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### AWARENESS ON MANAGEMENT OF SQUAMOUS CELL CARCINOMA AMONG DENTAL STUDENTS

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#### **ABSTRACT**

Oral squamous cell carcinoma is the most common malignant epithelial neoplasm affecting the oral cavity. The risk factor for oral squamous cell carcinoma is mostly the use of tobacco and alcohol. Early detection and prevention of the diseases including cancer correlates with better prognosis of the disease and hence increases the survival rates. Thus it is essential for the health care practitioners to have good basic knowledge. Our study aims at assessing the awareness on management of oral squamous cell carcinoma among dental students. An awareness based survey was conducted in January 2020 among dental students (Third years, Final years, Interns). It was an online questionnaire based study, conducted to assess the awareness on the management of squamous cell carcinoma. 150 dental students participated in this study. The data collection was done via google forms. In our study 31.33% of interns 18% of final years and 14% of third years knew the treatment options available for SCC, 30% of interns, 22.67% of third years and only 6% of final years were aware of targeted drug therapy, also 29.33% of interns, 18% of final years and 18% third years felt that surgery was the only treatment option for SCC and 30.67% of interns, 18.67% of final years and only 1.33% of third years know the chemotherapy drug to treat SCC. 30% of interns and 28% of final years were aware of etiological factors of SCC whereas 30% of third years weren't. Chi square test shows  $p < 0.05$ , significant. Thus the results depict that Interns had a good awareness on management of squamous cell carcinoma when compared to the final and third years.

## INTRODUCTION

The occurrence of oral cancer, especially squamous cell carcinoma accounts for almost 2.4% of all cancers<sup>1</sup>. Squamous cell carcinoma accounts for 95% of the oral cancers. Oral cancer doesn't occur as an isolated cellular phenomenon but as an anaplastic tendency that involves many cells and resulting in the multifocal development of cancer at varying rates within the field in response to a carcinogen<sup>2</sup>. This squamous cell carcinoma is caused due to avoidable etiological risk factors<sup>3,4</sup>. Tobacco and alcohol use is identified as the risk factors for oral cancer in patients generally over the age of 45 years<sup>5</sup>. The duration of tobacco smoking has a direct effect on the occurrence of oral cancer<sup>6</sup>. Lesions mainly occur on the lip, tongue, floor of the mouth, gingiva, buccal mucosa, and palatal mucosa<sup>7</sup>. Early identification of oral lesions in the oral cavity reduces morbidity, mortality and mutilation rates thereby increases the quality of life and lowers treatment costs<sup>8,9</sup>. The lesions are initially painless and no discomfort is felt by the patient and thus are frequently undiagnosed until they become symptomatic<sup>10</sup>. Clinical diagnostic tools are very simple and include past medical or health history, identifying the risk factors and examination of oral mucosa for suspicious lesions<sup>11</sup>. In relation to confirmation of the diagnosis a histopathological or a biopsy report of the tissue is required.

Several variants of Squamous cell carcinoma are observed like verrucous carcinoma, adenoid SCC, basaloid SCC, nasopharyngeal carcinoma, carcinoma cuniculatum, sarcomatoid carcinoma, adenosquamous carcinoma, papillary SCC, clear cell carcinoma, and primary intraosseous carcinoma and it is seen that each variant has a particular histomorphological appearance<sup>12</sup>. It is found that demographic factors are known to influence the prognosis and survival rates. Younger adults (below 45 years) have a better survival<sup>13</sup>. Although there is detailed examination of the oral cavity of the patients during dental visits, around 60% of oral cancer in patients are detected only at later stages<sup>14</sup>. These lesions subsequently cause halitosis, dysesthesia or xerostomia in the oral cavity and the symptoms affect the everyday life of the patient<sup>15</sup>. It is also seen that low consumption of fruits and vegetables and also immunodeficiency patients getting exposed to the sun, socio-economic status of patients and infection with human papillomavirus are other risk factors for oral cancers<sup>6</sup>.

