

Prevalence of Gingivitis Among The Patients Visiting Dental OPD of Dhulikhel Hospital

Bimala Dhakal¹, Dr Manoj Humagain², Dr Dashrath Kafle³

¹Dental Hygienist, ²Associate Professor, ³ Assistant Professor, ^{1,2}Department of Periodontics,

³Department of Orthodontics

Kathmandu University School of Medical Sciences

ABSTRACT

Objective: To determine the prevalence of gingivitis the patients visiting Dental OPD of Dhulikhel Hospital.

Materials and Methods: A sample of 100 subjects was randomly selected from subjects escorting out-patients attending a Dhulikhel Hospital. A brief history about the brushing habit was taken and the full mouth gingival examination was performed. Data collection was done through full mouth examination of gingiva and the gingival index score was assigned as criteria of Loe and Silness. Collected data was analyzed by using software SPSS 16.

Results: Gingivitis was more frequent among females than males and the prevalence increased with age. About 62% had mild gingivitis, 33% had moderate gingivitis and 5% had severe gingivitis.

Conclusions: This is the first study to report on the prevalence of gingivitis in Nepal. Although the results of our study demonstrate higher prevalence of gingivitis in Nepalese adult, larger study with greater sample size is required to elucidate this finding.

INTRODUCTION

Gingivitis, swelling of gum, is the mildest form of periodontal disease. It causes the gums to become red, swollen, and bleed easily. There is usually little or no discomfort at this stage. Gingivitis is primarily caused by inadequate oral hygiene and is reversible with professional treatment and good oral home care. Factors that may contribute to gingivitis include, diabetes, smoking, aging, genetic predisposition, systemic diseases and conditions, stress, inadequate nutrition, puberty, hormonal fluctuations, pregnancy, substance abuse, HIV infection, and certain medication use¹.

Untreated gingivitis can advance to periodontitis. With time, plaque can spread and grow below the gum line. Toxins produced by the bacteria in plaque irritate the gums. The toxins stimulate a chronic inflammatory

response in which the body in essence turns on itself and the tissues and bone that support the teeth are broken down and destroyed. Gums separate from the teeth, forming pockets (spaces between the teeth and gums) that become infected. As the disease progresses, the pockets deepen and more gum tissue and bone are destroyed. Often, this destructive process has very mild symptoms. Eventually, teeth can become loose and may have to be removed².

Despite great achievements in oral health of populations globally, problems still remain in many communities all over the world - particularly among under-privileged groups in developed and developing countries. Dental caries and periodontal diseases have historically been considered the most important global oral health burdens. At present, the distribution and severity of oral diseases vary among different

Correspondence: *Dr. Manoj Humagain*; e-mail: *mhumagain@hotmail.com*

parts of the world and within the same country or region. The significant role of socio-behavioral and environmental factors in oral disease and health is evidenced in an extensive number of epidemiological surveys. The prevalence of gingivitis varies by race/ethnicity and gender. Approximately 31% of Nepali age 35-44 years surveyed in a study had developed deep periodontal pockets which is advanced form of gingiva. This ranks Nepal as one of the top 15% of the countries in the world where this age group suffers from deep periodontal pocketing³. However, there are limited studies done on Nepalese population about the prevalence of gingivitis.

According to oral health facts (WHO), the most common oral diseases are dental decay and periodontal (gum) disease⁴. Worldwide, 60-90% of school children have dental cavities. Similarly, severe periodontal (gum) disease, which may result in tooth loss, is found in 5-20% of middle-aged adults, and the rate varies across geographical regions⁴. According to the Nepal national pathfinder survey 2004, it was found that the prevalence of dental decay is low in adolescents who are studying in school (i.e., 25.6% for 12- to 13-year-olds and 25.6% for 15- to 16-year-olds). The probable reason for this is the use of fluoridated toothpaste. However, periodontal problems (especially gingivitis and calculus) in adolescence are high (i.e., 62.8% for 12 to 13 years and 61% for 15 to 16 years)³. This signifies, Nepalese are also not beyond oral health problems.

Oral health is the worldwide problem especially in Asia and Latin American countries. The burden of periodontal problems are more commonly found to be in adolescents which are either the result of poor oral hygiene or habit like tobacco use and alcohol consumption. Nepal is not exception to this problem. Despite, the dental caries low among the adolescents but the periodontal problem is high which entirely depends on oral habits. After the all research done in Nepal, little is known about the gingival health in Nepalese especially in adolescents. Although this is a small scale study,

it will provide baseline information about prevalence of gingivitis among the patient visiting dental OPD of Dhulikhel hospital.

METHODS

This is a descriptive cross sectional study conducted at Dental OPD of Kathmandu University Hospital-Dhulikhel Hospital, Kavre, Nepal over a period of 2 months from January 2015 to March 2015. 100 patients who visited to the Oral Medicine department were randomly recruited for the study after taking written consent from all the participants. Patients who were not interested to participate on this study, pregnant females and patients who were diagnosed case of periodontal diseases were excluded from the study. Data was collected in a pre- designed performa. Gingival condition was recorded using the Gingival index as proposed by Loe and Sillness in 1963⁵. All the measurements were done by single examiner to avoid inter examiner variation. Collected data was analyzed by using SPSS version 16.0.

