

## PREVALENCE OF SQUAMOUS CELL CARCINOMA BASED ON HISTOLOGY

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### ABSTRACT:

**Introduction:** oral cancer is progressing in India and is one of the most common cancers seen due to high tobacco usage seen in both genders, smoking and alcohol consumption which is mostly seen in males. The aim of this study is to find the prevalence of oral squamous cell carcinoma based on histology

**Methods and Materials:** This is a retrospective clinical study carried out by a private dental institution. This study analyses the prevalence of squamous cell carcinoma. The data was analysed over a period of 2 years. The sample was collected based on the histology reports for patients who had undergone biopsies.

**Results:** A total of 191 cases were studied in which 41(21.4%) cases had squamous cell carcinoma, out of which 85.4% were males and 14.6% were females. Most affected age group was 51-60 years(34.1%) followed by 41-50 years(31.7%). The most common type of OSCC was moderately differentiated squamous cell carcinoma(48.8%).

**Conclusion:** There was a high prevalence of OSCC and people should be made aware of the consequences of using tobacco products.

**Keywords:** OSCC, tobacco, alcohol, Innovative technique

### INTRODUCTION:

Oral cancer are neoplasms which affect the structure and tissue of the oral cavity. According to reports from WHO, oral cancer ranks 6th among all malignancies(1).

The oral cavity has been frequently exposed to various carcinogenic agents such as tobacco, alcohol, betel nut, and microorganisms such as human papillomavirus (HPV). Drinking alcohol and smoking tobacco at the same time can increase the chances of cancer, especially cancer of the oral cavity, pharynx, larynx, and esophagus(2-4). Oral squamous cell carcinoma (OSCC) comprises more than 90% of head and neck malignancies(5)

Areca nut, betel quid and leaves chewing is among the most common practices along with tobacco, alcohol and caffeine. Its usage is very popular in Asian countries. Around 600 million people chew areca nuts worldwide and 85% of them live in Southeast Asian countries. Chronic use of these items can contribute significantly to the high incidence of oral cancer in these countries(6)(7). Areca nut is present in a large number of chewing products, such as Paan (betel quid), gutka, and paan masala consisting of a mixture of lime, areca nut (with or without tobacco), slaked lime etc which are wrapped in betel leaf. Use of these products can cause OSCC, oral submucous fibrosis, leukoplakia and other premalignant lesions(8). OSCC has a propensity for early and extensive lymph node metastases which mostly occurs in people with alcohol and tobacco habit in their 5th and 6th decades of life(9,10). Biopsy and histological analysis can be helpful in the clinical diagnosis of OSCC. Histological features of ossc include loss of the basement membrane and disturbances in architectural and cytological epithelium features with invasion of the connective tissue.(11). OSCC is typically graded as, Well differentiated, Moderately differentiated, Poorly differentiated. Grading of SCC depends on how easy it is to recognise the characteristics of squamous epithelium (eg. intracellular bridges, keratinisation), pleomorphism and mitotic activity.

India is a high-risk region for oral cancer due to a high tobacco use, particularly chewing (in both sexes), smoking and alcohol drinking seen mainly in the male population(12). The aim of this study is to find prevalence of squamous cell carcinoma based on histology in a private dental institution.

### MATERIALS AND METHODS:

It's a single centered retrospective study in a private dental institution, Chennai. The samples were taken from the patients who checked in From June 2019 to August 2021. Ethical clearance for this study was obtained from the institutional review board. The disadvantage of this study was small sample size, trends and geographic location.

Two reviewers were involved in this study. The samples were taken from patients who checked in from June'19 to August' 21. A total of 191 histology samples were collected in which 41 patients have squamous cell carcinoma. Internal validity includes histopathology samples and squamous cell carcinoma. External validity is replication of results in different time periods.

The data was collected, verified, tabulated and analyzed. The data was imposed on SPSS and the technique used to quantify the data was Chi square. The statistical significance value is set at 0.05.

