ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com
Journal DOI: 10.21474/IJAR01

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

PERIODONTAL DISEASE AMONG THE GAROS OF WEST GARO HILLS DISTRICT IN MEGHALAYA, INDIA.

D.K. Limbu, *Letminthang Khongsai and Pynkupbor Khongjirem.
Department of Anthropology, North-Eastern Hill University, Shillong , Meghalaya, India.

Manuscript Info

Manuscript History:

Received: 15 May 2016
Final Accepted: 13 June 2016
Published Online: July 2016

Key words:
Garo, periodontal disease, periodontal index, West Garo Hills.

Corresponding Author

Letminthang Khongsai.

Abstract

The objective of the present study was to assess the prevalence of periodontal disease according the age and sex among the Garos of West Garo Hills district, Meghalaya. Data pertaining to periodontal disease was obtained from a total of 202 individuals consisting of 98 males and 104 females between the ages 5 and 59 years through oral examination. The results showed that the incidence of healthy gums decreased as the age increases. On the other hand, the prevalence of periodontal disease increased with the increase in age. A sex-wise analysis revealed that Garo females recorded better dental health than their male counterparts. Beginning of destructive periodontal disease (PI score 0.7-1.9) was the most prevalent dental diseases in both males (27.55%) and females (26.92%). Further, there was no record of terminal stage of periodontal disease (PI score 3.8-8.0) in this population.

Introduction:-

Periodontal disease is the most common dental condition in adults, and is also one of the most common chronic inflammatory diseases affecting a majority of the population throughout the world (Gu and Ryan, 2010). Periodontal diseases, including gingivitis and periodontitis can affect one tooth or many teeth, and if left untreated, can lead to tooth loss. Therefore, timely treatment of periodontal problems is important to preserve the dentition and overall health of the oral cavity (Marsh and Bradshaw, 1995). Studies conducted over the last decade in India have shown that periodontal diseases affect more than 50% of the population (Agarwal et al., 2010). It is responsible for most of the tooth loss in adults (Genco and Williams, 2010). Several studies have also reported that there are variations in the prevalence of periodontal disease among males and females (Rao et al., 1993; Joseph and Cherry, 1996; Grewal et al., 2014).

The objective of the present study was to assess the prevalence of periodontal disease according to age and sex among the Garos of West Garo Hills district in Meghalaya, India.

Materials and Methods:-

The present study was based on a cross-sectional study among the Garos of West Garo Hills district in Meghalaya, India. A total of 202 individuals consisting of 98 males and 104 females between the ages 5 and 59 years were orally examined during the year 2015. The individuals were distributed over 4 age groups with the age class interval of 10 years excepting for the highest age group (35-59 years) due to small sample size. Information regarding periodontal disease such as bleeding of gums, loosening of gums, swollen gums with or without pain and drifting of tooth from original place were taken into consideration. The observation was made with the aid of a dental spatula, a torch light and a dental mirror in sufficient day light. Each tooth was checked for periodontal disease and was then recorded.

The Periodontal Index (PI) score developed by Russel (1956) was used to find out the prevalence of periodontal disease. According to Russel's classification, individuals registering a mean PI score of 0-0.2 have clinically normal supportive tissues. Individuals with simple gingivitis usually register a PI score of 0.3-0.9. Individuals with beginning of destructive periodontal disease usually score a range of 0.7-1.9. A PI score of 1.6-5.0 include those

individuals with established destructive periodontal disease. Individuals with terminal stage of periodontal disease should register a PI score of 3.8-8.0.

Results and Discussion:-

Table 1 represents the distribution of sample according to age and sex. There were altogether 202 subjects out of which 98 (48.51%) were males and 104 (51.49%) were females. There was variation in the distribution of subjects among all age groups in both the sexes. Among males, the age group 15-24 years recorded the highest (37.76%) followed by 5-14 years (36.73%), 35-59 years (17.35%) and 25-34 years (8.16%). However, the percentage of female decreases as the age increases ranging from 29.80% in the age group 5-14 years to 28.85%, 22.12% and 19.23% in the age groups 15-24 years, 25-34 years and 35-59 years respectively. Pooling together both males and females, the highest belongs to the age groups 5-14 years and 15-24 years recording 33.17% each. There were 15.34% sample in the age group 25-34 years and 18.32% in the age group 35-59 years.

