Clinical Study

Prevalence of Oral Habits in Children with Cleft Lip and Palate

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This study investigated the prevalence of oral habits in children with clefts aged three to six years, compared to a control group of children without clefts in the same age range, and compared the oral habits between children with clefts with and without palatal fistulae. The sample was composed of 110 children aged 3 to 6 years with complete unilateral cleft lip and palate and 110 children without alterations. The prevalence of oral habits and the correlation between habits and presence of fistulae (for children with clefts) were analyzed by questionnaires applied to the children caretakers. The cleft influenced the prevalence of oral habits, with lower prevalence of pacifier sucking for children with cleft lip and palate and higher prevalence for all other habits, with significant association \((P < 0.05)\). There was no significant association between oral habits and presence of fistulae \((P > 0.05)\). The lower prevalence of pacifier sucking and higher prevalence of other oral habits agreed with the postoperative counseling to remove the pacifier sucking habit when the child is submitted to palatoplasty, possibly representing a substitution of habits. There was no causal relationship between habits and presence of palatal fistulae.

1. Introduction

The manner how children are raised is very important for their full development, general health, and inclusion or exclusion of costumes and habits.

Habit is a behavior acquired by the frequent repetition or physiologic exposure with regularity [1]. Related to the mouth, it is commonly observed in children and may be harmful when excessively repeated or in more vulnerable ages. They often involve patterns of muscle contraction and may contribute to the etiology of malocclusion, because they affect the entire orofacial region.

In the presence of habits, the duration of the applied force is the most critical variable to be analyzed, because the longer the duration, the greater will be the impact on the dentition, musculature, and bone structure [2].

Considerable differences are observed in the prevalence of habits throughout the world. Traditions, cultural influences, and child raising are possible factors that influence their prevalence. The prevalence of sucking habits in Brazil seems to vary between states because of differences in culture, ethnicity, and lifestyle [3].

The period of breastfeeding has been indicated as a possible cause of nonnutritive sucking habits [3]. Holanda et al. [4] stated that breastfeeding for longer than six months is considered a protective factor against the persistence of pacifier use but highlighted that the affective relationship between mother and child during breastfeeding and after this period should be further investigated to better understand the etiology of nonnutritive sucking habits. The extended breastfeeding seems to have a healthy psychological impact and possibly provide a greater sensation of confidence and safety during child development. The higher income and educational level of parents are also associated with sucking habits, such as pacifier sucking at the age range from 3 to 5 years [4].

Nonnutritive sucking habits are risk factors for the occurrence of anterior open bite and posterior crossbite. Heimer et al. [5] observed a significant reduction in the prevalence of anterior open bite with age, suggesting the self-correction of this malocclusion when the habit is discontinued.

Anxiety, stress, and loneliness may also trigger habits as nail biting, commonly observed in children, which may be originated from the thumb-sucking habit that is transferred...
to the nails. The clinical examination of these patients reveals
tooth crowding, rotation and wear of edges of mandibular
incisors, and protrusion of maxillary incisors [6].

The recognition and elimination of oral habits are extremely important also for the prognosis of periodontal
diseases. Some oral habits are considered cofactors in the
development of gingival recessions [7].

The sucking process is observed early at 29 weeks of
intrauterine life and is the first muscle coordination activity of
the child [8]. Even though the sucking habit is very common
during childhood and continued up to the second year of
life, immediate intervention is necessary in children with
operated clefts, because the habits have a great influence on
the treatment outcome of cleft lip and palate. The pressure
applied on the oral cavity muscles during sucking habits
interferes with the repair of cleft lip and palate [8].

The literature on oral habits in children with cleft lip and
palate is scarce. The objective of this study was to investigate
the oral habits among individuals with operated cleft with
and without palatal fistulae, compared to individuals without
clefts.

