**Research Paper**

# Evaluation of Oral health Status and patterns of Oral diseases in rural population of Uttar Pradesh; Descriptive cross sectional study.

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***ABSTRACT: Introduction:*** *Oral health is an important aspect of overall health status of an individual. Teeth and their supporting structures are of main importance to oral health.[1] Oral health has a significant impact on the quality of life, appearance, and self‑esteem of the people.. Hence, it is essential to combat oral diseases with preventive approach and focus on education and promotion.*
*.**Aim and objectives:** To know the oral health status and pattern of oral diseases among the patients attending the Outdoor Patient Department(OPD) of dentistry All India Institute Of Medical Sciences (AIIMS) Rae Bareli UP. Analysing the correlation of the patients habits, and awareness towards oral health and implementation of oral health programs for the same population.*
***Materials and Methods:*** *This descriptive cross sectional hospital based study was carried out among the patients who attended the Dental OPD from 13 August 2017 to 31st December 2018.*
***Results:*** *Out of the total 2578 patients who attended dental OPD, Periodontal diseases was most prevalent of all dental diseases summing up to 67% of the patients followed by dental decay with 55.09% of the total patients. An important finding to be noted is that 40% patients had habit history and more than 30-35% patients amongst them had altered oral mucosal finding either premalignant condition or lesion Oral Submucous Fibrosis(OSF) being the most common.*
***Conclusion:*** *Rae Bareli Region of Uttar Pradesh needs a strong community based oral health educational and preventive programs to raise awareness related to oral habits amongst the population.*
***KEYWORDS:*** *Oral health diseases, cross-sectional study, Periodontitis,OSF.*

## I. INTRODUCTION:

Oral health is a critical but an overlooked component of overall health and well‑being among children and adults. Oral health problems such as dental caries, periodontitis, and oral cancers are a global health problem in both industrialized and especially in developing countries. [1]

Oral hygiene has been considered as a risk indicator, risk factor, and risk predictor for various oral problems. Access to oral health is a multifaceted concern involving varied barriers, such as failure to afford services and lack of ample services to technological hindrance. [2]

India is predominantly rural, as over 72% of people continue to live in rural areas. [3]

The most basic oral health education and simple interventions like pain relief and emergency care for acute infection and trauma are not available to the vast majority of population, especially in the rural areas. One of the reasons is lack of epidemiological data to identify areas needing oral health care.[4] Estimates from global burden of disease demonstrates that oral diseases affects 3.9 billion people and untreated dental caries (tooth decay) is the most

Prevalent morbid conditions among all diseases. [5] According to National Oral health survey, prevalence of periodontitis was 77% and dental caries was 65% in the population of Uttar Pradesh. [6] In regions where adequate dental manpower is available yet the utilization of oral health care services is low thereby widening the oral health differences across the social

economic classes.[7]

The present paper focuses on oral health status and  the pattern of oral diseases prevalent in the population and implementation of required treatment and oral health programs for the same population.

## II.    METHODOLOGY

**Study design**: The study design was a descriptive cross sectional hospital based study.

**Study participants**: All the patients who visited out patient department of All India Institute Of Medical Sciences (AIIMS) Rae Bareli, U.P  were included in the study.

**Study period:** Start of dental outdoor patient department of AIIMS Rae Bareli i.e. from 13th August  2018 to 31st December 2018.

**Sample size:** A total of 2578 patients who attended the dental outdoor patient department were included in study.

**Data management and statistical analysis:** The data was collected and entered in the Microsoft excel for analysis. Since it was a descriptive study no statistical significance tests were applied.

## III.    RESULTS

The study obtained information from a total of 2578 patients who attended dental OPD. Following are the summation of study results.

**Table 1:**

Describes the distribution of adult male and female patients in Dental OPD. Analysis points towards slight higher percentage of male patients that is 54.9 % and 43.09% of females and   the   paediatric patients constitute around 3% of the total outdoor patient of age group between 0-18 years.

**Table 2:**

Describes the pattern of oral diseases seen in patients attending the OPD of All India Institute Of Medical Sciences (AIIMS). Majority of the patient's i.e 67% were affected with periodontal diseases. Dental caries was second most common disease with 55.09% of population.  A very important finding was amongst those patients with habit history was 40% patients were affected with premalignant lesions.