#### RESULTS AND DISCUSSION:

A total of 191 cases were studied in which 41(21.4%) cases had squamous cell carcinoma, out of which 85.4% were males and 14.6% were females(Fig-1). Most affected age group was 51-60 years(34.1%) followed by 41-50 years(31.7%), 61 and above years(22%) and 30-40 years(12.2%)(Fig-2). The most common type of OSCC was moderately differentiated squamous cell carcinoma(48.8%) followed by well differentiated SCC( 31.7%) and poorly differentiated SCC(19.5%)(fig-3). Chi square analysis was done between gender and Type of OSCC and it was not statistically significant( $P>0.05$ )(Fig-4).

Studies showed that males have higher incidence of OSCC which might be because of cultural variations and different lifestyles and men also indulge more in activities which can cause oral cancer such as smoking and drinking alcohol(12). OSCC is actually a disease affecting the 5th or 6th decade of life which is proven by many studies and is consistent with our study(13,14). One study has shown that moderately differentiated variant is more prevalent(1) which is in consensus with our study whereas other study has showed well differentiated to be common this can be due to different habits of people due to different geographic area(15)

Limitations of the study included less sample size, uni-centred study, Different sites of occurrence of OSCC could also have been included, no various ethnic groups involved.

#### CONCLUSION:

Our study showed that there was a high prevalence of OSCC among the given samples. Due to increase in tobacco usage and alcohol consumption, the prevalence of OSCC increases. People are neglecting the serious effects of tobacco and alcohol consumption and should be made aware of the problems which can be caused by these agents.

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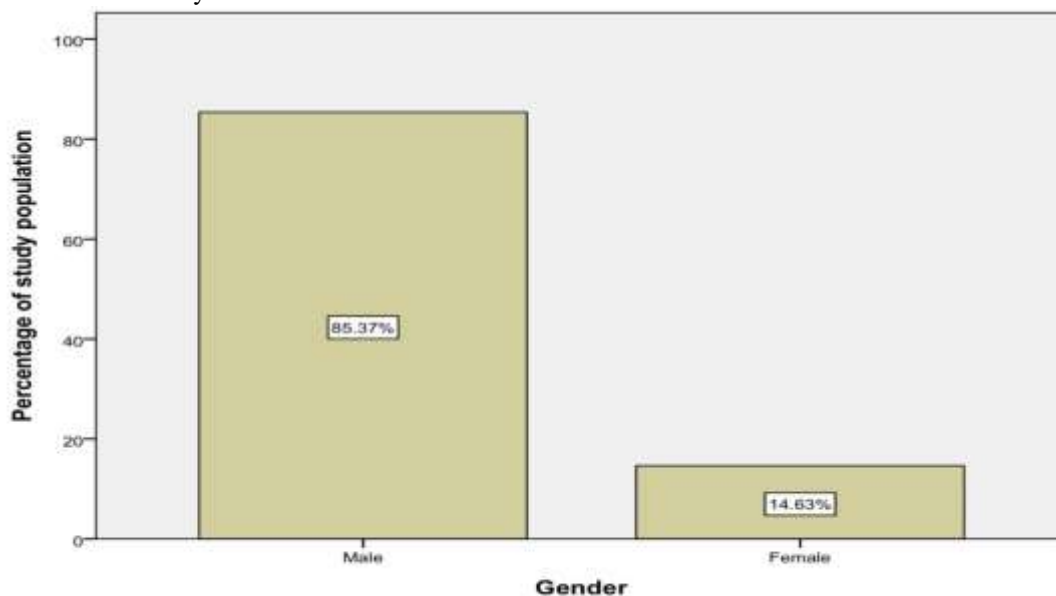


Figure-1: This graph shows the number of patients with OSCC among different genders. X axis represents the gender, Male(85.37%), Female(14.6%) and Y axis represents the Percentage of the study population.

