PRESENCE OF ORAL LESION AS A FACTOR TOWARDS EFFECTIVENESS OF ANTI-TOBACCO COUNSELLING AND QUIT RATES IN OUT PATIENTS OF PRIVATE DENTAL COLLEGE- A RETROSPECTIVE STUDY.

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ABSTRACT:

Tobacco use is one of the most important risk factors for the development of oral mucosal lesions including oral pre-cancer and cancer. The type and location of the lesion varies with the type of tobacco used, the way it is used, and the frequency and duration of use. Hence our study is aimed to determine the effectiveness of anti-tobacco counselling and the presence of oral lesions in patients and their willingness to quit the habit. A retrospective analysis was conducted among 398 participants, of which all were smokers, 320 patients diagnosed with oral mucosal lesions, 78 patients without any lesions. The study protocol included data collection with digital software entry. Statistical analysis was done using SPSS version 22 and a chi-square test was employed, with a p value < 0.05 considered to be statistically significant. The lesion was most common among the age of 31-40years (33.33%), followed by 41-50years (26.92%), 18-30years (20.5%), 51-60years (12.8%) and >60% (6.4%). The review was high among the patients with oral lesion (57.6%), anyways patient with lesion and did not turn up for review is 42.3%. The study population diagnosed with oral mucosal lesion and who had come for review visits had the highest willingness for quit rate (62.7%), than with patients only came for intervention visit (37.2%).

KEYWORDS: Anti-tobacco counselling; oral mucosal lesion; Quit rate; Tobacco use.

INTRODUCTION:

Oral diseases can be considered as a public health problem due to their high prevalence and significant social impact (Smyth, Caamaño and Fernández-Riveiro, 2007). The oral mucosal lesions have a greater tendency to transform into malignancy. These oral mucosal lesions including leukoplakia, erythroplakia, and submucous fibrosis are well documented for their malignant transformations (Gupta *et al.*, 1980; Murti *et al.*, 1985; Bouquot, 1991).

India accounts for the highest tobacco-related mortality with about 7,00,000 annual deaths attributable to smoking in the last ten years, with an expected rise to one million in the coming decade (Gajalakshmi *et al.*, 2003). According to the Global Adult Tobacco Survey (GATS), India 2010, The prevalence of tobacco use among Indian Adults is 35%. Smoking and chewing tobacco have been positively associated with oral lesions such as leukoplakia, oral submucous fibrosis and oral lichen planus, which have potential for malignant transformation (Yen, Chen and Chen, 2007).

India is the second phase of the tobacco epidemic with nearly one million persons dying due to a very high prevalence of chewing and smokeless tobacco use in the country. Henceforth, The Nicotine replacement therapy (NRT) which came into practice that temporarily replaced the nicotine from tobacco to reduce motivation to consume tobacco and nicotine withdrawal symptoms, thus easing the transition from cigarette smoking to complete abstinence. Various alternatives for nicotine sources (gum, transdermal patch, nasal spray, inhaler and sublingual tablets/lozenges) have been incorporated into tobacco cessation programs (Harini and Leelavathi, 2019).

Studies by (Yen, Chen and Chen, 2007; Aruna *et al.*, 2011; Al-Maweri, Alaizari and Al-Sufyani, 2014) highlighted that the initiation and progression of oral lesions was dependent on the type of tobacco product, duration and the frequency of tobacco use. Studies by (Sujatha, Hebbar and Pai, 2012; Behura, Masthan and Narayanasamy, 2015) remarked a significant association between duration of tobacco use and oral lesions. However few studies(Chandra and Govindraju, 2012; Vallejo *et al.*, 2002; Kaugars *et al.*, 1992; Narasannavar *et al.*, 2014) have attempted to assess the prevalence of oral mucosal lesions, a search of literature revealed scarcity of studies to assess the Effectiveness of Anti- tobacco counselling and presence of oral lesions, and quit rates in patients with oral mucosal lesions. Previously our team had conducted numerous clinical trials (Pratha, Ashwatha Pratha and Prabakar, 2019; Kannan *et al.*, 2017) and lab animal studies and in-vitro studies (Pavithra, Preethi Pavithra and Jayashri, 2019; Mathew *et al.*, 2020; Prabakar, John, I. M. Arumugham, Kumar and Sakthi, 2018; Prabakar, John, I. M. Arumugham, Kumar and Srisakthi, 2018; Khatri *et al.*, 2019; Samuel, Acharya and Rao, 2020; Mohapatra *et al.*, 2019; Prabakar *et al.*, 2020; Kumar, Pradeep Kumar and Preethi, 2017; Neralla *et al.*, 2019; Kumar, Pradeep Kumar and Vijayalakshmi, 2017; Prabakar, John, I. Arumugham, *et al.*, 2018) over the past five years. Now we are focusing on epidemiological surveys. The idea of this survey stemmed from the current interest in our community. Henceforth, the aim of our study is to assess the effectiveness of Anti-tobacco counselling and presence of oral mucosal lesion, and their willingness to quit the habit.