Rest of the dental problems like Impacted third molars, malocclusions, severe childhood caries, TMJ disorders, cystic lesions, Apthous stomatitis included  0.7% to 1%. Neuralgia's and stress related Burning Mouth syndrome constituted 0.15%-0.38% of the dental diseases and special cases with genetic defects constitutes 0.35%.

**Table 3:**

Describes percentages of list of various pre malignant lesions and conditions amongst those who had habit history OSF being the most common lesion with percentage occurrence 4.36%, leukoplakia 3.68%, hyperplastic candidiasis 3.29%, Smokers Palate 2.32%, Lichen Planus 1.06%, Erythroplakia 0.38% and Oral Squamous Cell Carcinoma 0.002%.

**Figure 1:** Describes the various oral mucosal habit related premalignant lesions that were found in the in patients visiting AIIMS Rae Bareli Dental Outdoor patient.

Out of the total 40% cases of Premaligant diseases (PMDs) OSF (majority being grade 2) constituted 4.36%, ,leukoplakia 3.68%, hyperplastic candidiasis 3.29%,smokers palate:2.32%,lichen planus 1.06% , Erthroplakia 0.38%  and OSCC 0.002%.

## IV.    DISCUSSION:

Oral health has remained an ignored entity and an unrealized, unrecognized issue in the Indian society. It poses a threat globally in terms of the general well-being and providing a good quality of life to an individual. It remains well established that the oral cavity becomes the gateway for many systemic diseases as also the first signs and symptoms of many systemic diseases find their first manifestations in the oral cavity.[8]

An analysis of pattern of disease prevalence and incidence of commonly occurring dental problems and unmet treatment needs provides the basis for measures to improve oral health care in a society.

The present cross-sectional prevalence study aimed to assess the prevalence of various oral health diseases on patients those who visited to the dental OPD, of the AIIMS Rae Bareli. The study reflects a brief summation of the oral health conditions amongst the people in and around Rae Bareli district of Uttar Pradesh and also brings to notice the type of oral health care measures to be adopted to meet the treatment needs of the population.

Taking into account the four months outdoor patient data of the hospital that is 2578 , 55.09% were males and 37.5% were female and paediatric  patients of age group between 0-18years constituted 3% of the whole population.

As per our study analysis a major half of the patients were effected with Periodontitis and gingivitis that is 67% which was in analogy to the report submitted by  by Shah etal  to the National Commission on

Macroeconomics where the results showed the prevalence of periodontal diseases in some form or the other.(either bleeding gums, deep or shallow pocket formation, horizontal or vertical bone loss) in almost 45% of Indian population.[9] In another study by Sood et al in a field survey done in Ludhiana in majority of patients were effected with periodontal diseases with more than round 68% affected with periodontitis.[10] The present study showed similar prevalence of periodontitis as study done by Bansal M et al in Varanasi U.P where the prevalence of periodontitis was 90%.[11]

In present study dental decay accounted to 67.5% which was the second most common findings disease which was very similar to the study done by Shah N etal in Hariyana were caries prevalence was 50.1% to 64% as compared to periodontitis which was 65% to 90%.[12]

A very important finding in the patients of this region had habit history such as smoking, chewing of tobacco/pan masala (mixture of areca nut, lime, catechu, and sweetening, colouring, and flavouring agents, with or without tobacco) and paan [betel leaf (Piper bettle) with areca nut and slaked lime paste]. Out of 40% of patients with habit history, 40% of the patients were affected with oral premalignant conditions. And amongst the premaligant lesions OSF ranked first in its percentage of occurrence.

