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Research Article

**ORAL HYGIENE AND CARIES STATUS OF CHILDREN  
WITH CLEFT LIP AND PALATE**Maham Zahid, Amna Urooj, Rauha Sheikh, Dr Mohsin Majeed, Dr Sara Izhar  
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**Abstract:**

**Aim:** The aim of this study was to determine the incidence of dental caries and oral hygiene in a group of children with cleft lip and palate (CLP).

**Place and Duration:** In the Dental OPD of Nishtar Hospital Multan for six months duration from July 2019 to December 2019.

**Methods:** A total of 84 cleft children (45 men and 39 women) were tested for dental caries and oral hygiene. The children were divided into two age groups; Group A with children from one to six years old and Group B with children from 7 to 14 years old. All children in both age groups had caries. The average DMFT result (bad, bad and full milk teeth) in children in group A is 10.54 (SD 4.59). The total mean dmft / DMFT (primary and permanent caries, no teeth and complete) in group B children was 10.92 (SD 4.90), respectively.

**Results:** There was no statistically significant ( $p > .05$ ) difference observed between the mean dmft / DMFT scores in relation to age and gender of the cleft children. More than half of the children had poor oral hygiene (54.7%).

**Conclusion:** In conclusion; the incidence and severity of caries was high in the children with cleft. For most children, oral hygiene was poor.

**Key words:** Tooth Decay, Oral Hygiene, Cleft Lip and Palate, Child

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**INTRODUCTION:**

Cleft lip (CL) and cleft palate (CP) is one of the most common birth defects reported after birth. Cleft lip is caused by a normal lip-joining process that is not completed during embryonic life. A dissected lip can be one-sided or two-sided and can range from a mild and noticeable wound to the full area along the nose<sup>1</sup>. The cleft palate is a hole in the top of the mouth (palate) because the palate shelves do not completely connect on both sides of the mouth and merge with each other. Cleft lip and cleft palate (CLP) causes urgent and immediate nutritional problems<sup>2</sup>. While cleft creates sucking problems when feeding lips, cleft makes it difficult to suck the palate; instead of swallowing milk or food, it may flow out of the baby's nose<sup>3</sup>. Cleft lip and cleft palate are often found together. Both conditions begin at different times during pregnancy, and the exact etiology is unknown<sup>4-5</sup>. However, both conditions are associated with developmental and growth problems in early pregnancy<sup>6</sup>. Other factors, such as heredity, environmental effects during pregnancy, blood supply, radiation exposure, and severe vitamin deficiencies, some medications and biochemical processes, can also affect the human fetus<sup>7</sup>.

A review of the literature shows few studies on the occurrence of caries in children with cleft. Lauterstein and Mendelsohn (1964) found no significant difference between the experiences of caries in children without cleft in Sweden. Johnsen and Dixon (1984) found more carious lesions in the deciduous incisors of cleft children than non-cleft children in United Kingdom<sup>8</sup>. Two relatively new studies in the United Kingdom have found that more than half of cleft children have no defects and attribute them to a strict preventive dental care program for these children. Researchers from other countries reported more broken, full and missing teeth in children without cleft than in children without cleft and concluded that cleft children are more likely to develop cavities than normal children in a similar age group.

Studies on the prevalence of caries in school and pre-school children in Pakistan have shown high levels of caries. Only a few studies have been published regarding the periodontal health of children with cleft. In general, periodontal disease has often been observed in children with cleavage of varying severity<sup>9</sup>. Many studies have shown that cleft children show poor oral hygiene and poorer gum health. Despite the established relationship between gum / periodontal health and poor oral

hygiene, there is no information on the state of oral hygiene of children in Saudi Arabia. Therefore, the purpose of this study was to determine the carious and oral hygiene experience of children with i clefts.

**METHODS:**

This study was held in the Dental OPD of Nishtar Hospital Multan for six months duration from July 2019 to December 2019. Children with cleft lip and cleft palate were selected for the study. These children were examined for dental caries and oral hygiene during routine visits to CLP clinics after parental consent. The children were divided into three categories by type of cleft; Only CL, only CP and only CLP children. The examiners examined children sitting at the dentist using a dental mirror and discoverer. Credibility between observers and observers was determined by the Kapp method and all were excellent (0.9 and above). Data obtained during the study were saved in a form specially designed for the study. The following indicators were used to evaluate tooth decay and oral hygiene in children. WHO criteria were used to diagnose caries. Caries was diagnosed based on visual evidence after drying and removal of tooth residues using an explorer and mirror. X-ray was not taken. Index, James et al. The index covers three categories of tooth cleaning.

- Good: teeth are clean. No food residue.
- Bad: teeth are very dirty. Food that lasts a long time contains the substance Alba.
- Fair: this class belongs to the previous class. There is evidence of debris, but not to a degree considered bad.

The data were then loaded onto a computer using the FOXPRO software and analyzed using the SPSS (Social Sciences Statistics Program) version 19. Various frequencies were generated. Pearson's Chi-square test was used to determine gender differences in dental caries and oral hygiene, and a significant relationship between dental caries and oral hygiene.

**RESULTS:**

84 men, 45 men and 39 middle-aged women 6.6 (SD 3.7) were examined during the study. There were 48 children in group A and 36 children in group B. Of the 84 children examined, 29 (34.5%) had CL, 27 (32.1%) had PC, and 28 (33.4%) had CLP. Table 1 summarizes the distribution of children by sex and type of cleft. According to the cleft category, there was no difference between the caries experience and the state of oral hygiene, therefore combined data was presented.

