; 19% of students referred to an Oral medicine specialist and 59% of students referred to an Oncology specialist (Figure 15). 59% of students reported that they have sufficient knowledge concerning prevention and management of oral cancer whereas 41% of students are lacking in knowledge (Figure 16). 31% of students preferred information packages for gaining knowledge regarding detection and prevention of oral cancer; 36% of students preferred Continuous education lectures; 16% of students preferred Seminars; 15% of students preferred Webinars and a couple of students preferred Participation in Organised research (Figure 17).

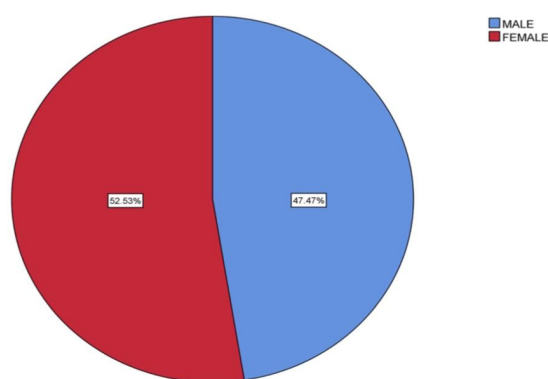


Figure 1: Pie Chart representing distribution of participants on Gender

Dentists need to possess a radical knowledge of risk factors, clinical signs and symptoms. Early diagno-