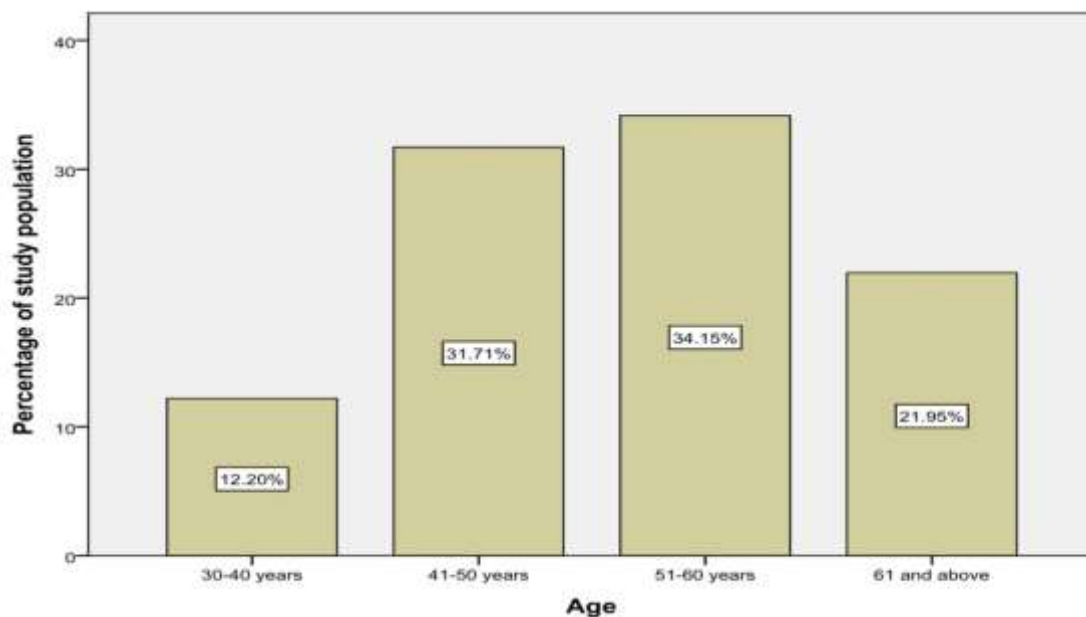


Figure-2: This graph shows the number of patients with OSCC among different age groups. X axis represents the age groups,30-40 years(12.2%), 41-50 years(31.7%), 51-60 years(34.15%) and 61 and above years(21.9%) and Y axis represents the Percentage of the study population.

