Original Article

Pattern of Distribution of Oral Diseases among Children in Jorpati, Kathmandu

Khanal S[1], Acharya J[2], Gautam S[3], Malla M[4]

[1,2]Lecturer ,[2]Department Of Community And Public Health Dentistry,[3] Assistant Professor, Department Of Conservative Dentistry And Endodontics,[4]Dental Surgeon,[1,4]Department Of Pedodontics And Preventive Dentistry, [1,2,3,4]Dental College-Nepal Medical College, Attarkhel, Jorpati

Abstract

Background:

Oral diseases such as dental caries, periodontal diseases are still major public health problems worldwide, but more in developing countries. In context with Nepal, due to a lack of researches and evidence in this field, a baseline data regarding the occurrence of oral diseases has been seen to be necessary in order to plan any community oriented preventive programmes.

Aim and Objective: The objective of the study was to assess the pattern of distribution of oral diseases among children aged 1 year to 14 years visiting the Pedodontics Department of College of Dental Sciences, Nepal Medical College.

Material and Method:

This cross sectional study was carried out among 392 children (215 males 177 females) visiting Dental college with oral problems within a time period of 6 months from January 2013 to July 2013. All the new patients reporting to the Department of Pedodontics and Preventive dentistry were enrolled in the study. Patients were divided into two age groups, group 1: From 1 year to 6 years for primary dentition and group 2: From 7 to 14 years for mixed dentition (122 in group 1 and 270 in group 2).

All the patients were examined in the dental OPD. All the positive findings like dental caries, dentoalveolar abscess and malocclusion were recorded. The oral diseases that they presented with were subdivided into supernumerary teeth, enamel defects, trauma, herpetic gingivitis, and routine dental check up with investigations were carried out for the required cases.

Results: The results of this study showed that 80.6% of the children showed presence of dental caries, 18.4% had dentoalveolar abscess, 22.4% of the children presented with tooth mobility as their chief complaint and 7.9% complained of malocclusion as their problem. 8.2% of the children visited the hospital with other oral problems like supernumerary teeth, enamel defects, trauma, and herpetic gingivitis, out of which maximum (3.1%) reported with trauma. The study also showed that amongst the total children, 1-6 years old children had more dental caries (85.2%) and dentoalveolar abscess (30.3%) than older children. Pearson's chi square test showed that the caries relation was non significant but abscess was significantly different between the two groups of children.

Conclusion: Dental caries was the most predominant disease in the children followed by dentoalveolar abscess. Oral health promotion and planning programs directed towards the oral health should be conducted at regular intervals.

Key words:

Children, dental caries, dentoalveolar abscess, oral diseases

Correspondence: Dr. Sanskriti Khanal, Department of Pedodontics and Preventive Dentistry, Dental College - Nepal Medical College, Email- sans212@gmail.com

Introduction

Despite great improvements in the oral health of populations in several countries, global problems still persist particularly for the disadvantaged and poor population groups in both developing and developed countries. Oral diseases such as dental caries, periodontal disease, tooth loss, oral mucosal lesions and oropharyngeal cancers, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS)-related oral disease and oro-dental trauma are major public health problems worldwide. The diversity in oral disease patterns and development trends across countries and regions reflects distinct risk profiles and the establishment of preventive oral health care programmes. [1] Oral diseases qualifies as major public health problems owing to their higher prevalence and significant social impact . [2]

Nepal, is a developing country with little awareness and practice regarding oral health amongst rural Nepalese population. [2,3] There is scarce data on the oral health status of children attending public schools.[3] A need for baseline data to assess and evaluate the oral health status and needs of the communities has been seen necessary mostly among children as they are the group mostly seen to be affected by oral problems.

This study aims at assessing the pattern of distribution of oral diseases among children aged 1-14 years visiting the hospital within a 6 months time period. The objectives of this research were to identify the major oral problems prevalent in the children so as to plan preventive programs according to their need.

Materials and Methodology

This was a cross sectional study carried out among 392 children (215 males and 177 females) visiting with oral problems within a 6 month time period from January 2013 to July 2013. All the new patients reporting to the Department of Pedodontics and Preventive Dentistry were enrolled in the study. Parents accompanying the child gave the consent for the examination. Children who had a history of chronic systemic diseases or physical/mental disorders and those who were not willing to participate in the clinical examination were excluded from the study. Children who were referred from other dental clinics to continue their treatment were not included in this study. Children were divided into two age groups, group I: From 1 years to 6 years (122 children) for primary dentition and group II: From 7 to 14 years for mixed dentition (270 children).

All the patients were examined clinically in the dental OPD by a single trained clinician. The chief complaint was recorded as the main reason for the visit in the hospital. The patients reported with complaint of dental caries associated with or without pain, mobility of primary tooth, swelling (including extra oral or intra oral swelling) and malocclusion, deposits in the teeth, and dental check up. The oral diseases that they presented with were subdivided into trauma, herpetic gingivitis; investigations were carried out for the required cases with the consent of the parents. All positive findings like supernumerary teeth, enamel defects, developmental anomalies of teeth, soft tissue lesions etc. were also recorded.