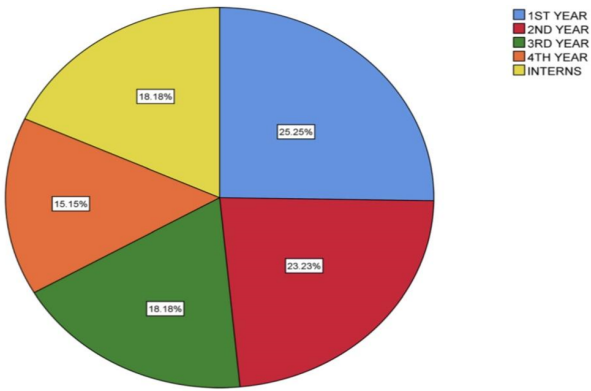


Figure 2: Pie Chart representing distribution of participants on year of study

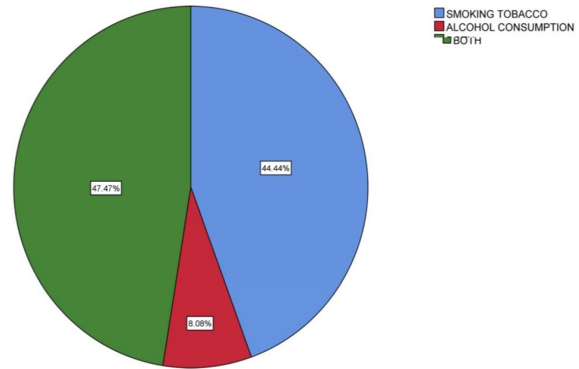


Figure 6: Pie Chart representing the etiological factors for Oral cancer

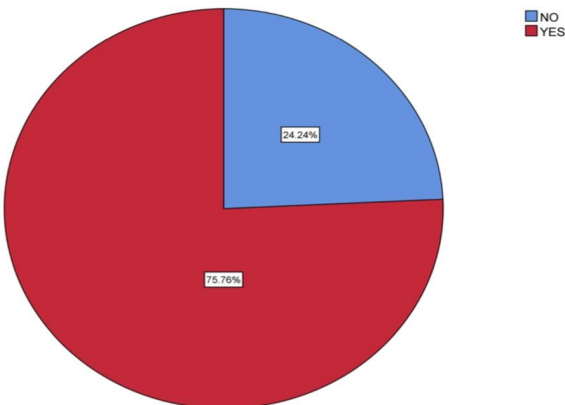


Figure 3: Pie Chart representing participants' awareness towards oral cancer

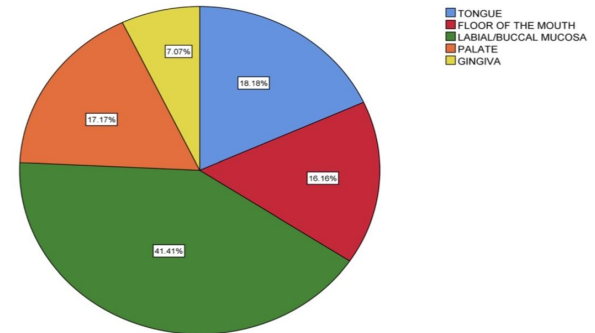


Figure 7: Pie chart representing the common site for Oral cancer

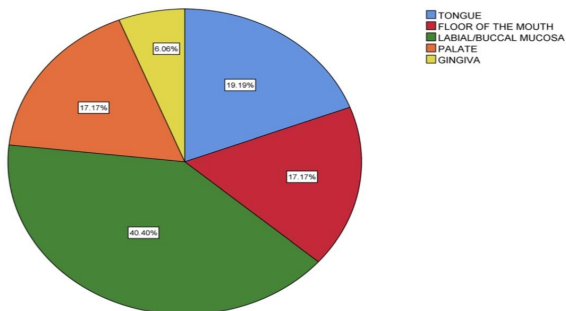


Figure 4: Pie Chart representing the structure which is mostly examined during the diagnosis of oral cancer

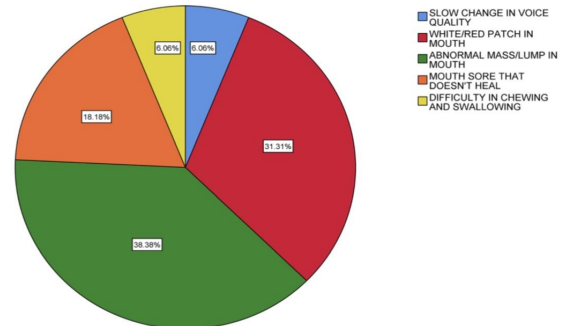


Figure 8: Pie chart representing the sign and symptoms of oral cancer

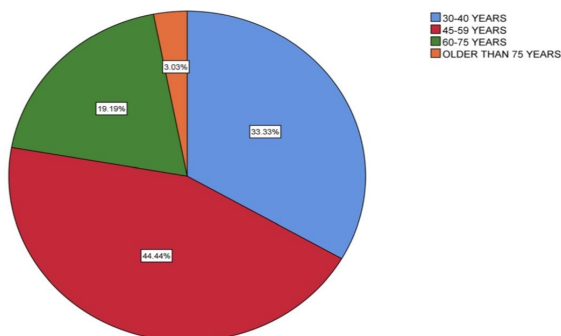


Figure 5: Pie chart representing the oral cancer is diagnosed more frequently among which age group

sis and rapid access for treatment of cancer is a crucial factor for improving outcomes for oral cancer. In this present study, females were more than male participants. Similarly, there is a large female participation (Soares *et al.*, 2014). Tobacco use is the main risk factor of oral cancer. Joanne.*et.al.*, 90% of dental professionals considered tobacco as the main risk factor for Oral cancer (Clovis *et al.*, 2002). Similarly, smoking and alcohol consumption were correctly mentioned by 92.4% and 84.21% of the students whereas in our study 44% of students considered smoking tobacco is the main risk factor for Oral cancer. Gabriela.*et.al.*, 56% of dental practitioners identified older age as a possible risk fac-

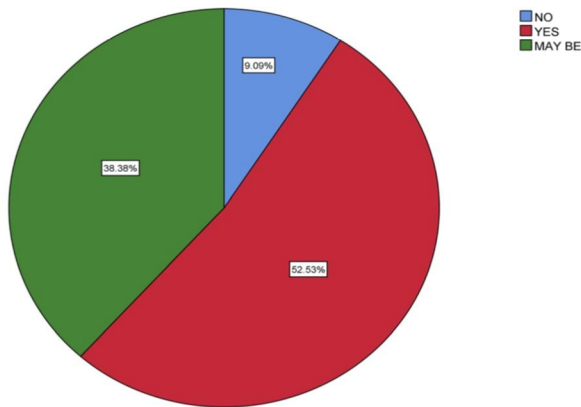


Figure 9: Pie chart representing the oral malignancy patient be asymptomatic in early stage

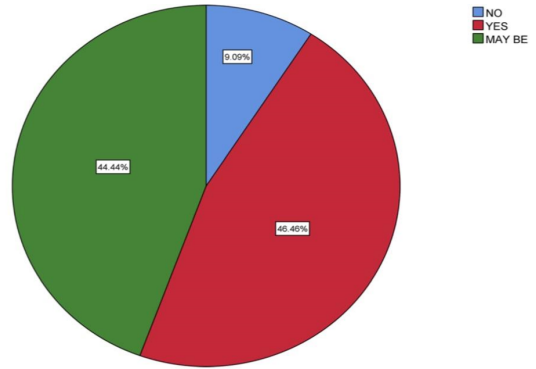


Figure 12: Pie chart representing the early detection of oral cancer improves survival