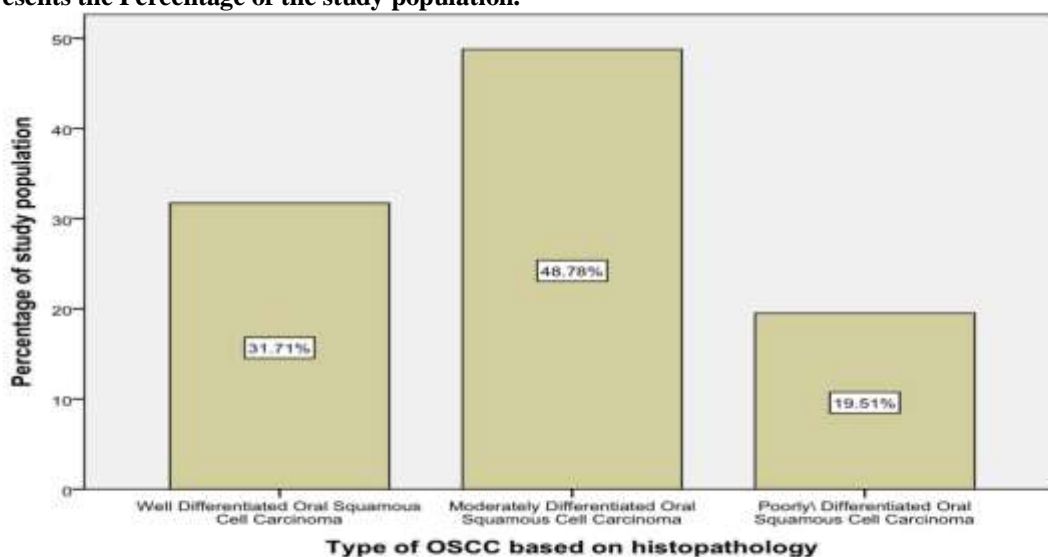


Figure-3: This graph shows the number of patients with OSCC based on histopathology. X axis represents different types of oscc, well differentiated SCC( 31.7%), moderately differentiated squamous cell carcinoma(48.8%) and poorly differentiated SCC(19.5%) and Y axis represents the Percentage of the study population.

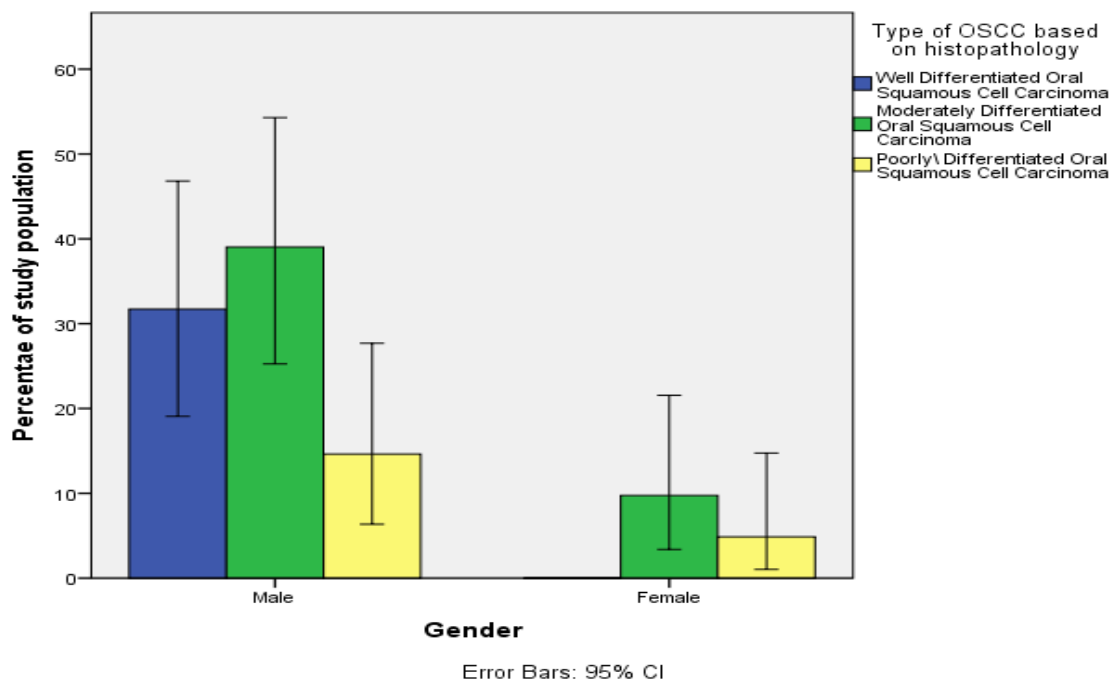


Figure-4: This error graph shows the correlation between gender and OSCC based on histopathology. X axis represents Gender and Y axis represents the Percentage of the study population. The blue colour indicates well differentiated OSCC, Green represents moderately differentiated OSCC and yellow represents poorly differentiated OSCC. 39% of Male patients have moderately differentiated OSCC followed by well differentiated OSCC at 31.7% whereas females have 9.7% moderately differentiated OSCC and 4.8% of poorly differentiated OSCC. Chi square analysis was done between gender and Type of OSCC and it was not statistically significant( $P>0.05$ ).

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