



Assessment of oral health care behavior and feeding habits among oral cleft patients - A cross sectional study.

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Abstract

Objectives: To assess oral health behaviour and feeding habits of cleft lip and cleft palate patients of 0-24 months old.

Methods: A cross-sectional study was conducted on 352 cleft lip and cleft palate patients of 0-24 months old, attending Bhagwan Mahavir Jain Hospital Bangalore, a tertiary care hospital The information was recorded by self – administered questionnaire. The structured proforma was used, consisted of three parts 1) epidemiologic profile, 2) questions about oral health behavior, feeding habits. Descriptive and inferential analyses were done.

Results: Out of 352 oral clefts patients, most of the parents didn't clean their children's oral cavity($p=0.022$). Majority of the patients had external source of milk through bottle or spoon ($p=0.001$). More than half of the patients had night time feeding ($p=0.002$)

Conclusion: The oral health behavior of these children was very poor which can lead oral health problem after tooth eruption if they continue.

Keywords: Cleft lip and palate, oral health care behavior, feeding behavior

Introduction

Oral health means being free of cavities and gum disease, but it also means being free of chronic oral pain conditions, oral cancers, birth defects such as cleft lip and palate, and other conditions that affect the mouth and throat.

Cleft lip or palate is “A congenital opening or fissure occurring in the lip or palate”.¹

The relatively high birth prevalence of orofacial cleft anomalies in a developing country like India with its rigid religious, social and dietary customs, coupled with large family size provide an opportunity for studying various etiologic factors like dietary influence, birth rank of cleft subjects and other factors underlying the relatively high incidence of cleft lip and palate.² Previous study has also shown presence same etiologic factors present in cleft lip and palate patients.

Child with this anomaly not only suffers for poor dental development but also deprived from breast feeding due to improper oral seal, swallowing and nasal regurgitation, other associated problems are hearing difficulties due to abnormalities in the palatal musculature, and speech difficulties due to nasal escape and articulation problems. Untreated clefts of the lip and palate is consider as

significant health care problem in India leading to aesthetic loss as well as psychological trauma in early childhood to adulthood.³ The literature revealed that children with oral clefts have a higher risk of developing caries in deciduous dentition than those of similar age without congenital malformation.⁴

There are paucity of studies carried out to assess the oral health behavior and feeding habits of cleft lip and palate patients. Hence the present study will add more value to the literature and a conscious effort in the health research with the same.

Objectives of the study

To assess oral health behaviour and feeding habits of cleft lip and cleft palate patients of 0-24 months old.

Methodology

A cross-sectional study was conducted in two parts to assess

1. Epidemiologic factors associated with non-syndromic oral clefts and
2. Oral health care behaviour and feeding habits of oral cleft patients of 0-24 months old, attending a tertiary care hospital in Bangalore. 1st part of the study was already published in the same journal.

This study was conducted after obtaining ethical clearance from ethical committee of Vydehi Institute of Dental Sciences and Research Centre, Bangalore. An official permission was obtained from the respective authority of Bhagwan Mahavir Jain hospital, Bangalore (tertiary care hospital where international voluntary organization “smile train” is functioning in Bangalore).

A total of 352 cleft lip and cleft palate patients would be selected according to the inclusion criteria from a tertiary care hospital in Bangalore.

Inclusion Criteria

- Patients with non-operated cleft lip and cleft palate.

- Within the age group of 0-24 months.
- Parents who were willing to participate.

Exclusion Criteria

- Parents who do not give consent.
- Children under the care of persons other than their parents.
- Before the start of the study the examiner was standardized and calibrated in the Department of Oral and maxillofacial surgery, Bhagwan Mahavir Jain Hospital, Bangalore, under the guidance of the oral maxillofacial surgeon.

Method of collection of data

For the oral health behaviour and feeding habits, the data was collected from either of the parent with written informed consent after explaining the nature and purpose of the study.

The information was recorded by self – administered questionnaire. A specially designed, close ended proforma was used for collection of data in this study.