TABLE 1: DISTRIBUTION OF CHILDREN BY GENDER AND CLEFT TYPE.

Cleft Type	Male (%)	Female (%)	Total (%)
CL	15 (51.7)	14 (48.3)	29 (34.5)
CP	10 (37.0)	17 (63.0)	27 (32.1)
CLP	20 (71.4)	8 (28.6)	28 (33.4)
<b>Total</b>	45 (53.6)	39 (46.4)	84 (100)

The children were divided into two age groups; Group A consisted of children between one and six years of age, and Group B had children between the ages of 7 and 14. All children in both groups had caries. Caries experiment in both groups is presented in Table 2.

TABLE 2: CARIES EXPERIENCE OF THE CHILDREN

Age Group	Mean dmft/DMFT (SD)	Mean decay (SD)	Mean missing (SD)	Mean filled (SD)
A	10.54 (4.59) *	9.23 (4.39)	1.17 (1.95)	0.15 (1.01)
B	10.92 (4.9) **	9.6 (4.77)	1.17 (1.94)	0.14 (1.01)

The average dmft score for children in group A was 10.54 (SD 4.59), which is a component of the distribution (d) 9.23 (SD 4.39). None 1.17 (SD 1.95) (m) and filler component (f) 0.15 (SD 1.01). In group B children; the average rating was 10.92 (SD 4.90) with 9.6 (SD 4.77) the distribution component, 1.17 (SD 1.94) missing component and 0.14 (SD 1.01) filled with component. There was no significant difference in mean caries by age ( $p > 0.05$ ). The average caries results were slightly higher in girls than in boys (Table 3). However, the difference could not reach statistical significance ( $p > 0.05$ ).

TABLE 3: CARIES EXPERIENCE OF THE CHILDREN IN RELATION TO GENDER

Age Group	Gender	Mean dmft/DMFT	SD	p value
1-6 Years	Male	9.96	4.11	>0.05
	Female	11.23	5.12	
> 6 Years	Male	5.32	4.60	>0.05
	Female	6.00	5.72	

Very few children (6%) had good oral hygiene, and the vast majority (94.0%) had regular or poor oral hygiene (Table 4). There was no statistically significant difference between the oral hygiene statuses depending on the sex of cleft children ( $p > 0.05$ ).

TABLE 4: ORAL HYGIENE STATUS IN RELATION TO GENDER

Gender	Oral hygiene			Total (%)
	Good (%)	Fair (%)	Poor (%)	
Male	4(8.9)	14(31.1)	27(60.0)	45(100.0)
Female	1(2.6)	19(48.7)	19(48.7)	39(100.0)
<b>Total</b>	5(6.0)	33(39.3)	46(54.7)	84(100.0)

Children with small chasms have relatively better oral hygiene compared to the elderly group (Table 5).

TABLE 5: ORAL HYGIENE STATUS IN RELATION TO AGE

Gender	Oral hygiene			Total (%)
	Good (%)	Fair (%)	Poor (%)	
1-6 Years	4(8.3)	21 (43.8)	23(47.9)	48(100.0)
> 6 Years	1(2.8)	12(33.3)	23(63.9)	36(100.0)
<b>Total</b>	5(6.0)	33(39.3)	46(54.8)	84(100.0)

But; the difference was not statistically significant ( $p > 0.05$ ). In both age groups there was no correlation between caries experience and oral hygiene ( $p > 0.05$ ).

### DISCUSSION:

General lack of information on dental caries and oral hygiene of children with ruptured clefts, especially in children with cleft in Saudi Arabia. This study provided insight into the subject. The study should add useful information to limited data on the oral health of children with cleft<sup>10</sup>. The results of this study will serve as reference data for future comparisons and help to plan preventive measures for these children.

Studies of tooth decay experience in young children with cleft lip and cleft palate have shown significant differences in their results. This study showed that the experience of dental caries in primary and mixed teeth is very large. The results of our study are consistent with several other studies<sup>11</sup>. It is known that the severity and frequency of caries varies depending on age. In primary dentistry, the effects accumulate until about the age of 7, and then decrease when the primary teeth begin to peel off. Previous studies involving undivided Saudi and pre-school children in the Eastern region have shown significantly lower caries compared to the caries of cleft children in this study<sup>12</sup>. The high level of caries in children with cleft can be attributed to the low priority of dental care for these children, because parents focus on the many medical procedures necessary to correct birth defects in early childhood<sup>13</sup>. Therefore, it is very important to include dental prophylaxis in the general treatment protocol in these children. Our medical partners should know the relationship between CLP and dental health. Parents of cleft children should be informed of possible dental problems in their children and motivated to consult dentists for better dental prophylaxis. The dental profession should be better informed about the special needs of children with cleft<sup>14</sup>. Oral rehabilitation programs should be designed for people with chasms that lead to better dental health.

In this study, more than half of children with cleft showed poor oral hygiene. According to our study, similar results have been reported in other studies.

Poor oral hygiene in cleft children can be attributed to deformities and surgical wounds that make it difficult to maintain good oral and control plate hygiene. It is suggested that intensive cleavage programs be used as soon as possible in children with cleft<sup>15</sup>. A coordinated team approach to the treatment of all aspects of care should include close monitoring of oral hygiene measures and ongoing professional care through a regular lifelong treatment system for people with cleft. Parents of children with chasms should be encouraged to have regular dental examinations.

### CONCLUSION:

- Caries experience was very large in children with cleft lip and cleft palate.
- There was no significant difference between caries experiences of children cut out according to their age and sex.
- Most children with cleft oral hygiene are fair or poor.

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