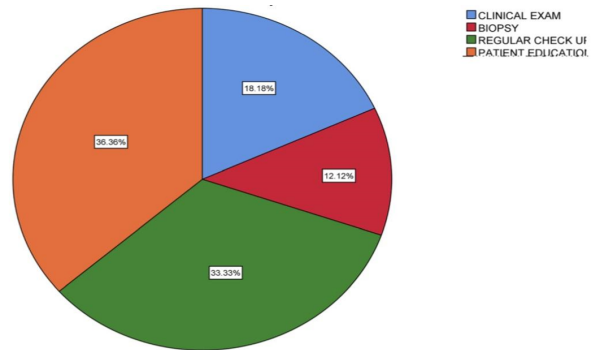


Figure 13: Pie chart representing the early detection of oral cancer

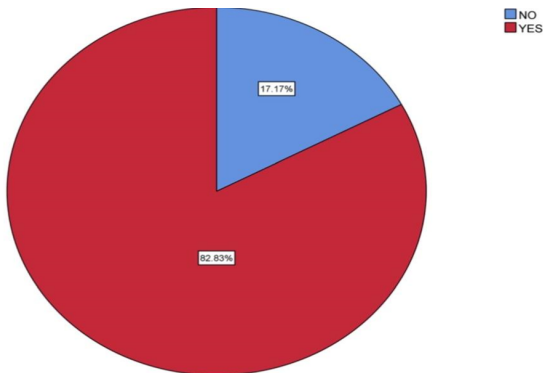


Figure 10: Pie chart representing the Oral cancer patients be diagnosed in advanced stage

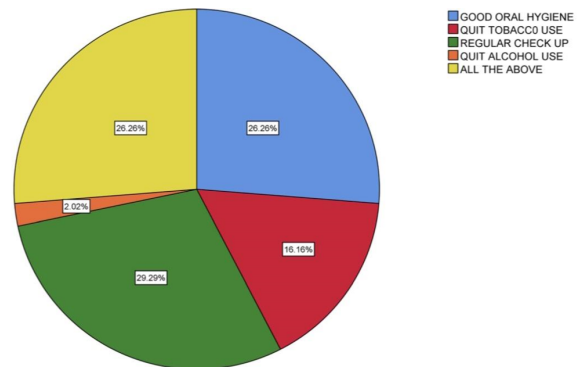


Figure 14: Pie Chart representing the prevention of Oral cancer

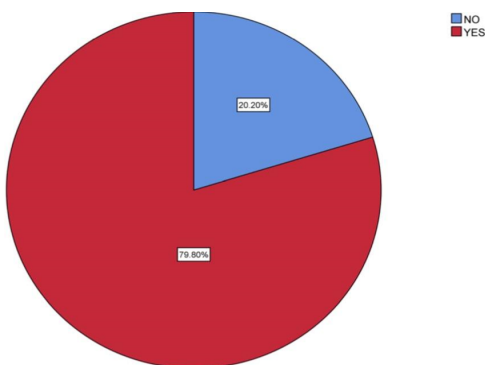


Figure 11: Pie Chart representing Erythroplakia and leukoplakia are the most common lesions associated with Oral cancer

tor for development of oral cancer (Decuseara *et al.*, 2011) whereas in our study, 45% of students considered 45-57 years have the high risk factor for developing oral cancer. Warnakulasuriya.*et.al.*, 84% of the dental practitioners examine oral mucosa for diagnosing Oral cancer (Warnakulasuriya and Johnson, 2008) whereas in our study, 41% of dental students diagnose Labial/ buccal mucosa for examining oral cancer. Zayed.*et.al.*, 46.6% of students believed that the most oral cancer could not be diagnosed in early stage whereas in our study, 83% of students believed that oral cancer is usually diag-

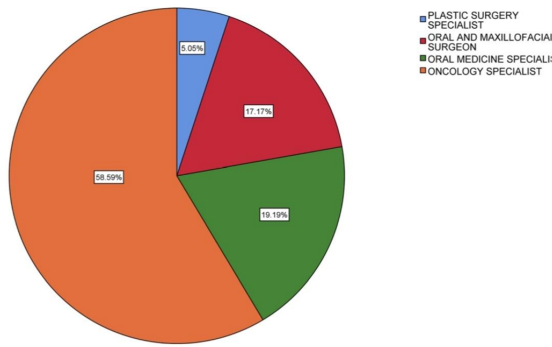


Figure 15: Pie chart representing the dental students referral to a specialist in suspecting a patient with oral malignancy