Table 1:- Distribution of sample according to age and sex.

Age group (years)	Male	Female	Total
5-14	36 (36.73)	31 (29.80)	67 (33.17)
15-24	37 (37.76)	30 (28.85)	67 (33.17)
25-34	8 (8.16)	23 (22.12)	31 (15.34)
35-59	17 (17.35)	20 (19.23)	37 (18.32)
Total	98 (48.51)	104 (51.49)	202 (100.00)

Table 2:- Prevalence of periodontal disease in permanent teeth by age group.

Age group (years)	Periodontal Index Score				
	0-0.2	0.3-0.9	0.7-1.9	1.6-5.0	3.8-8.0
5-14	100.00	0.00	0.00	0.00	0.00
15-24	74.62	7.46	17.91	0.00	0.00
25-34	38.71	9.67	48.39	3.23	0.00
35-59	8.11	8.11	75.67	8.11	0.00

The prevalence of periodontal disease in permanent teeth by age group of the Garos is given in Table 2. It is seen that there was no incident of periodontal disease in the lowest age group, i.e. 5-14 years. In other words, all the individuals in this age group had healthy gum or normal supportive tissue (PI score 0-0.2) registering a huge difference from the highest age group (35-59 years). The prevalence of normal gingival tissue declined from 100.00% in the age group 5-14 years to 74.62% in the age group 15-24 years, 38.71% in the age group 25-34 years and only 8.11% in the age group 35-59 years. The prevalence of simple gingivitis registering a PI score of 0.3-0.9 was recorded highest in the age group 25-34 years (9.67%) followed by 35-59 years (8.11%) and 15-24 years (7.46%). Beginning of destructive periodontal disease (PI score 0.7-1.9) was the most prominent dental disease among all age groups barring the lowest. The incidence of beginning of destructive periodontal disease increased with the increase of age ranging from 17.91% in the age group 15-24 years to 48.39% and 75.67% in the age groups 25-34 years and 35-59 years respectively. However, the prevalence of established destructive periodontal disease (PI score 1.6-5.0) was recorded only in the higher age groups with 3.23% in the age group 25-34 years and 8.11% in the age group 35-59 years. There was no record of terminal stage of periodontal disease (PI score 3.8-8.0) in this population.

The present study confirms the previous report of Gill and Prasad (1968) that younger age group have comparatively lesser percentage of gingivitis and periodontitis. Similarly, several studies have also reported that the severity of periodontal disease increase as the age increases (Bhowate et al., 1994; Goel et al., 2000; Das et al., 2009; Singh, 2014). Habits like smoking, pan with tobacco chewing is shown to be a significant risk factor for more prevalence of periodontal diseases (Joseph and Cherry, 1996; Christensen et al., 2003; Sumanth et al., 2008; Parmar et al., 2009). Majority of the Garo people have the habits of drinking liquor, smoking and chewing of betel-nut (Miah, 2012). It is, therefore, assumed that habits like drinking of liquor, smoking and chewing of betel-nut are the important factors causing higher incidence of periodontal disease among the higher age groups.

Table 3:- Prevalence of periodontal disease in permanent teeth by sex.

Sex	Periodontal Index Score				
	0-0.2	0.3-0.9	0.7-1.9	1.6-5.0	3.8-8.0
Male	64.28	5.10	27.55	3.06	0.00
Female	66.34	5.77	26.92	0.96	0.00

Table 3 revealed that the percentage frequency of normal supportive tissue (PI score 0-0.2) was slightly higher in females (66.34%) than males (64.28%). The most common dental disease was beginning of destructive periodontal disease (PI score 0.7-1.9) in both males (27.55%) and females (26.92%). The prevalence of simple gingivitis (PI score 0.3-0.9) was very close in both males (5.10%) and females (5.77%). However, males recorded higher percentage of established destructive periodontal disease (PI score 1.6-5.0) with 3.06% as compared to their female counterparts with 0.96%. It was also observed that the incidence of terminal stage of periodontal disease (PI score 3.8-8.0) was found absent in both the sexes of the Garos.