Mostly the management of squamous cell carcinoma involves surgical management and depending upon the spread or metastasis of the cancer the level of excision is decided. The study highlights the need to know about the management of squamous cell carcinoma as it be of greater use in clinical practice. It is also important to enlighten them on the diagnostic methods, and correlation of the lesions with the risk factor that the patient is reporting with. It is also essential for the dentist to give a counselling to the patients with adverse oral habits like smoking or smokeless tobacco usage so that the patient does not end up with lesions on the oral cavity which further lead to a diagnosis of cancer.

Previously our department has published extensive research on various aspects of prosthetic dentistry<sup>16-26</sup>, this vast research experience has inspired us to research about the awareness on management of squamous cell carcinoma. The study aims at assessing the awareness among dental students on the management of squamous cell carcinoma.

## **MATERIALS AND METHOD**

### **.STUDY DESIGN**

Awareness based survey

### **DATA COLLECTION**

A survey was conducted in January 2020 among dental students (Third years, Final years, Interns). It was an online questionnaire based study, conducted to assess the awareness on the management of squamous cell carcinoma. 150 dental students (Third years, Final years, Interns) participated in this study. The data collection was done via google forms.

### **SURVEY INSTRUMENT**

A pretested, self administered, closed ended questionnaire comprising the following sections formed the survey instrument. A structured questionnaire containing 10 questions which was adopted from a validated questionnaire developed by the World Health Organisation. The questionnaire was equally distributed among Third years, Final years, Interns. The goal of developing this questionnaire was to know about the awareness the dental students have on the management of squamous cell carcinoma. The questions had to be answered with a Yes or No response.

### **ETHICAL APPROVAL**

Ethical approval was obtained from the Institutional Ethical Committee.

### **DATA ANALYSIS**

The data collected was entered in an Excel sheet and subjected to statistical analysis using SPSS version 20. Chi square test was done. The independent variables are age and gender while dependent variables are knowledge, attitude and practice of management of squamous cell carcinoma. The level of significance was set at  $p < 0.05$ .

Questionnaire given is as follows:

Year of study:

1. Have you come across a patient with Squamous cell carcinoma ?
2. Are you aware of the type of oral cancers ?
3. Are you aware of the etiological factors of Squamous cell carcinoma ?
4. Are you aware of the clinical features of Squamous cell carcinoma ?
5. Are you aware of the diagnostic aids ?
6. Do you know the histopathological features ?
7. Do you know the treatment options available ?
8. Have you heard about targeted drug therapy ?
9. Is surgery the only option for treatment ?
10. Do you know the chemotherapy drugs used to treat Squamous cell carcinoma?

## **RESULTS AND DISCUSSION**

28% of interns came across a patient with squamous cell carcinoma whereas 30.67% of third years and 25.33% of final years did not (Figure 1).