The structured proforma used consisted of two parts, the first part consisted of consent and questions that included demographic information of subjects and parents. The demographic variables considered were name, age, gender birth place and permanent address of subjects, education and occupation and socioeconomic status of parents. The 2nd part consisted of questionnaire which contained prenatal care, oral health care behaviour and feeding behaviour. The questionnaire was provided in English and kanada (local language). For illiterate and single parent, examiner had filled the questionnaire by asking and explaining the questions. Oral clefts were examined using Kernahan’s stripped y classification.⁵

All the data were entered into the proforma. The data was then arranged systematically and the information from

the collected forms was transferred to the computer for analysis using

Statistical software namely SAS 9.2, SPSS 15.0 and Microsoft word and Excel. Descriptive and inferential analysis were done for the data. The results were statistically analyzed using chi-square test.

Results

A descriptive analysis of 352 cleft lip and palate patients are shown in table 1 and table 2. Results for the relationship between cleft status and oral health care behavior showed that: all of the participants were given care by caregivers.

In the present study, it was found that 44 (30.1%) of the caregivers of cleft lip patients, 17 (29.3%) of the caregivers of cleft palate patients and 64 (43.2%) of the caregivers of cleft lip and palate patients had never cleaned their oral cavity. About their brushing habit, 102 (69.9%) of the caregivers of cleft lip patients, 40 (69%) of the caregivers of cleft palate patients and 82 (55.4%) of the caregivers of cleft lip and palate patients used to clean their oral cavity in less than 2 days. Only 1 (1.7%) of the caregiver of cleft palate and 2 (1.4%) of the caregivers of cleft lip and palate patients were cleaning their oral cavity in more than 2 days. There was statistically insignificant relation between them ($p=0.056$). It was also found that 57 (39.0%) of the caregivers of cleft lip patients, 30 (51.7%) of the caregivers of cleft palate patients and 46 (31.1%) of the caregivers of cleft lip and palate patients used to clean their oral cavity after or before the bed. The study also showed that 46 (31.5%) of the caregivers of cleft lip patients, 15 (25.9%) of the caregivers of cleft palate patients and 40 (27%) of the caregivers of cleft lip and palate patients were cleaning their oral cavity after every meal. The rest of the caregivers never used to clean their

children's oral cavity. There was statistically significant relation between them ($p=0.022^*$). Regarding their cleaning method, it was found that 102 (69.9%) of the caregivers of cleft lip patients, 44 (75.9%) of the caregivers of cleft palate patients and 87 (58.8%) of the caregivers of cleft lip and palate patients used to clean their oral cavity with cloth/cotton/finger. Only 1 (0.7%) of the caregiver of cleft lip patient, 1 (1.7%) of the caregivers of cleft palate patients and none of the caregivers of cleft lip and palate patients were cleaning their oral cavity with tooth brush. The rest of the caregivers had never cleaned their children's oral cavity. There was statistically significant relation between them ($p=0.039^*$). Total 56 (38.4%) of the caregivers of cleft lip patients, 22 (37.9%) of the caregivers of cleft palate patients and 69 (46.6%) of the caregivers of cleft lip and palate patients used to ignore cleaning oral cavity when their child refuse for it. 47 (32.2%) of the caregiver of cleft lip patient, 22 (37.9%) of the caregivers of cleft palate patients and 23 (15.5%) of the caregivers of cleft lip and palate patients used to continue cleaning oral cavity even child refuse for it. The rest of the caregivers had never cleaned their children's oral cavity. There was statistically significant relation between them ($p = 0.003^*$). Regarding their attendance to dental clinic, 109 (74.7%) of the caregivers of cleft lip patients, 40 (69%) of the caregivers of cleft palate patients and 98 (66.2%) of the caregivers of cleft lip and palate patients had visited dental surgeon. The rest of the caregivers had never visited a dental surgeon. There was statistically insignificant relation between them ($p=0.449$). (Table 3) The present study also showed the relationship between cleft status and feeding behavior: total 98 (67.1%) of cleft lip patients, 10 (17.2%) of cleft palate patients and 16 (10.8%) of cleft lip and palate patients were having

