

## A study on prevalence of oral morbidities in an urban slum of Kishanganj district, Bihar, India.

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### Abstract:

**Background:** Good oral health reflects the overall health status of an individual. Gingivitis and periodontal diseases are the leading causes of oral morbidities. Wide range of factors cause oral morbidities like adopted changes in dietary patterns, lifestyle factors, faulty oral hygiene practices, addiction, neglect and ignorance towards dental hygiene. Few inevitable factors like aging, socioeconomic status also affect oral morbidity.

**Objectives:** To assess the prevalence of oral morbidities and determine the factors associated with it along with providing appropriate health education on related and relevant issues. **Methods:** 110 study subjects were selected by simple random sampling and they were interviewed using a predesigned pretested semi-structured questionnaire. A thorough clinical assessment was also done by an expert. **Results:** The study revealed that 70.9 %, 30.9 % and 36.4% of study subjects had dental caries, periodontitis and bleeding gums respectively. Further 55.6% were addicted to pan, tobacco or smokeless tobacco and 53.6% had habit of sweet/junk food intake and 64.5% had poor oral hygiene practices. Oral morbidities were found to be significantly associated with factors like addiction, poor oral hygiene, intake of sweet/junk foods and age. **Conclusion** – Oral morbidities in various forms are substantially present in the area. Addressing to the causal issues may lead to their decline. However, a larger study with more representative sample is needed.

**Key Words:** oral morbidities, addiction, poor oral hygienic practices.

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### I. Introduction:

It is well known that a good oral health reflects the overall health status of an individual. Unfortunately it has been ignored and neglected for long leading to rise in oral morbidities.<sup>1</sup> These morbidities are not mostly life threatening but cause severe inconvenience and pain and are of serious public health importance.

Infection of oral cavity along with teeth and gingival are very common and they also affect the supporting structures of teeth. Gingivitis and periodontal disease is the leading cause of oral morbidities in 8 to 10% of adult population. Incidence increases with age to as high as 34.5%.<sup>2,3</sup> Dental plaques, dental caries, oral ulcers and oral cancers are also on the rise in recent times. Periodontal disease commonly assessed by Community Periodontal Index by Loe and Silness are majorly classified as gingivitis or periodontitis which is defined as "a group of inflammatory diseases affecting the surrounding tissues that support and anchor the teeth in their sockets."<sup>4,5</sup> Presence of bacterial plaque or calculus on supragingival or subgingival tooth surfaces cause them and they result in severe destruction of gums, alveolar bone and outer layer of tooth root if left untreated.<sup>1,3</sup> Adults suffer from chronic periodontitis whereas aggressive periodontitis is more common in the younger age group.<sup>1,4</sup> Many other diseases have also been accounted with oral morbidities like cardiovascular disease, stroke, diabetes, pre-term and low-birth-weight infants.<sup>5,6,7</sup>

There are wide ranges of factors causing oral morbidities. Adopted changes in dietary patterns like junk foods, sweets, lifestyle factors, faulty oral hygiene practices, addiction, neglect and ignorance towards dental hygiene are few of them. Moreover, few inevitable factors like aging, socioeconomic status also influence the outcome of oral health. Unfortunately, faulty dietary practices and lifestyle factors have a more pronounced effect on urban population.<sup>1,8</sup>

Thus oral self care, as a part of general care, is of paramount importance and plays a pivotal role in preventing oral morbidities. It comprises of change in attitude of people towards oral health, prevention, timely and appropriate diagnosis and professional care seeking as and when required.<sup>8</sup> To improve oral health of population, WHO has set promotion of self-care as one of the goals for the year 2020<sup>9</sup> so that it is practiced widespread.

Thus assessing the status of oral morbidities in a community with a deep insight into their causative factors may pave way for desirable health outcomes on a long run. However there is a scarcity of

epidemiological data on representative urban population. Thus the present study was envisaged in an urban slum of Kishanganj district, Bihar to assess the prevalence of oral morbidities in the area, to find out the various factors associated with them and also for awareness generation and providing appropriate health education on related and relevant identified areas. This would add to the existing database apart from aiding the people of the area for better oral self care in future.