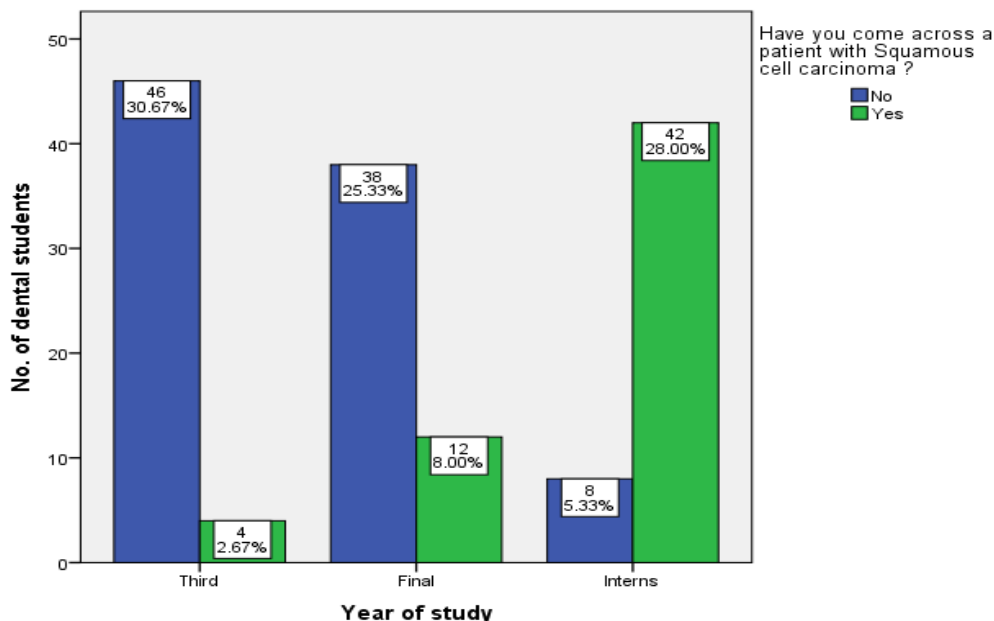


Figure 1: Bar graph denotes association between year of study of the participants and number of students who came across a patient with squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who came across a patient with squamous cell carcinoma

22.67% of interns and 28% of final years are aware of the type of oral cancers whereas 24% of the third years weren't (Figure 2).

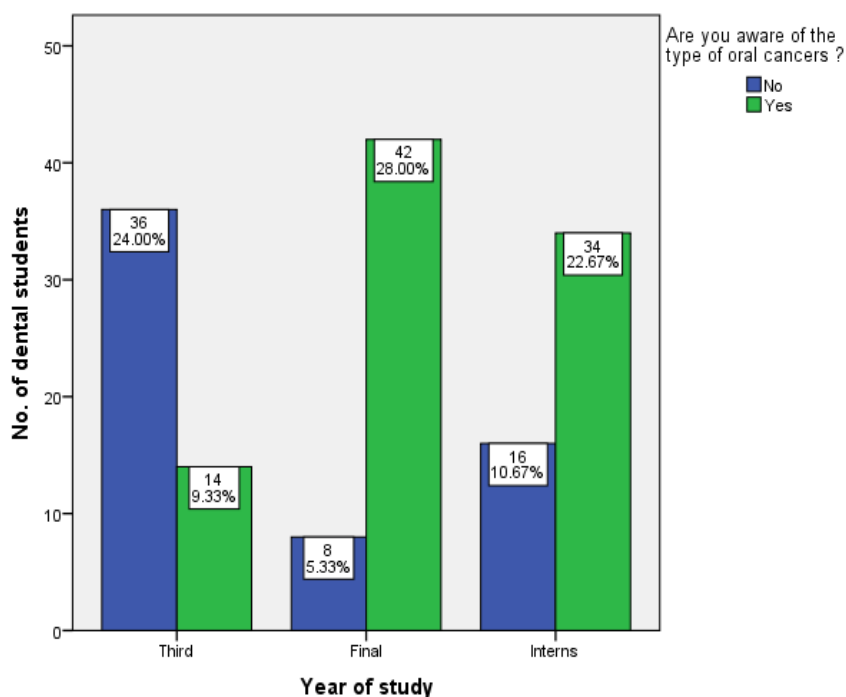


Figure 2: Bar graph denotes association between year of study of the participants and number of students who are aware of the type of oral cancers. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the final years and interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who are aware of the type of oral cancers.

30% of interns and 28% of final years were aware of etiological factors of SCC whereas 30% of third years weren't (Figure 3).