breast milk. The rest of the patients, 48 (32.9%) of cleft lip patients, 48 (82.8%) of cleft palate patients and 132 (89.2%) of cleft lip and palate patients were having external source of milk. There was statistically significant relation between them ($p=0.001^*$). The present study showed that 85 (58.2%) of cleft lip patients, 49 (84.5%) of cleft palate patients and 123 (83.1%) of cleft lip and palate patients were having external source of milk / bottled milk (\pm breast milk). There was statistically significant relation between them ($p=0.001^*$). It was found that 54 (37%) of cleft lip patients, 22 (37.9%) of cleft palate patients and 53 (35.8%) of cleft lip and palate patients were having sweetened milk. The rest of the patients, 92 (63%) of cleft lip patients, 36 (62.1%) of cleft palate patients and 95 (64.2%) of cleft lip and palate patients were having plain milk. There was statistically insignificant relation between them ($p=0.955$). In the present study, it was found that 15 (10.3%) of the cleft lip patients, 10 (17.2%) of the cleft palate patients and 12 (8.1%) of the cleft lip and palate patients used to fall asleep with bottle at night. 109 (74.7%) of the caregiver of cleft lip patient, 33 i.e., 56.9% of the cleft palate patients and 99 (66.9%) of the cleft lip and palate patients used to fall asleep with bottle sometimes. 22 (15.1%) of the cleft lip patient, 15 (25.9%) of the cleft palate patients and 37 (25%) of the cleft lip and palate patients never had this habit. There was statistically significant relation between them ($p=0.049^*$). The study revealed that 35 (24%) of the cleft lip patients, 11 (19%) of the cleft palate patients and 21 (14.2%) of the cleft lip and palate patients used to practice night time bottle feeding every day. 89 (61%) of the caregiver of cleft lip patient, 29 (50%) of the cleft palate patients and 76 (51.4%) of the cleft lip and palate

patients used to practice night time feeding sometimes. 22 (15.1%) of the caregiver of cleft lip patient, 18 (31%) of the cleft palate patients and 51 (34.5%) of the cleft lip and palate patients never had this habit. There was statistically significant relation between them ($p=0.002^*$). The sugar consumption details revealed that 25 (17.1%) of the cleft lip patients, 10 (17.2%) of the cleft palate patients and 22 (14.9%) of the cleft lip and palate patients had frequent sugar consumption. The study also showed that 59 (40.4%) of the caregiver of cleft lip patient, 22 (37.9%) of the cleft palate patients and 61 (41.2%) of the cleft lip and palate patients had medium sugar consumption. The rest, 62 (42.5%) of the caregiver of cleft lip patient, 26 (44.8%) of the cleft palate patients and 65 (43.9%) of the cleft lip and palate patients had infrequent sugar consumption. There was statistically insignificant relation between them ($p=0.978$). (Table 4)

Table 1: Distribution of oral clefts

Parameter	Present		Absent		Total
	N	%	N	%	
Cleft Lip	146	42%	206	58%	352
Cleft Palate	58	16%	294	84%	352
CLP	148	42%	204	58%	352

Table 2: distribution of gender among oral clefts patients

Oral clefts		Male	Female	χ^2	P value
Cleft lip	Present	77(37%)	70(48%)	4.302	0.038*
	Absent	130(63%)	75(52%)		
Cleft palate	Present	42(20%)	16(11%)	5.308	0.021*
	Absent	165(80%)	129(89%)		
Cleft lip and palate	Present	89(43%)	59(41%)	0.186	0.666
	Absent	118(57%)	86(59%)		

Table 3: distribution of oral health care behavior in oral clefts and relationship