MATERIALS AND METHODS:

Study setting: The present retrospective study was conducted in Saveetha Dental College. Ethical approval was obtained by the Institutional Review Board (IRB) at Saveetha University and the ethical approval number for the study was SDC/SIHEC/2020/DIASDATA/0619-0320. The data was examined by 2 examiners.

Study population: Study population included, the patients who had the habit of tobacco use, between the age group of 18-80 years, visited college during the month of June 2019 to March 2020 and their case sheets were retrieved. The total sample size was 398. Photographic verification was done to cross verify the collected data.

Data Collection: Data regarding tobacco use and oral lesion among 398 patient records was collected . Incomplete data was excluded from the study.

Statistical Analysis: Data was entered into microsoft excel spreadsheet and analysis was done using Statistical Package for Social Science (SPSS) version 23.0. Independent variables were age, gender, number of visits for anti-tobacco counselling and dependent variable was oral lesions. Descriptive statistics were used for data summarization and presentation. Chi-square tests were used for the analysis of association between the study variables. The level of significance was set at a value of P<0.05.

RESULTS AND DISCUSSION:

The present study consists of 398 tobacco users of which all were males (100%). Males of age group 18-30years constitute the maximum of 34.6%, 31-40 years was 26.8%, 41-50 years (19.8%), 51-60 years (13.5%) and >60 years (5%) was shown in figure I. Male predominance was also reported in studies by Saraswathi et al 2006 and Behura et al (Saraswathi *et al.*, 2006; Behura, 2015). This might be due to the fact that several occupations of men require a substantial amount of physical energy and high level of concentration like in case of car drivers with odd working hours. This can be stressful, which in conjunction with peer pressure can lead to the initiation of deleterious oral habits (Sujatha, Hebbar and Pai, 2012).

The presence of lesions was highest among the age group 31 - 40 years which constitute 33.3% followed by 41-50years(26.9%), 18-30years (20.5%), 51-60years(12.8%) and >60 years (6.4%) was shown in figure II. This finding actually opposites with the matches with the analysis of the National Health and Nutrition Examination Survey (NHANES) database which emphasized that the chance of lesion being present increased with age, thus suggested tobacco use in older age as a significant prediction of oral lesion (Rani, 2003).

According to a recent Cochrane review of smoking cessation in teenagers, the interventions with the strongest level of evidence to support them are individual counselling, motivational enhancement and cognitive behavioral therapy (CBT)(Pbert *et al.*, 2015). Focused interventions from physicians, nurses and other HCPs could have a significant impact on smoking cessation rates. For example, HCPs can use motivational enhancement therapy, a variation of motivational intervention, to help teenagers clarify their goals and beliefs related to smoking (Moyer and U.S. Preventive Services Task Force, 2013). The 5 A's method (Ask-Advise-Assess-Assist-Arrange) is the most commonly used framework(Service and US Department of Health & Human Services; Public Health Service, no date) It can be used to guide a brief counselling session and should take no more than 3 minutes to 5 minutes to perform('American Congress of Obstetricians and Gynecologists (ACOG)', 2019). The present study shows that the review visit for anti-tobacco counselling was highest among the age group 18-30years(30.1%) followed by 31-40years (29.1%), 41-50years (21.1%), 51-60 years (15.0%) and >60 (4.5%) was shown in figure III. Figure IV shows the patients with presence of oral lesion have better compliance for review visits(57.7%) than with patients without any oral lesions(48.1%) and was found to be statistically insignificant, p value= 0.165