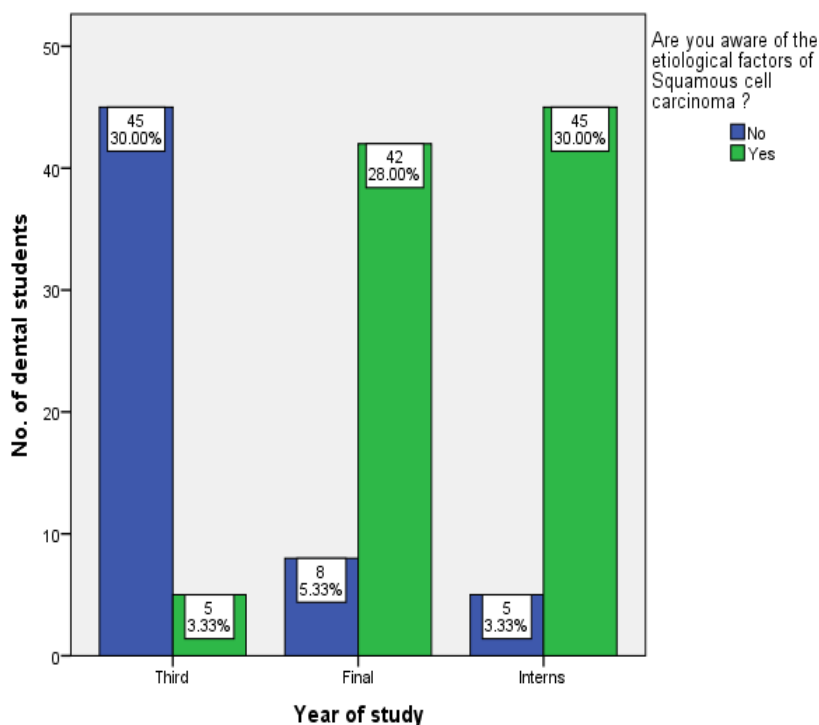


Figure 3: Bar graph denotes association between year of study of the participants and number of students who are aware of the etiological factors of squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the final years and interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and number of dental students who are aware of the etiological factors of squamous cell carcinoma.

28.67% of interns and 28.67% of final years were aware of the clinical features of SCC and 24.67% weren't (Figure 4).

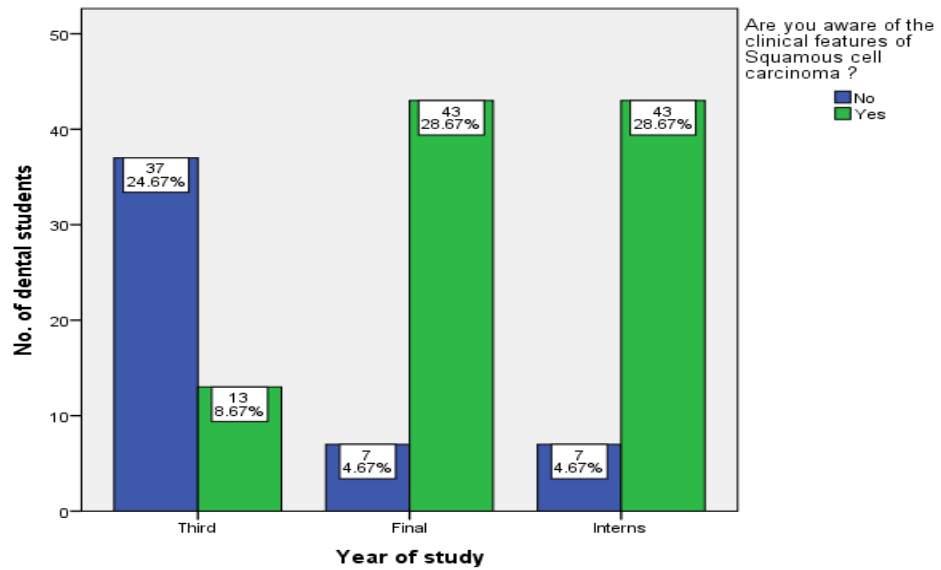


Figure 4: Bar graph denotes association between year of study of the participants and number of students who are aware of the clinical features of squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the final years and interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and number of dental students who are aware of the clinical features of squamous cell carcinoma. 20.67% of interns, 21.33% of final years and 31.33% of third years weren't aware of the diagnostic aids of SCC (Figure 5).