Oral health care behavior		Types of oral clefts			Total	X ² value	P value
		Cleft lip (n=146)	Cleft palate (n=58)	Cleft lip and palate (n=148)			
Frequency of brushing by caregivers	Never	44(30.1%)	17(29.3%)	64(43.2%)	125(35.5%)	9.225	0.056
	<2 days	102(69.9%)	40(69%)	82(55.4%)	224(63.6%)		
	> 2days	0	01(1.7%)	02(1.4%)	03(0.9%)		
Time of brushing	Never	43(29.5%)	13(22.4%)	62(41.9%)	118(33.5%)	11.462	0.022
	After or before bed	57(39%)	30(51.7%)	46(31.1%)	133(37.8%)		
	Every after meal	46(31.5%)	15(25.9%)	42(27.0%)	101(28.7%)		
Cleaning method by caregiver	Never	43(29.5%)	13(22.4%)	61(41.2%)	117(33.2%)	10.029	0.039
	Cloth/Cotto/ finger	101(69.9%)	44(75.9%)	87(58.8%)	233(66.2%)		
	Tooth brush	1(0.7%)	1(1.7%)	0	02(0.6%)		
Cleaning frequency when child refuses to brush	Ignore	56(38.4%)	22(37.9%)	69(46.6%)	147(41.8%)	15.921	0.003
	Continue	47(32.2%)	22(37.9%)	23(15.5%)	92(26.1%)		
	Never	43(29.4%)	14(24.1%)	56(37.8%)	113(32.1%)		
Dental visit	Yes	109(74.7%)	40(69%)	98(66.2%)	247(70.2%)	3.691	0.449
	No	37(25.3%)	18(31%)	49(33.1%)	107(29.5%)		

Table 4: distribution feeding habit in oral cleft and their relationship

Feeding behavior		Types of oral clefts			X ² value	P value
		Cleft lip (n=146)	Cleft palate (n=58)	Cleft lip and palate (n=148)		
Breast milk feeding	Yes	98(67.1%)	10(17.2%)	16(10.8%)	111.987	<0.001*
	No	48(32.9%)	48(82.8%)	132(89.2%)		
External source of feeding	Yes	85(58.2%)	45(84.5%)	123(83.1%)	27.743	<0.001*
	No	61(41.2%)	09(15.5%)	25(16.9%)		
Types of bottled milk	Sweet milk	54(37%)	22(37.9%)	53(35.8%)	0.093	0.955
	Plain milk	92(63%)	36(62.1%)	95(64.2%)		
Falling asleep with bottle	Night	15(10.3%)	10(17.2%)	12(8.1%)	9.547	0.049*
	Sometime	109(71.7%)	33(56.9%)	99(66.9%)		

	Never	22(15.1%)	15(25.9%)	37(25%)		
Night time feeding	Every night	35(24%)	11(19%)	21(14.2%)	16.668	0.002*
	Sometime	89(61%)	29(50%)	76(51.4%)		
	never	22(15.1%)	18(31%)	51(34.5%)		
Frequency of sugary food consumption	Frequent	25(17.5%)	10(17.2%)	22(14.9%)	0.456	0.978
	Medium	59(40.8%)	22(37.9%)	61(41.2%)		
	Infrequent	62(42.5%)	26(44.8%)	65(43.9%)		

Discussion

The present cross-sectional study was conducted to assess oral health behaviour and feeding habits of cleft lip and cleft palate patients of 0-24 months old., attending a tertiary care hospital in Bangalore. There were 145 female subjects comprising 41% and 207 male subjects comprising 59% of the total population. The subjects and their parents were questioned for the study. In the present study, 147 subjects i.e., 42% were having cleft lip, 58 subjects i.e., 16% were having cleft palate, and 148 subjects i.e, 42% were having cleft lip and palate.