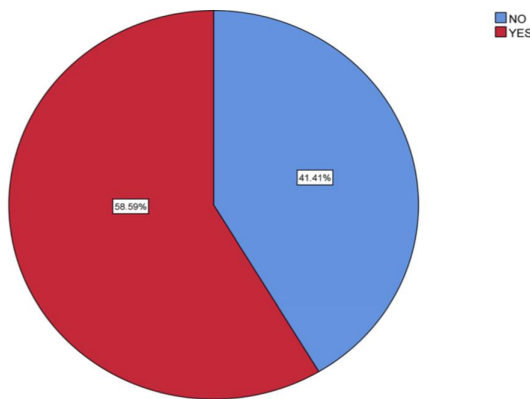


Figure 16: Pie chart representing participants have enough information concerning prevention and management of oral cancer

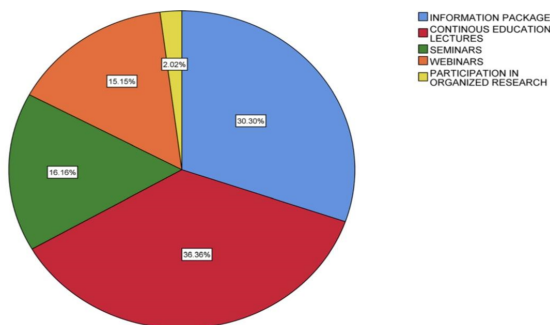


Figure 17: Pie chart representing participants preference system in gaining the knowledge

nosed in advanced stage (Alfadhel *et al.*, 2019). Similar to our findings, Joseph *et al.*, 75% of dentists considered Oral cancer diagnosed in an advanced stage. In a similar study, 90.7% of dentists believed that early detection of oral cancer improves survival whereas in our study 46% of students declared that early detection of oral cancer increases survival rates (Joseph *et al.*, 2012). Human papillomavirus vaccination showed promising results in oral cancer prevention (Chainani-Wu *et al.*, 2011; Daley *et al.*, 2014). Oral cancer screening programs found to be a

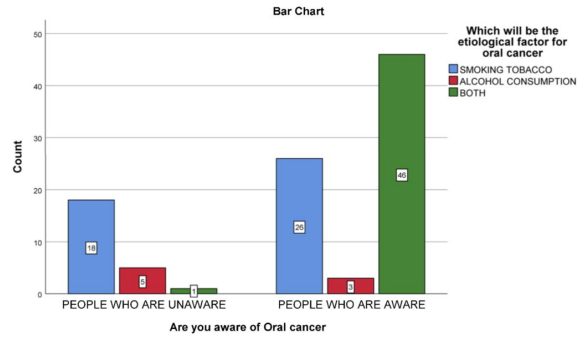


Figure 18: Bar graph showing correlation between awareness of participants and etiological factor of oral cancer

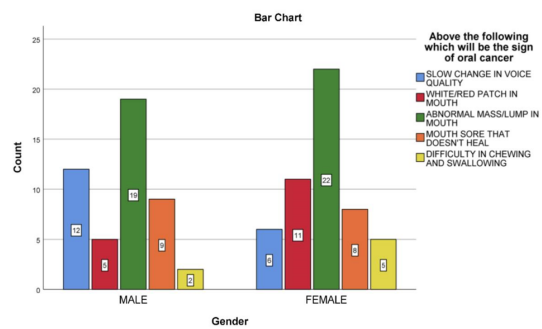


Figure 19: Bar graph showing correlation between gender based responses about symptoms of oral cancer

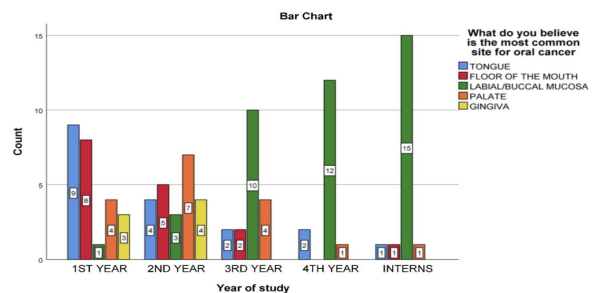


Figure 20: Bar graph showing correlation between year of study and their knowledge on the common sites of oral cancer