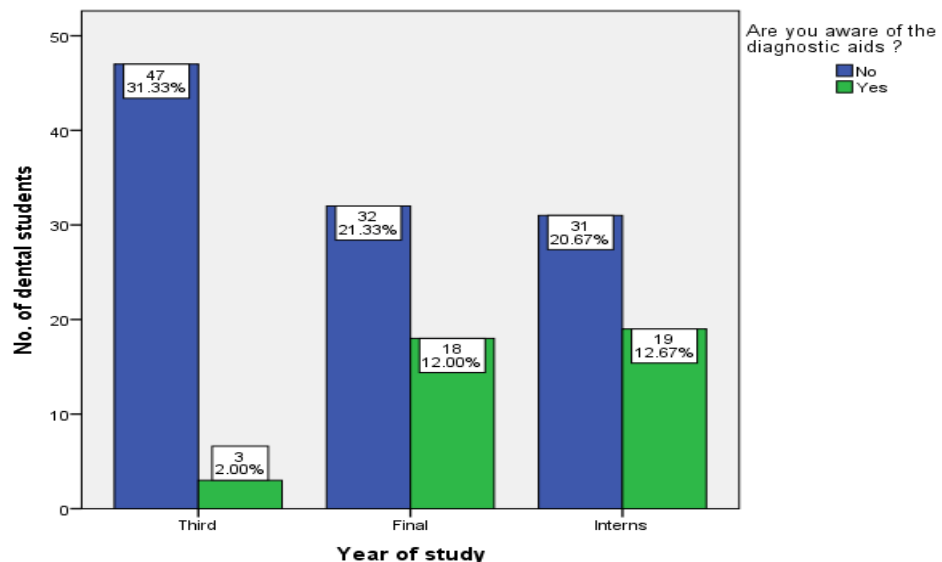


Figure 5: Bar graph denotes association between year of study of the participants and number of students who are aware of the diagnostic aids of squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. The response yes (green) was mostly given by the final years and interns and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant.

Hence proving that there is significant association between the year of study of the participants and the number of dental students who are aware of the diagnostic aids of squamous cell carcinoma.

31.33% of interns and 30% of final years knew the histopathological features of SCC whereas 32% of third years did not (Figure 6).

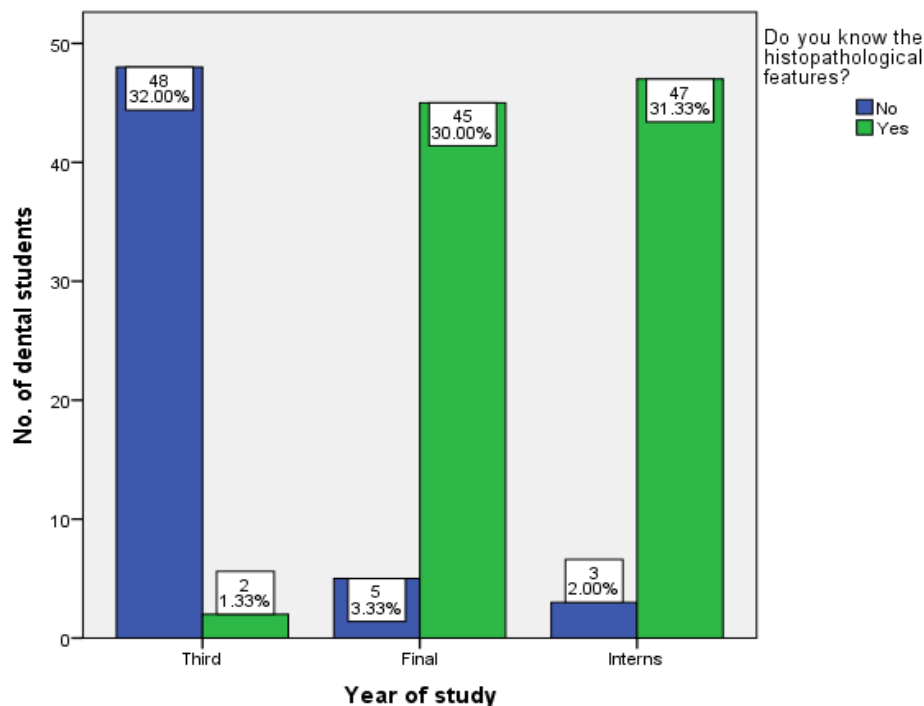


Figure 6: Bar graph denotes association between year of study of the participants and number of students who knew the histopathological features of squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the final years and interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and number of dental students who knew the histopathological features of squamous cell carcinoma.

31.33% of interns 18% of final years and 14% of third years knew the treatment options available for SCC (Figure 7).

