Dental caries and periodontal disease prevalence and oral hygiene practices among Chepang female of Nepal

Reema Joshi Pradhan[1], Sijan Poudyal[2], Ramsudhan Lamichhane[3], Ujjwal Joshi[4]

[1]Conservative Dentistry and Endodontics, National Academy of Medical Sciences, Kathmandu
[2]Community Dentistry, Kist Medical College and hospital, Gwarko, Lalitpur
[3]Oral Pathology, Kist Medical College and hospital, Gwarko, Lalitpur
[4]Oral medicine and radiology, Kathmandu Medical College, Sinamangal, Kathmandu

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ABSTRACT

Aim: To explore the dental caries and periodontal disease and oral hygiene practice among the females in Chepang ethnic group.

Methods: Questionnaire were developed regarding socio-behavioral aspects in the prevention and control of dental caries and periodontal diseases at an individual and population level; and mechanical and chemical plaque control in the simultaneous management of gingivitis and dental caries. Data were collected and analyzed.

Results: Total 104 female patients were interviewed with their mean age of 30.1±12.7 (range: 11-70) years. 85.6% showed the regular brushing and 96.2% used the tooth brush and paste. 79% of the female brushes twice daily. Periodontal index and DMFT index showed good results.

Conclusions: Despite of tooth brushing practice the prevalence of periodontal disease and DMFT were significant. This could be associated with many other factors. Education and motivation of the population is required to improve the oral hygiene, oral hygiene measures and to refrain from habits.

Keywords: Caries, Chepang female, DMFT, Periodontal Index

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INTRODUCTION

Oral health is an important aspect of general health. Poor oral health can have several detrimental effects on a woman's health across her life span.[1] The treatments of oral diseases are costlier and require highly trained personnel. It is well known that the two major oral diseases namely dental caries and periodontal diseases are preventable.

Dental caries is a ubiquitous process defined as the result of a localized chemical dissolution of the tooth surface caused by acid production by the dental biofilm (dental plaque) exposed frequently to sugars.[2] Periodontal diseases (gingivitis and periodontitis) are inflammatory diseases of microbial origin which may associated with an inappropriate and destructive inflammatory immune response.[3]

Many of the developing countries with less water fluoridation and availability of sugary food has shown many dental problems in compare to developed countries[4] where many of the school children with high incidence of caries and middle aged with periodontal diseases.[5] The concept of group of individuals being at high-risk or of different susceptibility to periodontal destruction and dental caries has recently attained considerable attention.[6]

Nepal is a country with diverse population with different sociocultural backgrounds. The Chepang community in the Chitwan district of Nepal belongs to one of the most disadvantaged ethnic community with total population of 52,000. Accessibility of these people to general medical and dental care is minimal.[7]

The aim of this study is to know the level of dental caries and periodontal diseases in woman residing in

CORRESPONDENCE

Dr Reema Joshi Pradhan
Conservative Dentistry and Endodontics, National Academy of Medical Sciences, Kathmandu
Email: drreemapradhan@gmail.com; Mobile: +977- 9841242626

Chepang Community. The association between oral hygiene habits, tobacco history and dental caries and periodontal diseases will also be explored.

METHODS

A cross-sectional study carried out among the conventional sample of 165 people attending oral health screening and treatment camp at Kakada village. Among them 104 female's data were taken for analysis. Chepang were utilized for assessing oral hygiene habits and practices and prevalence of dental caries and periodontal diseases.

During the camp, after taking informed consent, a questionnaire was delivered among the patients coming to the screening camp who were the resident of Kakada village. Full mouth examination was done under portable LED headlight. Data on oral hygiene habits and history of tobacco were collected by the questionnaire. Dental caries experience was assessed using DMFT index which has been used since 1930s and today is the predominant population-based measure of caries experience worldwide. This index gives the sum of an individual's decayed, missing and filled permanent teeth surface (DMFT).[8] Periodontal status was recorded using Russell's Periodontal Index developed by Russell AL in 1956 which is probably the most widely used periodontal index in epidemiological surveys around the world with the help of mouth mirror and non calibrated periodontal probe. The scale values range from 0-8 with increasing prevalence and severity of disease. All of the gingival tissue circumscribing each tooth is considered the scoring unit for gingival inflammation and periodontal involvement.[9] The complete intraoral examination was carried out by three examiners who were previously trained.

Data analysis was done using SPSS. Prevalence and association of oral hygiene habits and root caries/ periodontal status were calculated.

RESULT

Among 165 Chepang patients, 104 patients were female whose mean age was 30.1 years with standard deviation of 12.7 ranging from 11 to 70 years. Brushing practices reported by interviewee seems better but it was not verified during study. [Table-1]

Table-1: Oral hygiene practice of females in Chepang community (N=104)

Brushing practice	Number	%
Tooth brush and paste	100	96.2
Regular brushing	89	85.6
Brush twice daily	79	76
Changing tooth brush after 3 months	39	37.5
Brush after breakfast	7	6.7

According to method of cleaning horizontal stroke was opted by 74%, vertical stroke by 16.3% and mixed technique by 8.7%. Among 104 females, 82.7% of the female brushes early morning before breakfast and only 9.6% brushes after dinner.

More than half had beginning of destructive periodontitis and 5% would require immediate treatment to save teeth. [Table-2]

Table-2: Periodontal index (N=104)

Index	Frequency	%
Beginning of destructive periodontitis	56	53.8
Simple gingivitis	32	30.8
Clinically normal	11	10.6
Terminal disease	5	4.8

DMFT index showed good results in decreasing caries incidence which was 37.5% with zero caries and only few (1%) showed the caries incidence with the mean of 3.125. [Table-3]

Table-3: Decayed, Missing and Filled Teeth: DMFT

DMFT	Minimum	Maximum	Mean	Std. Deviation
Caries	0 (37.5%)	24 (1%)	3.125	4.35

DISCUSSION

In Nepal, there is scarce data on the female oral health status of indigenous Chepang population. Although the present study is not based on representative sample but it does give an insight into the caries prevalence, oral health knowledge and preventive practice in rural Chepang female population of that area.

As per the National Oral Health Policy 2014, which execute the oral health related survey [10] which yield the country wide survey providing the strong basis for the

oral health maintenance and prevention program. This study provided information on oral hygiene habits, methods, techniques and knowledge of dental health status of Chepang females residing in Kakada village.

Out of total number of the females surveyed, a good number of female patients had the knowledge of brushing habits, technique and material of brushing. Most of the Chepang female brushes at least once a day. Similar study conducted in female undergraduates in Malaysia showed majority of the respondent brushed twice or after each meal, which showed that their oral hygiene practices were acceptable because cleaning teeth twice has been recommended by most of the dentists; nonetheless, using it after each meal has been proven to be the best.[11]

In the present study, DMFT index showed good results in decreasing caries incidence which was 37.5% with zero caries and only few showed the caries incidence. In contrary periodontal index showed the higher number of females had the progressive periodontal disease. More than 50% of the patients had beginning of destructive periodontal disease.

Few previous studies where majority of the participants had adequate level of understanding about tooth and periodontal diseases showed better result in periodontal index.[12] This study showed the lack of knowledge among the respondents with regards to the relationship of oral hygiene with the periodontal problems.

This study could have been more effective if it was done in wide range of patients and various other parts of Nepal.

CONCLUSIONS

Majority of female (85.6%) had been brushing regularly and twice daily however the prevalence of periodontal disease and DMFT were significant. This could be associated with many other factors like faulty tooth brushing and smoking habits. Education and motivation of the population is required to improve the oral hygiene, oral hygiene measures and to refrain from habits.

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