The primary care provider (PCP) is indispensable in the care of the patient with cleft lip and palate. Ideally, the PCP becomes an extended member of the cleft lip/palate team, following many of the same medical issues as the team specialists (such as recurrent otitis media, airway concerns, growth failure and developmental progress). In addition, the PCP may have the special task of advocating for the child in a particular health care system, and preauthorizing visits to the cleft lip/palate team providers. For these reasons it is essential that the PCP be familiar with the special aspects of cleft care.⁶ In the present study, when the parents asked about their child’s oral health care behavior, the most frequent cleaner was caregiver which was 100%. In this study, it was estimated 35.5% of the participants never cleaned their teeth where as 63.6% of clean their teeth less than 2 days. It was also found that 41.8% parents ignore

brushing/cleaning when their child refuse for it. These values were significantly associated. (p=0.003) These finding were in accordance with the study done by Ankola AV et al. In this study it was found that most of participants were using toothbrush which was not in accordance with the present study.⁷

Possible reasons for the poorer oral hygiene in CLP group are the following: the difficulty in tooth cleaning because of the presence of residual scar tissue as a result of the multiple surgical procedures carried out at the cleft region; the lack of interest for oral hygiene due to many other health problems such as otitis media, difficulty in speech and the fear that children often have when they brush their teeth at the cleft area. All the above factors make the importance of the application of individualized preventive oral health programs in CLP patients, imperative.¹⁹ Though, all the participants were taken care by their care givers, it was found around 29.5% caregivers did not visit any dentist in past six months.

In the present study 35.2% of the participants were having breast milk, where as 73% were on bottle feeding or external sources. These finding were statistically significant (p=<0.001). These finding ere in accordance with the study done in Thiland.² Many newborns with oral clefts have feeding problems, babies born with cleft palates are particularly at risk for significant failure to thrive. One reason for this is the difficulty they have creating suction with the cleft palate, leading to

inefficient, calorie-wasting attempts to suck, resulting in inadequate nutritional intake. In addition, some babies (e.g. with Robin Sequence, have difficulty coordinating breathing, sucking and swallowing, which further impedes adequate intake. Thus, growth parameters must be monitored very closely in the first few weeks of life. Adequate feeding is possible with special bottles and techniques; both available from cleft feeding specialists (usually nurses or feeding therapists) associated with cleft lip/palate teams. The knowledgeable nurse in the newborn nursery can initiate proper feeding, but it is essential that these babies be monitored over the long-term.⁶The present study also found that 36.6% of parents gave sweet milk to their child. It was also found that 19% participants had night time feeding habit and 55.1% sometime used to have milk at night. ($p=0.002$). These findings were in accordance with the study done by Mutarai T et al. The study present study also shows 10.5% of the participants used to fall asleep while bottle feeding at night where as 68.5% sometimes used to fall asleep with feeding bottle. These finding were also statistically significant ($p=0.049$). A study conducted in Thailand concluded that the nighttime feeding habit is relevant for influencing early childhood caries of cleft lip and/or palate children aged 18 to 36 months in southern Thailand. This may be due to failure to clean the oral cavity with clefts. In the present study it was also found that 16.2% had frequent sugar consumption and 40.3% had medium sugar consumption. These finding were in accordance with the study done in Thailand.⁷ According to the studies in western countries, the children with oral clefts have higher caries prevalence than normal child. The caries in primary dentition is significantly higher.⁸ This type of oral hygiene practice and feeding behavioral habit may acts as predisposing factor for it.

A healthy primary dentition in cleft children is essential for the successful outcome of orthodontic treatment, oral function, speech development, and space maintenance for dentition. However, achieving optimal dental health in cleft children may be difficult due to the anatomy of the cleft area, misaligned teeth, hypoplastic defect, scarring, and the consequences of surgical repair that cause immobility of the lip. Early extraction would result in loss of the bone preserved by primary teeth bordering the alveolar cleft and may also hinder good speech development.⁴

Conclusion

The current study revealed that, oral clefts in male neonates were slightly higher than females. The right sides of oral clefts were more common than left side. Among the oral clefts, cleft lip was more prevalent followed by cleft lip and palate and cleft palate. The oral health behavior of these children was very poor which can lead oral health problem after tooth eruption if they continue. Most of the parents were following wrong feeding procedures for their children which can be a contributing factor for dental caries development. The findings of this study can be used as a model for other studies of the outcomes associated with medical / dental intervention or to educate/council the parents provided by visiting health care workers.

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