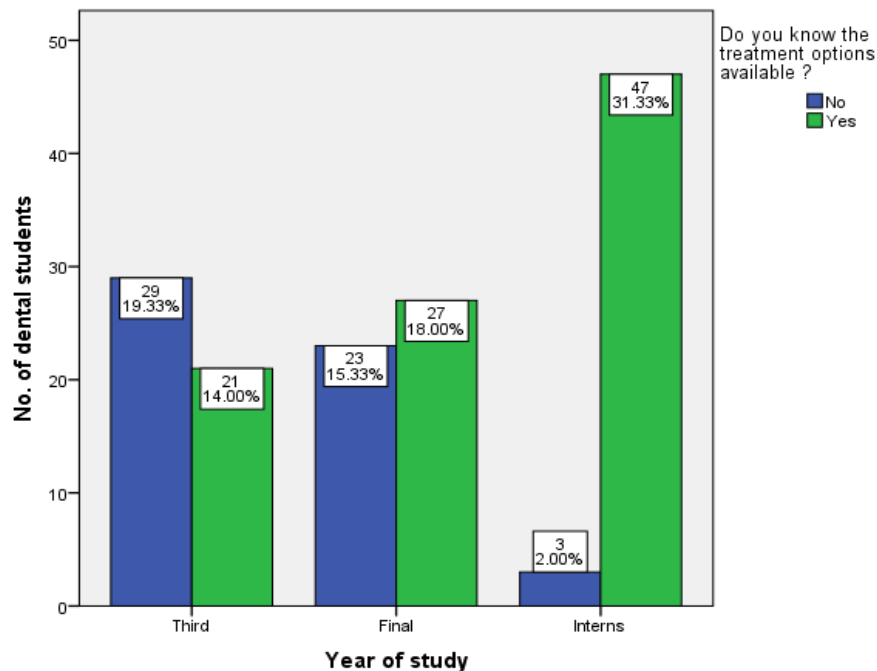


Figure 7: Bar graph denotes association between year of study of the participants and number of students who knew the treatment options available. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and number of dental students who knew the treatment options available. 30% of interns, 22,67% of third years and only 6% of final years were aware of targeted drug therapy (Figure 8).

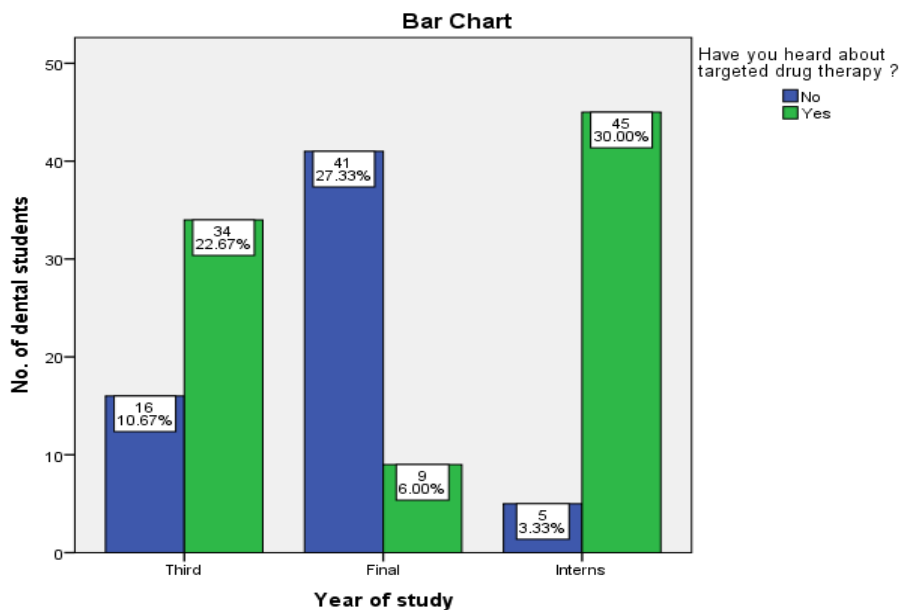
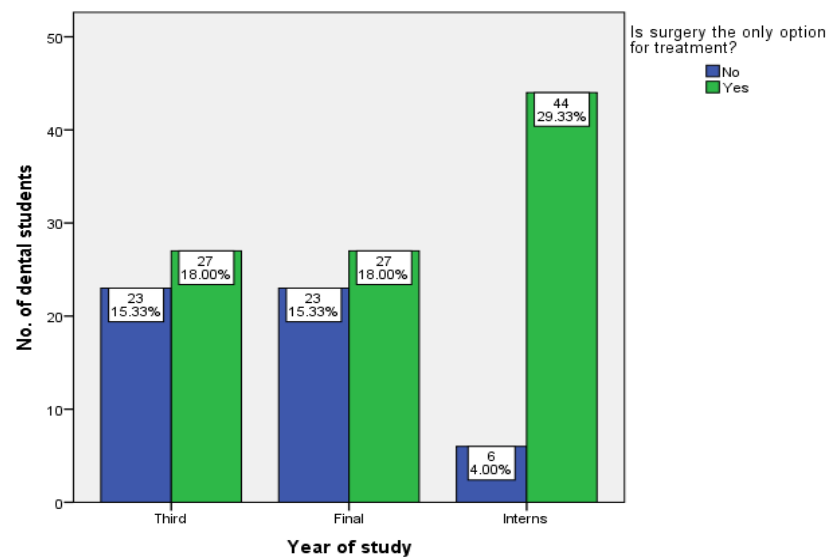