2. Material and Methods

The project was approved by the Institutional Review Board
(protocol number 286/2011). The study was conducted on 110
children with complete unilateral cleft lip and palate aged
three to six years, with or without palatal fistulae, attending
a reference craniofacial center in Brazil. Children were
included regardless of ethnicity and gender. Children with
associated anomalies, syndromes, and/or neuropsychomotor
developmental disorders were excluded.

Data were collected by a questionnaire responded by
the caretakers. Before onset, this questionnaire was applied
to ten individuals (not participating in the study) to check
if the caretakers might have any doubt in indicating their
responses. The questionnaire consisted of a form indicating
the several types of oral habits in which the caretakers had to
choose between “yes” or “no” and indicate the duration and
frequency of the habit (since when/how often).

These questionnaires were applied to caretakers of two
groups of children. The first (study) group comprised chil-
dren attending the pediatric dental clinic of the craniofacial
center during the study period. This group was further
divided in two subgroups, namely, with or without palatal
fistulae. To evaluate the presence of these fistulae, children
were submitted to clinical examination using a dental mirror
and tongue depressor, under artificial light, by a single ex-
aminer. Palatal fistulae were considered as present regardless of
their size and location, either in the hard, intermediate or soft
palate.

The second (control) group was composed of children
without clefts aged three to six years, attending a nursery
center in the city of Bauru, for comparison of results between
children with and without clefts.

The prevalence of oral habits between children with and
without clefts was compared by the Fisher test. The presence
of oral habits between children with clefts with or without
fistulae was assessed by the Fisher test followed by the Chi-
square test. All statistical tests were applied at a significance
level of $P < 0.05$.

3. Results

All children with clefts had already been submitted to surgical
repair. In this group, 65.3% of clefts affected the left side and
fistulae were observed in 42.72%, primarily affecting the hard
palate (74.5%), followed by the intermediate palate (17.1%),
soft palate (4.2%), and intermediate and hard palate (4.2%).
No significant association was observed between oral habits
and the presence of palatal fistulae according to the Fisher test
($P > 0.05$).

The results for both groups are presented in Figure 1. When compared to the control group, children with clefts
presented significant association with tongue thrusting at
rest, in speech and in swallowing, tongue sucking, object
sucking and interposition, lip sucking, cheek sucking, and
nail biting. Conversely, there was significant association
between the presence of cleft and lack of pacifier sucking
habit. There was no significant association ($P > 0.05$) with
thumb and finger sucking.

4. Discussion

This study analyzed the prevalence of oral habits in children
with cleft lip and palate compared to children without clefts,
correlating possible causes and interferences. Data were
collected by a questionnaire applied to the caretakers and
relied on their responses; thus, the following discussions
should be considered under the light of caretakers’ reports.
Mainly, the findings revealed lower prevalence of pacifier
sucking and higher prevalence of other habits in children with
clefts compared to children without clefts.

Silva Filho et al. [9] analyzed the most common habits
in children without clefts and reported pacifier sucking
among the most frequent (28.95%). In the present study,
the prevalence of pacifier sucking was higher in children
without clefts compared to children with clefts. In general,
the prevalence of sucking habits in children has been associated
with several factors including age, gender, ethnicity, number
of siblings, and socioeconomic status [10]. This study further
suggests that lip and palate repair surgeries performed early
may also interfere with the prevalence of oral habits as pacifier
sucking.

Satyaprasad [8] reported that even though some oral
habits are very common during childhood and persist up to
the second year of life, immediate intervention is necessary
in children with clefts because they may have a harmful
influence on the treatment outcome of cleft lip and palate. The
results of their electromyography study of several orofacial
muscles revealed that they remain active during sucking
habits, thus possibly altering the outcome of cleft treatment.

Patients submitted to surgeries for lip and palate repair
also present alterations in muscle functions in the orofacial
region. Due to the difference in the adaptability and functions
of muscles in the postoperative period, interventions and
additional care are necessary [8]. Therefore, the parents are
commonly advised by medical doctors, especially plastic
surgeons, to remove the pacifier sucking habit of their
children after the repair surgeries.