The result was very similar to the study conducted by Gupta Shalini etal to investigate the premalignant conditions in North Indian States were Uttar Pradesh ranked first in prevalence and OSF being the most common PMD. [7]

The habit posed the maximum risk for OSF, which justifies the highest prevalence of OSF in this region of the country. The risk was an interplay of habit duration and intensity. These habits are very addicting and the users often continue chewing tobacco/pan masala over several years. The length of chewing duration also increases the number of times one chews. There are users in this part of the country who chew tobacco/pan masala continuously during waking hours. The use of smokeless tobacco Pan Parag, zarda, etc.) is on the rise in North India and especially in Uttar Pradesh. Considering the impact of habit duration and intensity, it is not surprising to see a high incidence of oral cancer and OSF in this region. [13]

Malocclusions were found to be 0.3% which was far less than the study done by Garkoti PD et al in which malocclusion was present in 3.01% to total patients.[14] Other oral diseases included TMJ disorders 0.2% (subluxation and disc displacement), Impacted third molars were found to be present in 0.7% Early childhood caries (1%) atypical neuralgias(1.02%), Apthous ulcers(0.7%), cystic lesions(0.5%) genetic defects (Amelogenesis imperfecta, Duchhen muscular Dystrpohy and Downs syndrome)0.5% in accordance with a similar study by Acharya S etal.[5]

## V. CONCLUSION:

Hence it ca be concluded that apart from periodontitis and dental decay occupying the major oral health problem, persistence of risk factors for development of oral cancers cannot be neglected in this region. To prevent or minimize the progression of the disease, more number of oral health care programs should be conducted large scale in the beneficence of the society. Oral health care programs with special focus on cessation of consumption of tobacco products need to be implemented.

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**Table 1: Demographic profile of data**

| Study variable( Adult patients) | Percentage |
|---|---|
| Male | 1392 |
| Female | 1111 |
| Pediatric  (0-18 years) | 75 |

**Table 2: Pattern of Oral Diseases observed in study population**

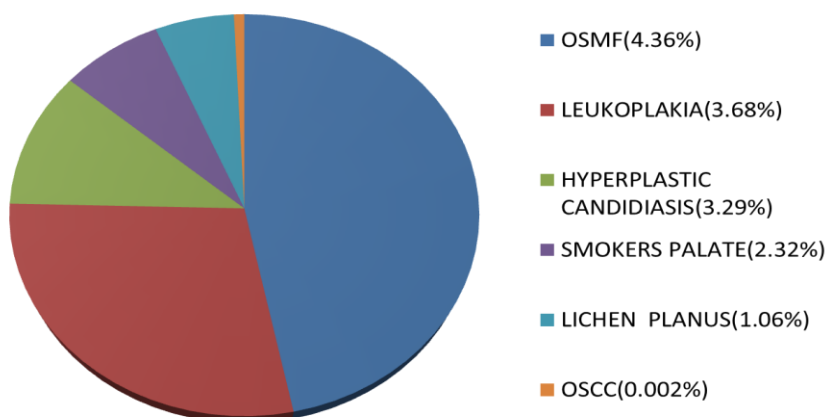| Dental conditions observed in study population: | Number (%)* |
|---|---|
| Gingivitis/Periodontitis | 1727(67%) |
| Dental caries(with and without pulpal involvement) | 1443(55.09%) |
| Premalignant  lesions/Conditions | 421(15.5%) |
| Impacted 3 rd molars | 18(0.7%) |
| Atypical neuralgias | 12(0.5%) |
| Severe early childhood caries | 26(1%) |
| TMJ disorder | 5(0.2%) |
| Malocclusion | 7(0.3%) |
| Aphthous  ulcers | 18(0.7%) |
| Cystic lesions | 12(0.5%) |
| Special cases with genetic defects (Like Amelogenesis imperfecta, DMD, Downs Syndrome.) | 7(0.35%) |

**Table 3: Premalignant lesions and conditions with patients with habit history:**

| Total patients with habit history: | 1031(40%) |
|---|---|
| Premalignant  lesions/Conditions | 421(40.8%) |
| OSF | 45(4.36%) |
| Leukoplakia | 38(3.68%) |
| Hyperplastic Candidiasis (Candidal Leukoplakia) | 34(3.29%) |
| Smokers palate | 24(2.32%) |
| Lichen planus | 11(1.06) |
| Erythroplakia | 4(0.38%) |
| OSCC | 2(0.002%) |

OSF: Oral Submucous Fibrosis

OSCC: Oral Squamous Cell Carcinoma.

**Figure 1:**



- OSMF(4.36%)
- LEUKOPLAKIA(3.68%)
- HYPERPLASTIC CANDIDIASIS(3.29%)
- SMOKERS PALATE(2.32%)
- LICHEN  PLANUS(1.06%)
- OSCC(0.002%)