RESULTS

Of the total 100 patients examined, 46 were male and 54 were female participants. Among them 65.22 % male and 38.89 % of females had the gingival inflammation (Table 1). Similarly 30 % of the total participants had bleeding on probing. Among those patients in which bleeding on probing was present 53% were male and 47% were female (Table 2). Among the total sample the prevalence of mild, moderate and severe gingivitis was 62%, 33% and 5% respectively. However, percentage of females having mild gingivitis was comparatively higher than the males (66.66% Vs 56.52 %). Though the total prevalence of severe gingivitis was very less, it was found to be slightly higher in females (5.55%) then males (4.35%) (Table 3).

Table 1: Gender-wise distribution of gingival inflammation

Sex	Absent	Present	Total
Male	16	30	46
Female	33	21	54
Total	49	51	100

Table 2: Gender-wise distribution of Bleeding on Probing

Sex	Absent	Present	Total
Male	30	16	46
Female	40	14	54
Total	70	30	100

Table 3. Severity of gingivitis according to gender

Sex	Mild Gingivitis	Percentage	Moderate Gingivitis	Percentage	Severe Gingivitis	Percentage	Total
Male	26	56.52	18	31.13	2	4.35	46
Female	36	66.66	15	27.78	3	5.55	54
Total	62	62	33	33	5	5	100

DISCUSSION

This is the first study reporting the prevalence and severity of gingivitis among Nepalese adults. Among the study sample 65.22 % male and 38.89 % of females had the gingival inflammation. Similar finding was seen in the study done by Majdy M et al in Saudi population⁶. In this study prevalence of subjects with gingival bleeding on probing was 30 %, which is similar to the finding of Majdy et al, on which they found it 28.8%⁶. Among those who had bleeding on probing, it was slightly more among the males as compared to female (53% and 47 % respectively). This finding is in consistent with findings of the Saudi study⁶, however it contradicts with a similar study done in Australian adults on which they found greater prevalence of bleeding on probing on females as compared to the males⁷.

Among the total sample the prevalence of mild, moderate and severe gingivitis was 62%, 33% and 5% respectively. However, percentage of females having mild gingivitis was comparatively higher than the males (66.66% Vs 56.52 %). Though the total prevalence of severe gingivitis was very less, it was found to be

slightly higher in females (5.55%) than males (4.35%). Similar result was seen in a study done in American population⁸. However no significant difference among the male and female was seen in a Chinese study on prevalence and severity of gingival diseases⁹. Higher severity of gingivitis could be attributed to females due to the female sex hormones. The overall prevalence of gingivitis was found to be 82 %, which is consistent with the National pathfinder survey³ and other similar studies done in India¹⁰, Joardan¹¹ and Nigeria²¹.

CONCLUSION

This is the first study to report on the prevalence of gingivitis in Nepal. Although the result of our study demonstrates higher prevalence of gingivitis in Nepalese adult, larger study with greater sample size is required to elucidate this finding.

REFERENCES

1. Page RC. Current understanding of the aetiology and progression of periodontal disease. *International Dental Journal*. 1986, Sep;36(3):153-61.
2. Pihlstrom BL, Michalowicz BS, Johnson NW. Periodontal diseases. *Lancet* 2005; 366(9499): 1809-1820.
3. National Oral health pathfinder Survey Report 2004, Ministry of Health, Nepal Government.
4. Stalla Y, Kwan L et al. Health-promoting schools: an opportunity for oral health promotion 2005; 85: 677.
5. Peter S. *Essentials of Public Health Dentistry*. 5th ed. Arya Medi Publishing 2013.
6. Majdy M, Saleh N, Omar B. Prevalence and severity of plaque-induced gingivitis in a Saudi adult population. *Saudi Med J* 2014; 35(11): 1373-13-77.
7. Australian Research Centre for Population Oral Health, The University of Adelaide, South Australia. Periodontal diseases in the Australian adult population. *Aust Dent J*. 2009;54:390–393.
8. Li Y, Lee S, Hujoel P, Su M, Zhang W, Kim J, Zhang YP, DeVizio W. Prevalence and severity of gingivitis in American adults. *Am J Dent*. 2010 Feb;23(1):9-13.
9. Zhang J, Xuan D, Fan W, Zhang X, Dibart S, DeVizio W, Panagakos F, Zhang YP. Severity and prevalence of plaque-induced gingivitis in the Chinese population. *CompendContinEduc Dent*. 2010 Oct;31(8):624-9
10. Shaju JP, Jade RM, Das M. Prevalence of periodontitis in the Indian population: A literature review. *J Indian SocPeriodontol*. 2011 Jan;15(1):29-34.
11. Khansa A, Zafer AH, Yousef SK. Prevalence and risk indicators of gingivitis and Periodontitis in a Multi- Centre study in North Jordan. *BMC Oral Health* 2012.12;1
12. Umoh AO, Azodo CC. Prevalence of gingivitis and periodontitis in an adult male population in Nigeria. *Nigerian Journal of Basic and Clinical Science* 2014; 9 (2): 65-69.