Mothers routinely report that they do not even offer
the pacifier to the child to avoid the establishment of the
habit. Almeida et al. [11] reported that finger or pacifier
sucking is normal in the onset of child development, and
the opposition of parents to these habits may cause negative
psychological consequences to the child. Franco et al. [12]
suggests knowledge on the etiology of acquisition of sucking
habits and how they may be harmful to allow their prevention
by follow-up and counseling to the parents.

Holanda et al. [4] highlighted that the pacifier-sucking
habit is significantly associated with age (3–5 years), with
greater association at the age of 3 years. The present study
included children aged 3 to 6 years to investigate the preva-
lence of oral habits and revealed that, in the case of children
with clefts, pacifier sucking is interrupted early by the parents
because of the lip and palate surgery, thus being uncommon
in this group of children.

Franco et al. [12] confirmed that, in children with clefts,
the acquisition of sucking habits may be influenced by
the repair surgeries at early ages, because they use arm
retainers in the first month after surgery, which precludes
placement of the hand and objects in the mouth, to avoid
trauma and infection. Interruption of pacifier sucking is
also recommended, making children to abandon the sucking
habit often present in earlier periods.

Considering the age range included in the study, all chil-
dren in the sample had already been operated, since lip repair
in the institution is usually performed at three months of age.
The higher prevalence of other habits than pacifier sucking,
such as tongue thrusting at rest, in speech and swallowing,
tongue sucking, interposition and sucking of other objects,
and lips, cheeks, and nail biting in the group of children
with clefts probably represents a substitution of habits by the
children, who are restrained from using the pacifier in the
postoperative period. It should be highlighted that such other
habits may also be harmful to the development of dental
occlusion. Habits as tongue thrusting and sucking may be
difficult to manage because of the prompt availability of the
involved structure, that is, the tongue rather than a foreign
object. Therefore, these children should be followed and
their caretakers properly counseled concerning the possible
occurrence of such habits to avoid their establishment or
allow early intervention.

This study did not demonstrate correlation between oral
habits and presence of fistulae. Passos et al. [13] con-
ducted a study in the same institution as the present investiga-
tion and observed that 27% of subjects in their study presented palatal
fistulae, reporting that the occurrence of palatal fistulae after
primary palatoplasty is not uncommon.

Passos et al. [13] further reported that, after discharge,
the caretakers of patients are advised by the nursing team and
receive a handout with information on the postoperative care
that must be followed until complete healing of the palate.
However, doubts may arise on the compliance with this care
and how this might significantly influence the formation
of fistulae, considering that many individuals assisted at
the institution present low socioeconomic cultural level,
in addition to the overindulgence observed in families of
children with clefts.

Investigation of the prevalence of oral habits and corre-
lation between fistula and oral habits in children with cleft
lip and palate is fundamental to allow better knowledge
and confidence of professionals treating these patients, who
may then offer better counseling for the patients’ parents or
caretakers.

In conclusion, considering the medical orientation on
the need to remove the pacifier-sucking habit when the
child is submitted to palatoplasty, due to the difference of

![Figure 1: Prevalence of oral habits in children with cleft lip and palate compared to the control group.](image-url)
adaptability and muscular functions in the postoperative period, the present findings reflect such advice, revealing lower prevalence of pacifier sucking and higher prevalence of other oral habits, supposedly a substitution of habits. No relationship was observed between habits and presence of palatal fistulae or dehiscences. Of course, the occurrence of palatal fistulae may also be influenced by other factors such as surgeon’s skill, postoperative infection, and care, besides others [13]. However, the present findings suggest the need of a prospective, randomized study to assess the actual influence of oral habits on the postoperative outcome, considering the possibility of substitution by other habits and their long-term consequences in the children’s lives.

References


