Prevalence of type of Chewing Tobacco in Tobacco Users in Patients Reported in Private Dental Institution

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ABSTRACT

Tobacco use is one of the leading preventable causes of early death, disease around the world. India has a high prevalence rate of tobacco consumption, both smoking and smokeless forms. There are many types of chewing tobacco such as pan masala, khaini, mawa, snuff, zarda, mishri etc. The aim of this study is to find the prevalence rate of the type of chewing tobacco in tobacco users in patients reported to, Chennai. It's a retrospective cross-sectional study in a university setting. Case records were collected and analysed the data of 41000 patients between June 2019 and March 2020 from the private dental institution. A total of 194 cases were recorded with patients who have a habit of chewing tobacco. The data was tabulated with parameters such as age, gender, type of chewing tobacco and type of habit. Data was then imported to IBM-SPSS v20 for statistical analysis. Descriptive statistics was done for further analysis. Among types of chewing tobacco, pan masala was prevalent (55.7%), with male predilection being 92.3%. The common age group which was seen chewing tobacco was 18-30 years-28.4%, with type of habit being only chewing tobacco-87.1%. Within the limits of the study, prevalence was seen in males with 18-30 age group being the most affected. Pan masala was the most prevalent type of chewing tobacco followed by gutka. As pan and gutka are the most common types used in Chennai, it is more carcinogenic than other types of chewing tobacco and its usage is increasing among the youth. Precautions must be taken such as anti-tobacco intervention to decrease the consumption of tobacco which causes a decrease in chances of cancer formation.

INTRODUCTION

Tobacco use is one of the leading causes of early death and disease, it’s the second major cause of death in the world (Ezzati et al., 2002). Deaths due to consumption of tobacco have been increasing since 2005 and are projected to rise to 8.3 million in 2030 (WHO, 2010).

Smokeless tobacco use is a significant risk in one’s health and increases the chances of getting cancer compared to smoking (Etu et al., 2017). Most
of the smokeless tobacco users are in low or middle income countries (WHO, 2013). Unlike cigarettes, the nicotine in smokeless tobacco is directly absorbed into the body with contact of the mucous membrane. Smokeless tobacco contains over 3000 chemicals in which 28 are known carcinogens (Hoffmann and Djordjevic, 1997). The amount of nicotine absorbed through smokeless tobacco is 3 times that of cigarettes, where 8 to 10 dips is almost equal to 30 to 40 cigarettes per day (Hoffmann and Djordjevic, 1997). Some regions use smokeless tobacco as well as cigarettes causing them a total burden on health (World Health Organization, 2007; Muthukrishnan et al., 2016).

In India, tobacco consumption is responsible for half of the cancer cases (Schultz, 1998; Rani, 2003). India also has one of the huge figures in oral potentially malignant disorders (OPMD) (Muthukrishnan and Kumar, 2017; Maheswari et al., 2018; Venugopal and Maheswari, 2016) which transform to oral cancer if not properly treated which is mostly attributed due to consumption of tobacco mainly chewing tobacco (Dikshit, 2000; Vora et al., 2000; Franceschi et al., 2000; Chaitanya et al., 2017; Dharman and Muthukrishnan, 2016). Prevalence of OPMD has largely been seen in the Indian subcontinent, and have ranged between 0.6/1,000 and 30.2/1,000 (Dionne et al., 2014). Greater prevalence of using smokeless tobacco than smoking tobacco is seen in the Indian subcontinent (Warnakulasuriya and Muthukrishnan, 2018).

Smokeless tobacco is also one of the factors for improper oral hygiene (Subashri and Maheshwari, 2016) which leads to many infections such as periodontitis (Patil et al., 2018), dental caries (Rohini and Kumar, 2017), periodontal problems, tumours not only in the oral cavity, such as hepatocellular carcinoma (Misra et al., 2015). Tobacco chewing indirectly causes root resorption (Choudhury et al., 2015) and osteonecrosis of the jaw (Muthukrishnan et al., 2016). Studies have shown that tobacco interferes with the trigeminal nerve (Holle et al., 2014; Subha and Arvind, 2019). Analgesics such as vitamin C can be used for relieving pain (Chaitanya et al., 2018) which is a short time remedy.

The aim of this study is to find the prevalence of chewing tobacco in tobacco users in patients reported in a private dental institution.

**MATERIALS AND METHODS**

This is an retrospective cross-sectional study under a university- hospital setting. The study was approved by the institution’s review board. Two reviewers were involved in this study. Case records were collected and analysed the data of 41000 patients between June 2019 and March 2020. A total of 194 cases were recorded with patients who have a habit of chewing tobacco. The data collected is tabulated under parameters such as age, gender, type of chewing tobacco, type of habit. Data was then imported to IBM-SPSS v20 for statistical analysis. Descriptive statistics was done for further analysis.