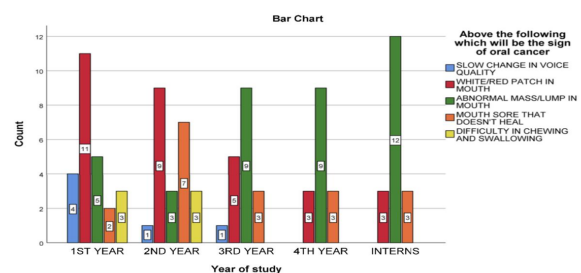


Figure 21: Bar graph showing correlation between year of study and their knowledge on symptoms of oral cancer

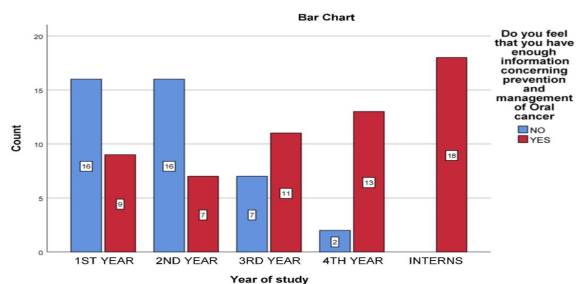


Figure 22: Bar graph showing correlation between year of study and knowledge regarding prevention and management of oral cancer

cost-effective measure in raising the awareness and reducing mortality (Petti and Scully, 2007). Thus, the dental students should be prepared to play a part in public health awareness regarding the explanation of the potential burden of sexually transmitted viruses as HPV, in its act in oral cancer and influence of vaccination. Most of the students preferred Oral medicine specialists when they suspect a patient with oral malignancy (Arnout, 2016) whereas in our study most of the students preferred Oncology specialists. Similar to our findings, Ahmed and Naidoo reported that most of the participants referred their patient to an oral medicine specialist, while remaining of the participants was attributed to oral and maxillofacial surgeon, general surgeon and dentists. This finding could indicate the presence of confusion among general dentists of the referral system of these diseases (Ahmed and Naidoo, 2019). Joanne.et.al., 46% of the dental practitioners considered that their knowledge regarding Oral cancer was insufficient (Clovis et al., 2002). While in our study, 41% of dental students considered their knowledge regarding Oral cancer was insufficient. Zayed.et.al., 34.7% students had sufficient knowledge concerning the prevention and detection of Oral cancer (Alfadhel et al., 2019) whereas in our study 59% of students had sufficient knowledge regarding the preventive measures as well as detection of Oral cancer. Awan.et.al., 61.1% of students preferred seminars to gain information regarding prevention and detection of oral cancer (Awan et al., 2014) whereas in our study, most of the students preferred continuous education lectures for gaining current and adequate knowledge about oral cancer. We acknowledge that our study has some limitations, such as being based on self-applied questionnaires, using students' own perceptions and the limited number of populations. In further studies, awareness on oral cancer among dental and medical professionals. The Knowledge of oral cancer among dentists as well as medical professionals is utmost important.

In Figure 18, Chi-square test was analysed and p-value was 0.000, and it was found to be statistically significant. 46% of students were aware that smoking and alcohol consumption are the etiological factor of oral cancer whereas 54% of students were unaware of the etiological factors of oral cancer. In Figure 19, Chi-square test was analysed and p-value was 0.253, and it was found to be not statistically significant. In Figure 20, Chi-square test was analysed and p-value was 0.000, and it was found to be statistically significant. 42% of students believed that labial or buccal mucosa was the most commonest site for oral cancer. Majority of the interns chose labial or buccal mucosa as the commonest site of oral cancer than other years of students. In Figure 21, Chi-square test was analysed and p-value was 0.010, and it was found to be statistically significant. 38.38% of students were aware of symptoms of oral cancer. In Which interns were more aware of signs and symptoms of oral cancer. In Figure 22, Chi-square test was analysed and p-value was 0.000, and it was found to be statistically significant. 58.59% of students have enough knowledge regarding prevention and management of oral cancer. However, the higher prevalence of knowledge was seen in interns than other years of students.

CONCLUSION

This study demonstrates that most of the dental students are aware and had a fair knowledge about the various aspects of oral cancer. This study revealed quite a satisfactory level of awareness concerning oral cancer among the undergraduate dental students and also entailed the necessity to enhance dental students' knowledge about early detection of oral cancer through upgraded theoretical and practical knowledge.

Conflict of Interest

The authors declare that there is no conflict of interest for this study.

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