Statistical analysis

Data were analyzed using the statistical package for social science 11.5 (SPSS 11.5). Descriptive statistics were obtained and frequency distribution were calculated. Pearson's Chi square test was used to test for association (α=0.05).

Results:

The study was carried out among 392 children (215 males and 177 females). Among 392 children, 122 children of 1 to 6 years old were grouped for primary dentition and 270 children for mixed dentition (7 to 14 years) (Table 1.1). The results of this study showed that out of 392 children 80.6% of the children showed presence of dental caries, 18.4% had dentoalveolar abscess, 22.4% of the children presented with tooth mobility as their chief complaint and 7.9% complained of malocclusion as their problem. 8.2% of the children had other oral problems like supernumerary teeth (1.3%), enamel defects, herpetic gingivitis and neonatal tooth (0.3%), fusion of primary tooth (0.5%) and routine dental check up (0.5%) out of which maximum (3.1%) reported with trauma (Fig.1). Among them

58.3% belonged to the age of 1-6 years old. This difference was statistically significant (p value = 0.03) (Table 1.4)

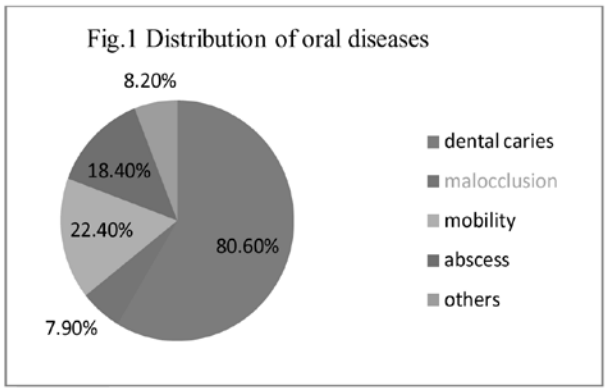

Table 1.2.Caries prevalence among children by gender and age

VARIABLES	no caries	caries	Total	P-value*
	N (%)	N (%)		
GENDER				
Male	42(19.53)	173(80.46)	215	0.93
Female	34(19.20)	143(80.79)	177	
AGE				
1-6 years	18(14.75)	104(85.25)	122	0.11
7-14 years	58(21.48)	212(78.52)	270	

*P-value taken from Pearson's Chi Square tests

Table 1.3. Prevalence of dentoalveolar abscess among children

VARIABLE	NO ABSCESS		ABSCESS		TOTAL	P-value
AGE	N	%	N	%		
1-6 years	85	69.70	37	30.30	122	0.00
7-14 years	235	87.00	35	13.00	270	

*P-value taken from Pearson's Chi Square tests

Table 1.4 Prevalence of trauma among children by age

VARIABLE	NO TRAUMA		TRAUMA		TOTAL	P-value
AGE	N	%	N	%		
1-6 years	115	94.26	7	5.74	122	0.03
7-14 years	265	98.15	5	1.85	270	

*P-value taken from Pearson's Chi Square tests

This study showed that out of the total children presenting with dental caries, 85.2% belonged to the age group of 1 to 6 years with slightly less percentage (78.5%) in 7 to 14 years group. 80.5 % of male and 80.8% of female had dental caries. However, this difference was not statistically significant. (Table 1.2)

Amongst the reported cases, 18.4% had dentoalveolar abscess. Younger children of age 1-6 years old had more abscess (30.3%) than children of 7 to 14 years (13%). This difference was statistically significant (p = 0.00). (Table 1.3)

Appendix

Table 1.1:General characteristics of the children		
Variables	n	%
Age		
1-6 years	122	31.12
7-14 years	270	68.88
Gender		
Male	215	54.84
Female	177	45.15

Discussion:

This study was conducted to evaluate the distribution of oral diseases in children in a village development committee situated 11 kilometers northeast of Kathmandu city. The 2004 National Pathfinder Survey shows that 58 % of 5 to 6-year-old schoolchildren suffer from dental caries. With the caries prevalence of 58%, dental caries is more prevalent than malnutrition that affects 49% of child population.[4] In this study, the predominant oral disease was found to be dental caries in 80.6% of children. This could be because the hospital where the study was conducted is in village development area and children mostly visiting the hospital belonged to the rural communities. Similar findings have been reported by Yee et al where the children residing in rural area of Nepal have seen to have higher prevalence of caries than those children in urban region.[5] Dental caries attributes to toothache and eventually children have to miss their school which will lead to poor performance of children in school. Severe dental decay was the main dental factor related to school absence in Thai children.[6]