## **II. Materials and Methods:**

A descriptive, cross-sectional study was conducted in an urban slum of Dilawarganj, the urban field practice area of M.G.M Medical College and L.S.K Hospital in Kishanganj, Bihar for a period of three months. Adult population pertaining to the study criteria were included in the study. Permanent residents of the area, willing to participate in the study, who were systemically healthy and had more than 15 teeth, were included in the study. Documented person with mental disorders, pregnant and lactating females, or those who had underwent oral prophylaxis in last six months were excluded from the study. Prevalence of dental caries was taken as 50% (WHO Document), to achieve maximum sample size and non-response rate as 10%, the final sample size was calculated at 110. The study subjects were selected by simple random sampling using lottery method.

A predesigned pretested semi structured validated questionnaire was used and interview method was used to assess the various aspects. Relevant record review was done as and where required. Clinical examination was done by a dental expert and illuminated light source, mouth mirror, CPI Probe and explorer was used for the purpose.

The study subjects, their families and the local people of eminence were sensitised about purpose and benefits of the study after obtaining the required institutional ethical clearance and permission from requisite higher authorities. Informed consent was taken from all the study subjects. Their clinical examination was conducted with help of a dental expert under proper lighting and they were seated upright during the examination. Demographic information was recorded for each subject prior to clinical examination. A thorough clinical assessment was performed according to criteria laid in WHO survey guidelines<sup>4</sup>.

Few operational definitions were used as follows:

- Oral morbidities: Dental caries, periodontitis, bleeding gums, gingivitis, ulcerated lesions, stains, calculus, and halitosis were all taken in purview. Disorders relating to buccal mucosa, palate and base of tongue were not included for operational feasibility.
- Literacy: Over the age of seven years if can read and write with proper understanding.
- Poor oral hygiene: Irregular and improper brushing habits techniques. Brushing with neem stick or toothbrush were both included as brushing.
- Sweet/junk food intake- Excessive intake (more than 5 times/per week in last two months).

## **III. Result:**

A total of 110 subjects were selected pertaining to the study criteria. There were no non-responders. Thus the final study subjects were 110. The results were as follows.

The age range was (58.2 ± 5.48) years. 69.1% of the study subjects were males. All the study subjects had access to health facilities and none of the females were pregnant. 55.5% subjects were literate. The study revealed that 70.9%, 30.9%, 36.4%, 8.2% and a majority of 50% of the study subjects had dental caries, periodontitis, bleeding gums, ulcerated lesions and stains and calculus respectively. The responses were multiple in nature. (Table 1)

Further exploring into the causes, it was found that among the study subjects, 55.6% were addicted to either pan, tobacco or smokeless tobacco and 53.6% had habit of sweet/junk food intake. Poor oral hygiene practices like irregular and improper brushing habits, techniques were noted in 64.5% cases. 17.3% cases had documented history of drug intake, like tetracycline or phenytoin within last three years. Record review revealed 45.4% study subjects to be affected with diabetes, 28.2% with atherosclerosis and 24.5% with both the conditions simultaneously.

Various factors were studied which could play a causal part in oral morbidities. Using a Chi-Square test, it was inferred that oral morbidities were significantly associated with addiction ( $p = 0.00$ ), poor oral hygiene ( $p = 0.013$ ), intake of sweet/junk foods ( $p = 0.00$ ), and with age ( $p = 0.00$ ). Elderly age group (those more than 60 years) reported more oral morbidities. However there was no significant association noted with the maximum literacy status of the study subjects ( $p = 0.75$ ). (Table 2)

Their knowledge regarding oral morbidities was assessed and 74.6% were not aware about the ill effects of oral morbidities or their prevention and treatment. However only 24.9% subjects practiced oral self care practices and only 19.3% took oral health problems as a cause of seeking professional care.