Figure V shows the patient who came for review visits has the highest willingness to quit habit (62.7%) than patients who came only for intervention visits (37.2%). The patient's unwillingness to quit the habit was highest among those who came only for intervention visits (90.5%) and was found to be statistically significant (p value=0.000). A pilot cross-sectional study done in two states of India (Maharashtra and Bihar) showed that about 33% of the tobacco users intended to quit tobacco (Surani *et al.*, 2012). In a review of GATS, data from 14 countries revealed a strong association between willingness to quit and awareness of antismoking messages in various media (Centers for Disease Control and Prevention (CDC), 2013) Studies done in China and also pilot study from India among tobacco users showed positive results

with anti tobacco messages and willingness to quit (Surani *et al.*, 2012; Yang *et al.*, 2012; Goren *et al.*, 2014; Panda *et al.*, 2014).

A study by (Reddy *et al.*, 2018) which is a country-level GATS analysis also showed that smokers who saw antismoking messages in various media like television, radio, newspaper/magazines, and billboards/hoardings during the past 30 days were willing to quit smoking more than those who did not see. Messages on billboards/hoardings were found to be independently associated in increasing willingness to quit. This calls for increased efforts in repeated advertising of anti tobacco messages and ban pro-tobacco advertisements in various media. Cross-sectional studies done in other countries reported the willingness to quit smoking ranging from 27% to 75% (Abdullah and Yam, 2005; Myung *et al.*, 2012; Yang *et al.*, 2012; Goren *et al.*, 2014). This intercountry variability may be attributed to the different tobacco control programs existing in the respective countries. The difference can also be attributed to the difference in methodologies especially in assessing the time duration for willingness to quit; some studies have operationally defined willingness within the "next six months," whereas others have taken willingness to quit "anytime."

The study has certain limitations where the results cannot be generalized as the sample size was minimal. Another flaw could be information bias, as self reporting by the patients might have led to under reporting of tobacco use.

CONCLUSION:

The present study finding provides information on the association of presence of oral mucosal lesion and the patient compliance for a recall visit for anti-tobacco counselling. It revealed that the patient compliance for recall visits for ATC was highest among those who had oral lesions. It was also noticed that the age group 18-30years had the highest percentage for recall visits for ATC. The study also showed the patient willingness was more among those who came for recall visits.

CONFLICTS OF INTEREST: Nil

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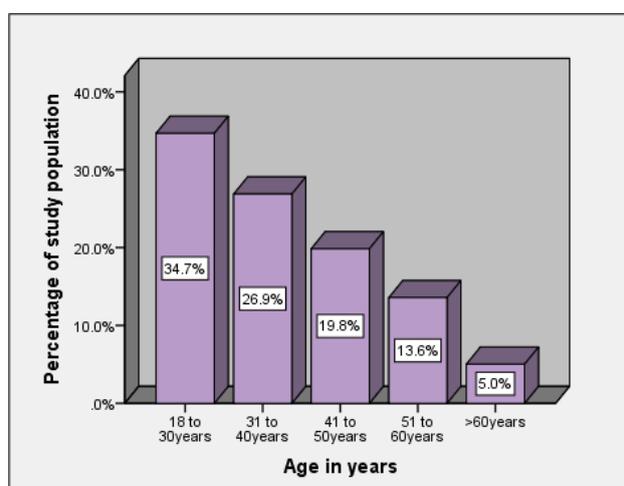
Figure 1: Simple bar chart showing the distribution of age group among the study population. X-axis represents the age groups in years and Y-axis represents the percentage of the age group. Majority of the population were in the age group of 18-30 years (34.7%) followed by 31-40 years which constitute 26.9%,