World Health Organization reports 60-90% of school children worldwide have experienced

caries, with the disease being most prevalent in Asian and Latin American countries.[3] It was also seen that the prevalence of dental caries was somewhat similar among males (80.5%) and females (80.8%). But the younger children aged between 1 to 6 years showed more dental caries (85.5%) than the older children of 7 to 14 years (78.5%). However, this difference was not statistically significant ($p = 0.11$). This is in accordance with the prevalence studies in Nepal which showed that younger children presented with more dental caries than older children. Lonim et al and B Subedi et al in their study have reported that 5-6 yrs old had caries 52% and 69% , whereas 12-13 years old children had 41% and 53.23% caries prevalence respectively in Nepalese population.[3,7]

Amongst the total children who reported in the hospital, 18.4% reported to the hospital after there was an evident facial swelling or draining pus from the sinus. They reported that they had experienced pain in the past due to caries, but did not seek dental treatment. 30.3% of children aged 1- 6 years and 13% of the children aged 7 -14 years presented with dento-alveolar abscess. This difference was found to be statistically significant ($p< 0.05$). Azodo CC et al have also reported that the untreated dental caries was the most common cause of dentoalveolar abscess in children, followed by trauma, failed restoration or periodontal infection.[8]

The patients who visited the dental OPD considered the physiological mobility of the tooth as a major problem in the children. There were 22.4% of children who visited the clinic to get their mobile tooth extracted. The prevalence of malocclusion has increased in recent decades.[9,10] 7.9% of patients reported the hospital for treatment of mal-aligned teeth . Motivational factor for these patient was found to be esthetics, however, they were not aware of the functional or periodontal problems .[9,10]

Amongst other problems (8.2%); trauma (3.1%) was the most common. Amongst them, 58.3% belonged to the age of 1-6 yrs old. This difference was statistically significant (p value = 0.03). This can be explained by the high frequency of falls seen in younger children resulting in trauma to the primary teeth .[11] Traumatic injuries in primary teeth is commonly more in children aged between 13 and 24 months.[12]

There were children who also presented with other oral problems like supernumerary teeth (1.3%), enamel defects, and fusion of primary tooth (0.5%). These patients were not aware and concerned regarding these developmental defects. Herpetic gingivitis and neonatal tooth was seen in 0.3% of patients.

Conclusion:

In this study dental caries was seen to be the most prevalent oral disease among children of 1 to 14 years of age. Therefore, it can be derived from this study that priority should be given to the treatment and control of dental caries so as to decrease the prevalence of oral diseases as a whole. Rehabilitative care targeted towards treatment of the existing problems of dental caries should be made available to the children. Along with this, oral health education programs at individual, and community levels should be implemented aimed primarily at increasing the knowledge and awareness of the communities towards the risk factors associated with oral problems in order to prevent further increase of occurrence of dental caries among children

References:

1. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks to oral health. Bull World Health Organ. 2005 Sep;83(9):661-9. 2005 Sep 30.
2. Humagain M . Evaluation of Knowledge, Attitude and Practice (KAP) About Oral Health Among Secondary Level Students of Rural Nepal - A Questionnaire Study WebmedCentral DENTISTRY 2011;2(3):WMC001805
3. Prasai Dixit et al.: Dental caries prevalence, oral health knowledge and practice among indigenous Chepang school children of Nepal. BMC Oral Health 2013 13:20.
4. Yee R, Mishra P: Nepal National Oral Health Pathfinder Survey 2004. J Nepal Dent Assoc 2005; 7(1):64-68.
5. Yee R, McDonald N. Caries experience of 5-6-year-

old and 12-13-year-old schoolchildren in central and western Nepal. Int Dent J. 2002 Dec; 52(6):453-60.

6. Krisdapong S, Prasertsom P, Rattanarangsima K, Sheiham A. School absence due to toothache associated with sociodemographic factors, dental caries status, and oral health-related quality of life in 12- and 15-year-old Thai children. J Public Health Dent. 2013 Aug 19. doi: 10.1111/jphd.12030.
7. Subedi et al. Prevalence of Dental Caries in 5 – 6 Years and 12 – 13 Years Age Group of School Children of Kathmandu Valley. J Nepal Med Assoc 2011;51(184):176-81.
8. Azodo CC, Chukwumah NM, Ezeja EB. Dentoalveolar abscess among children attending a dental clinic in Nigeria. Odontostomatol Trop. 2012 Sep;35(139):41-6.
9. Aldrees A M . Pattern of skeletal and dental malocclusions in Saudi orthodontic patients. Saudi Med J 2012; Vol. 33 (3): 315-320
10. Vibhute AH, Vibhute NA, Daule R. Prevalence of malocclusion characteristics and chief motivational factor for treatment in orthodontic patients from Maharastara, India. J Orthod Res 2013;1;62-5
11. Kovács, Mónika, et al. "Prevalence of Traumatic Dental Injuries in Children Who Attended Two Dental Clinics in Târgu Mureº Between 2003 and 2011." Oral health and dental management 11.3 (2012): 116.
12. Costa, V. P. P., et al. "Traumatic dental injuries in primary teeth: severity and related factors observed at a specialist treatment centre in Brazil." European Archives of Paediatric Dentistry (2013): 1-6.