#### **IV. Discussion**

Though the findings of 110 selected study subjects is not comparable to studies on a larger scale, however the findings of various studies were similar to the present study.

A study by Chauhan D et al, revealed overall prevalence of gingival diseases was 22.9%, whereas in Kerala another study found prevalence of gingival disease to be 15% .<sup>10</sup>

Moreover, Greene in India reported overt evidence periodontal diseases to be 90% among 11to17-year old subject with low socioeconomic status being the main cause.<sup>11</sup> Interestingly, high prevalence of gingivitis (84.37%) was found by Dhar et al and another study in Maharashtra (81%).<sup>5, 6</sup> Lack of appropriate knowledge and hygienic practices along with negligent attitude toward oral hygiene were attributed as the main cause similar to the present study.<sup>1</sup> A study done by WHO in Pondicherry found percentage of dental caries to vary from 73.3% among (35-44) years to 55.6% among (65-74)years. The high prevalence of caries in this rural region was attributed to poor oral hygiene and low awareness.<sup>12</sup>

Similar to the present study, another study also found prevalence of gingival diseases to be significantly associated with age. In striking contrast, another study concluded decrease in prevalence of gingivitis with the increasing age, due to increased knowledge of appropriate brushing techniques with age.<sup>1</sup>

Tobacco use was found to be a significant factor in causing poor oral hygiene similar to the present study. Many studies have implicated smokeless tobacco use as a risk factor for the development of oral mucosal problems and tumors. A study revealed that higher prevalence of leukoplakia, erythroplakia and abnormal soft tissue growth among smokeless tobacco user than the non tobacco users were an added epidemiological evidence of oral effects of smokeless tobacco use.<sup>13</sup>

A study found prevalence of smokeless tobacco use to be 52.7%, a finding similar to the present study. Adults attending family practice clinics in Karachi, Pakistan and sports athletes in United States of America also have more than half the population indulging in tobacco use. It is however less in African countries.

In contrast to the present study, another study found poor literacy status to be significantly affecting the oral hygiene, may be due to lack of awareness and appropriate knowledge on oral self care.

#### **V. Conclusion:**

The study concluded that majority of people suffered from oral morbidities in form of dental caries, bleeding gums, stains and calculus. They constitute a substantial amount of oral burden in the study area as well. Moreover, majority of the population were found to be addicted and suffering from poor oral hygiene due to various factors. Addressing these issues in form of awareness generation is of utmost importance to ensure optimum utilization of the health services for effective health outcomes.

#### **VI. Recommendation:**

Proper oral hygiene education and designing effective and appropriate community friendly strategies may lead to optimum utilization of the services and favourable health indicators. Behaviour and action oriented programs are critical and play a pivotal role in preventing oral morbidities at all stages.<sup>1</sup> Addiction needs to be strongly discouraged through both legal approach and by awareness generation, interpersonal communication , counselling and motivation.IEC materials and health education tools on related and relevant issues also play a defining role. However a larger study with a more representative sample is needed.

#### **VII. Limitation**

Though imperative, it was beyond the scope of the study to check for fluoride levels in water due to logistic and human resource constraints.

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**Tables:**

**Table 1: Table showing the prevalence of various oral morbidities (n = 110)**

Oral Morbidities*	Number (N)	Percentage (%)
1.Dental Caries	78	70.9
2.Periodontitis	34	30.9
3.Bleeding gums	40	36.4
4.Ulcerated lesions	9	08.2
6.Stains and Calculus	55	50.0

\*Multiple responses

**Table 2: Table showing association of oral morbidities with the various factors (n = 110)**

Factors	Oral Morbidity Present	Oral Morbidity Absent	Chi square value	P value ,significance
Addiction	52	9	13.64	0.00, significant
Poor oral hygiene	56	15	06.16	0.00, significant
Sweet/junk food intake	49	10	17.43	0.00,significant
60 yrs. and above	48	11	14.23	0.00,significant
Literate	44	17	0.10	0.75, not significant