41-50years years which constitute 19.8%, 51-60 years which constitute 13.6% and >60years which constitute 5.0% of the total study population.
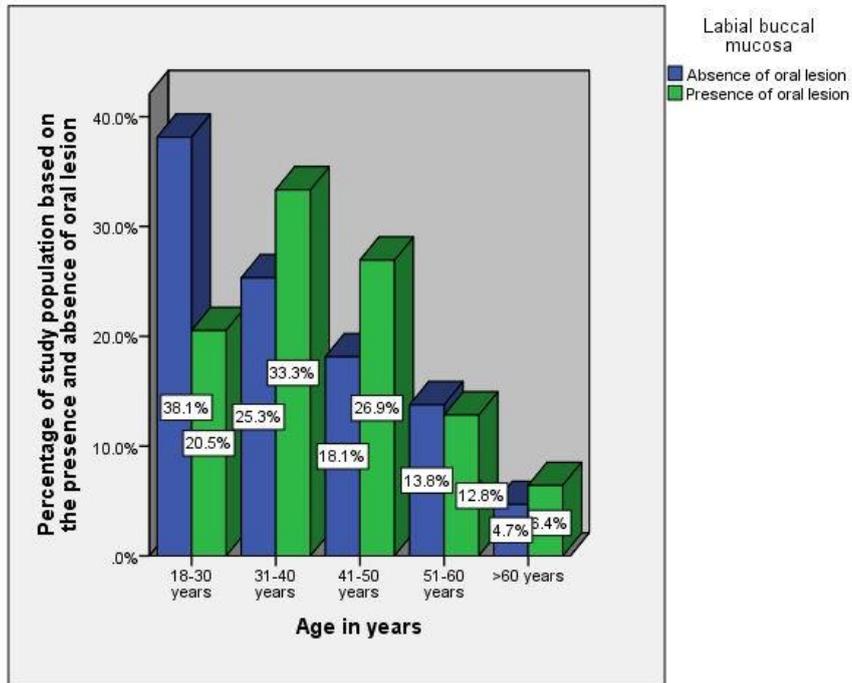

Figure 2: The cluster bar chart shows the distribution of age and presence of oral lesion among the study population. X-axis represents the age groups in years and Y-axis represents the percentage of presence and absence of oral lesions. The presence of lesions was highest among the age group 31 - 40years which constitute 33.3% followed by 41-50 years (26.9%), 18-30 years (20.5%), 51-60 years (12.8%) and >60 years (6.4%).
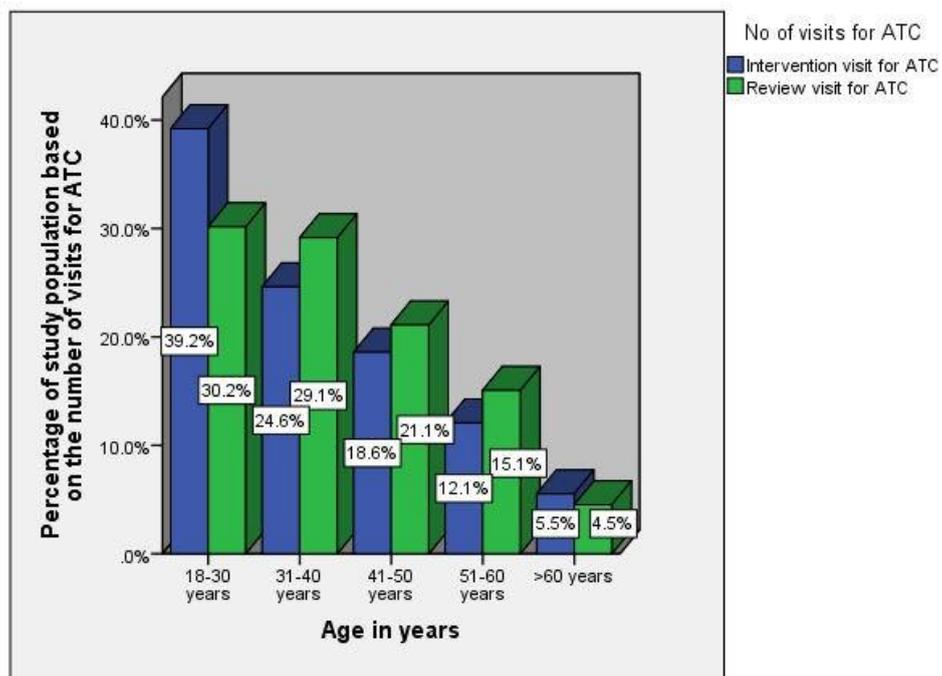