Figure 8: Bar graph denotes association between year of study of the participants and number of students who knew about targeted drug therapy. X

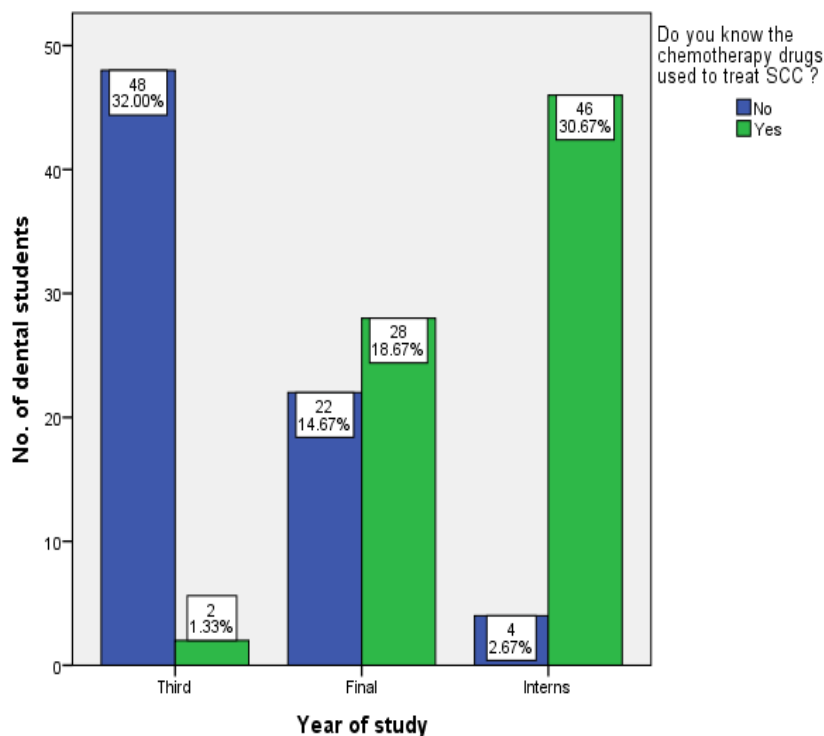


axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the interns and third years have given a response of yes (green) and the response no (blue) was mostly given by the final years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and number of dental students who knew about targeted drug therapy. 29.33% of interns, 18% of final years and 18% third years felt that surgery was the only treatment option for SCC (Figure 9).



**Figure 9:** Bar graph denotes association between year of study of the participants and number of students who felt that surgery was the only treatment option for squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the interns have given a response of yes (green) and the response no (blue) was mostly given by the third and final years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and number of dental students who felt that surgery was the only treatment option for squamous cell carcinoma.