**RESULTS AND DISCUSSION**

In this study, out of 194 patients, males had a higher predilection (n=194, 92.3%) (Figure 1). Most of the studies have shown the same result (Sen and Basu, 2000; Joshi et al., 2010). Sen et al in his study found the prevalence rate of chewing tobacco to be 36% in males and 19% in females (Sen and Basu, 2000). This might be due to the fact that women are culturally reserved and males have been exposed to many factors such as peer pressure (Kapoor et al., 1995).

![Figure 1: Bar chart depicts the frequency distribution of patients using chewing tobacco in male and female.](image)

The age group in which smokeless tobacco was commonly used in this study was 18-30 years (n = 55, 28.4%) which is followed by 41-50 years (n=53, 27.3%) (Figures 2 and 5). Divinakumar et al in his study showed that the 26 -30 years age group was most affected by consumption of chewing tobacco (Divinakumar et al., 2017). Youngsters these days are being addictive to tobacco which causes an increase of cancer chances.

Pan masala was the most common type of chewing tobacco prevalent (n=108, 55.7%), followed by gutka in this study (n=36, 18.6%) (Figures 3 and 5). Joshi et al in his study reported that Mawa and gutka were the predominant forms of chewing tobacco (Joshi et al., 2010). This is due to the fact that each region has a speciality of chewing tobacco. Studies showed that pan masala is a leading cause...
Figure 2: Bar graph showing the frequency distribution of chewing tobacco in different age groups.

Figure 3: Bar graph showing the frequency distribution of types of chewing tobacco.

Figure 4: Bar graph showing the frequency distribution of type of habit.

Figure 5: Bar graph showing the association between age and types of chewing tobacco.

of oral submucous fibrosis that often progresses to oral cancer (Steele et al., 2015). It affects mostly all of the organs and is widely carcinogenic compared to other types of chewing tobacco (Garg et al., 2015).

The type of habits which was seen more was only “chewing tobacco” (n=169, 87.1%) (Figure 4). Previous studies were also in consensus with this result (Joshi et al., 2010; Divinakumar et al., 2017). Some people believe that consumption of smokeless tobacco is less dangerous than cigarettes.

In Figure 1 Blue colour indicates male and green indicates female. X-axis represents gender and Y-axis represents number of patients consuming chewing. Male patients had a higher prevalence of chewing tobacco (92.27%).

In Figure 2 Blue colour indicates 18-30 years, green indicates 31-40 years, black indicates 41-50 years and purple indicates 51 and above years. X-axis represents age groups and Y-axis represents number of patients with chewing tobacco habit. 18-30 years age group patients had a higher prevalence of chewing tobacco (28.35%).

In Figure 3 Blue colour indicates hams, green indicates pan, red indicates gutka, grey indicates snuff, white indicates seral, black indicates tambakoo, orange indicates areca nut and pink indicates mawa. X-axis represents types of chewing tobacco and Y-axis represents number of patients who consumed chewing tobacco. Pan was the most prevalent type of chewing tobacco (55.67%).

In Figure 4 Blue colour indicates chewing tobacco and green indicates smoking and chewing tobacco. X-axis represents type of habit and Y-axis represents number of patients who consumed tobacco. Chewing tobacco was the most prevalent type of habit (87.11%).
In Figure 5 Blue colour indicates 18-30 years, green indicates 31-40 years, black indicates 41-50 years and purple indicates 51 and above years. The X-axis represents the type of chewing tobacco and Y-axis represents the number of patients who consumed chewing tobacco. Chi-square test was done. Chi-square value-30.683, df=21, p=0.79 (p>0.05) which is statistically not significant.

Limitations of the study were, a short sample size and is a single centred study. It doesn’t represent different ethnic groups or populations. Intensity and duration is not analysed due to incomplete data.

CONCLUSIONS

Within the limits of the study, prevalence was seen in males with 18-30 age group being the most affected. Pan masala was the most prevalent type of chewing tobacco followed by gutka. As pan and gutka are the most common types used in chennai, it’s also more carcinogenic and its usage is increasing among the youth. Precautions must be taken such as anti tobacco intervention to decrease the consumption of tobacco which causes a decrease in cancer. This study showed that tobacco usage was also seen in 18 year olds. This means that students should be taught about the harmful effects of tobacco and also anti- tobacco intervention should be done in school and colleges for students under tobacco consumption.

Conflict of interest

The authors declare that they have no conflict of interest for this study.

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