Figure 3: The cluster bar chart shows the distribution of age and number of visits for anti-tobacco counselling among the study population. X-axis represents the age groups in years and Y-axis represents

the percentage of number of visits for anti-tobacco counselling. The review visit was highest among the age group 18-30 years which constitute 30.2% followed by 31-40 years (29.1%), 41-50 years (21.1%), 51-60 years (15.1%) and >60 years (4.5%).
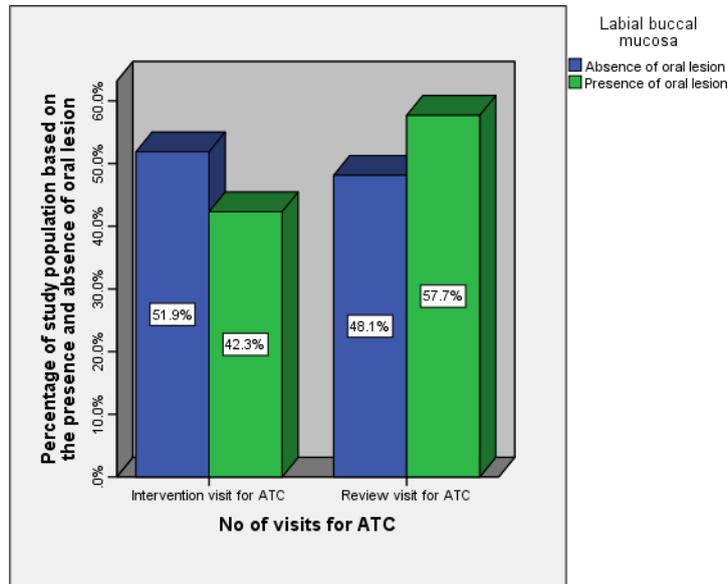

Figure 4: The cluster bar chart shows the association between number of visits for anti-tobacco counselling and the presence of oral lesions among the study population. X-axis represents the number of visits for anti-tobacco counselling and Y axis represents the percentage of presence and absence of oral lesion. The review visit was highest among the patients with oral lesions which constitute 57.7% , a chi square test was done and the association was not statistically significant, implying that there was no significant association between the presence of lesion and compliance towards counselling sessions ($X^2 =$ 2.296 , df = 1, p = 0.165 which is statistically insignificant).
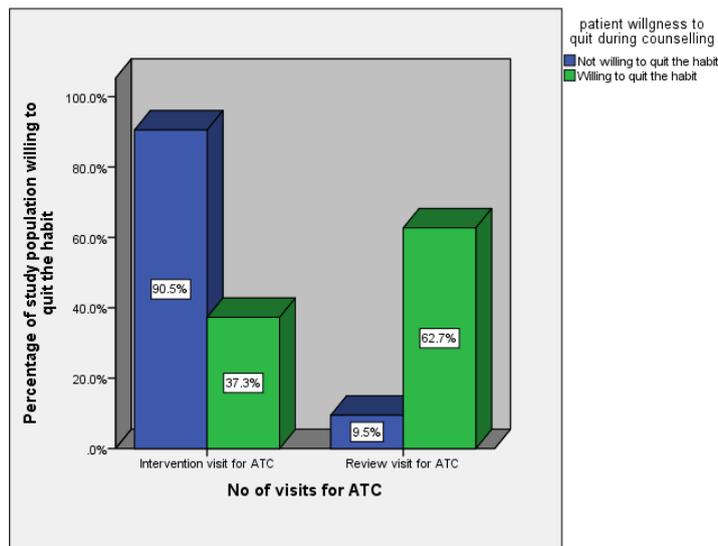

Figure 5: The cluster bar chart shows the comparison between number of visits for anti-tobacco counselling and the willingness of patients to quit the habit among the study population. X-axis represents the number of visits for anti-tobacco counselling and Y axis represents the percentage of patients willing to quit the habit. The willingness to quit the habit was highest among the patients who came for review visits for anti tobacco counselling which constitute 62.7%, a chi square test was done and it was found that

a statistically significant association was found between willingness to quit and number of review visits
(X^2 = 81.978 , df = 1, p = 0.000, statistically significant).s