Corresponding to the present study, a number of studies have shown that females have better periodontal health than their male counterparts (Rao et al., 1993; Joseph and Cherry, 1996). In other words, the prevalence of periodontal disease is observed to be higher in males than in females (Grewal et al., 2014). As mentioned earlier, majority of the Garos have the habits of smoking and drinking liquor apart from chewing of betel-nut. These habits, especially drinking of liquor and smoking are the common practice of males that may have increased the risk of dental problem among them as compared to their female counterparts.

Conclusion:-

The present study has highlighted the age and sex-wise prevalence of periodontal disease among the Garos of West Garo Hills district in Meghalaya. It may be concluded that the prevalence of periodontal disease increased with the increase of age. Beginning of destructive periodontal disease was the most prominent dental disease in both males and females. The prevalence of periodontal disease was found to be higher in males as compared to their female counterparts.

References:-

1. Agarwal, V., Khatri, M., Singh, G., Gupta, G., Marya, C.M. and Kumar, V. (2010): Prevalence of periodontal diseases in India. J Oral Health Comm Dent, 4(Spl): 7-16.
2. Bhowate, R.R., Borle, S.R., Chinchkhede, D.H. and Gondhalekar, R.V. (1994): Dental health amongst 11-15-year-old children in Sevagram, Maharashtra. Indian J Dent Res, 5(2): 65-68.
3. Christensen, L.B., Petersen, P.E. and Bhambal, A. (2003). Oral health and oral health behaviour among 11-13-year-olds in Bhopal, India. Community Dent Health, 20(3): 153-58.
4. Das, U.M., Beena, J.P. and Azher, U. (2009): Oral health status of 6- and 12-year old school going children in Bangalore city: An epidemiological study. J Indian Soc Pedod Prev Dent, 27(1):6-8.
5. Genco, R.J. and Williams, R.C. (2010): Periodontal Disease and Overall Health: A Clinician's Guide. Pennsylvania: Professional Audience Communications, Inc.: 1-4.
6. Gill, P.S. and Prasad, B.G. (1968): Health status of primary school children in rural area of Lucknow. Ind Jour Ped, 35: 314.
7. Goel, P., Sequeira, P. and Peter, S. (2000): Prevalence of dental disease amongst 5-6 and 12-13 year old school children of Puttur municipality, Karnataka State-India. J Indian Soc Pedod Prev Dent, 18(1):11-17.
8. Grewal, Y., Datta, R., Singh, K., Singh, G., Singh, S. and Kaur, P. (2014): Prevalence of periodontal disease in the rural population of Punjab. J Pharm Biomed Sci, 4(6): 532- 35.
9. Gu, Y. and Ryan, M.E. (2010): Overview of Periodontal Disease: Causes, Pathogenesis, and Characteristics. In: Genco RJ, and Williams RC, (eds.) Periodontal Disease and Overall Health: A Clinician's Guide. Pennsylvania: Professional Audience Communications, Inc.: 5-23.
10. Joseph, P.A. and Cherry, R.T. (1996). Periodontal treatment needs in patients attending dental college hospital, Trivandrum. J Indian Soc Periodontol, 20(3): 67-71.
11. Marsh, P.D. and Bradshaw, D.J. (1995). Dental plaque as a biofilm. J Ind Microbiol, 15(3): 169-75.
12. Miah, S. (2012): Society and culture of the Garo's in Meghalaya. IJCAES Special Issue on Basic, Applied and Social Sciences, II: 376- 78.
13. Parmar, G., Sangwan, P., Vashi, P., Kulkarni, P. and Kumar, S. (2009). Effect of chewing a mixture of areca nut and tobacco on periodontal tissues and oral hygiene status. J. Oral Sci., 50(1): 57-62.

14. Rao, S., Homagain, S. and Singh, B.P. (1993). Periodontal status & treatment needs of an adult rural community. J. Pierre Fauchard Acad., 7(2): 72-78.
15. Russel, A.L. (1956). A system of classification and scoring for prevalence surveys of periodontal disease. J. Dent. Res., 35: 350-59.
16. Singh, A.K. (2014). Prevalence of gingivitis and periodontitis among schools children in Lucknow region of Uttar Pradesh, India. IOSR-JDMS, 13(7): 21-23.
17. Sumanth, S., Bhat, K.M. and Bhat, G.S. (2008). Periodontal health status in pan chewers with or without the use of tobacco. Oral Health Prev. Dent., 6(3): 223-29.