30.67% of interns, 18.67% of final years and only 1.33% of third years know the chemotherapy drug to treat SCC (Figure 10).



**Figure 10:** Bar graph denotes association between year of study of the participants and number of students who knew the chemotherapy drugs used to treat squamous cell carcinoma. X axis denotes the year of study of the participants and Y axis denotes the number of dental students. Majority of the interns have given a response of yes (green) and the response no (blue) was mostly given by the third years. Chi square test shows  $p=0.000$ , significant. Hence proving that there is significant association between the year of study of the participants and the number of dental students who knew the chemotherapy drugs used to treat squamous cell carcinoma.

In our study 28% of interns came across a patient with squamous cell carcinoma whereas 30.67% of third years and 25.33% of final years did not. It was seen that 20 per 100000 population oral cancer patients which accounts for about 30% of all types of cancer<sup>27</sup>. The people from the lower socioeconomic status of society and in rural areas are more affected due to a higher exposure to risk factors such as tobacco<sup>28,29</sup>. Our results depict that 22.67% of interns and 28% of final years are aware of the type of oral cancers whereas 24% of the third years weren't. From previous studies it was seen that the medical and dentals students were aware that squamous cell carcinoma is the most common oral malignancy<sup>1,30</sup>.

From our study, 30% of interns and 28% of final years were aware of etiological factors of SCC whereas 30% of third years weren't. Akshaya et al. reported that 93% of the dental students identified a number of different risk factors for oral cancer<sup>31</sup>. Santhosh et al. states that in his study 67.7% of dental students take the history of the patient regarding use of tobacco and 62.4% of the students educate their patients about the adverse effects of

tobacco and alcohol<sup>14</sup>. In the study by Akshaya et al. the majority of the students felt that poor oral hygiene was the most important risk factor<sup>31</sup>. But in our study most of the students were aware of the etiological factors and shows that there was good knowledge on etiological factors among the students. Also Gaye et al. states that 98% of the third and fifth grades identified tobacco as a risk factor<sup>32</sup>. Tânderson et al. states that the risk factors for oral cancer that was chosen by the students were smoking and drinking and 48.12% of the students also described SCC as the most common type of oral cancer.

In our study 28.67% of interns and 28.67% of final years were aware of the clinical features of SCC and 24.67% weren't and also 20.67% of interns, 21.33% of final years and 31.33% of third years weren't aware of the diagnostic aids of SCC. Previous studies state that the students identify the tongue as the main site and ulcerated lesion as the primary clinical aspect<sup>33</sup>. Knowledge regarding the clinical features and diagnostic aids have to be emphasised on as the early signs and symptoms can be identified and the patient can be treated in the initial stages itself. From our results 31.33% of interns and 30% of final years knew the histopathological features of SCC whereas 32% of third years did not. Histologically it is seen that the lesion passes through various phases undergoing preneoplastic damage until the formation of cancer cells. This carcinogenesis is associated with precancerous lesions which may be leukoplakia, erythroplakia or mixed<sup>10</sup>.

In our study 31.33% of interns 18% of final years and 14% of third years knew the treatment options available for SCC, 30% of interns, 22.67% of third years and only 6% of final years were aware of targeted drug therapy, also 29.33% of interns, 18% of final years and 18% third years felt that surgery was the only treatment option for SCC and 30.67% of interns, 18.67% of final years and only 1.33% of third years know the chemotherapy drug to treat SCC. 96% of the dental students had listed surgery, radiotherapy and chemotherapy treatment modalities of oral cancer<sup>34</sup>. Greenwood et al. showed in his study that 60.8% general dental practitioners mentioned chemotherapy as the treatment modality<sup>35</sup>.

The limitation was the study is that the study was conducted only in one city (Chennai) and may not be generalized to other regions.

## **CONCLUSION**

Within the limitation of the study it was seen that Interns had a good awareness on management of squamous cell carcinoma when compared to the final and third years. This is because of the clinical expertise that the interns have acquired through clinical experience and clinical practice.

## **ACKNOWLEDGEMENT**

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