Breastfeeding among children with cleft lip and palate: An integrative review

Aleitamento materno entre crianças com fissura labiopalatal: Uma revisão integrativa
Lactancia materna en niños con labio y paladar hendido: Una revisión integradora

RESUMO
Objetivo: analisar a produção científica acerca da amamentação entre crianças com fissura labiopalatal. Método: Trata-se de uma revisão integrativa da literatura, a pesquisa ocorreu no primeiro semestre de 2021, a fim de responder à questão norteadora: Como se dá o aleitamento materno em crianças com fissura labiopalatal? Resultados: Identificou-se 14.519 estudos, todos títulos e resumos, selecionaram-se 37 para leitura na íntegra e destes 10 compuseram a amostra final. No aleitamento materno de crianças com fissura labiopalatal as técnicas mais utilizadas na amamentação são a seringa e a mamadeira com bico comum. Apresentam dificuldades de sucção insuficiente, deglutição excessiva de ar, engasgos e fadiga, desmame precoce, além disso, o grau da fissura demanda maior dificuldade. Conclusão: Observamos a importância da assistência do profissional de saúde no apoio às mães, na orientação, em capacitar, dar o sustento psicológico e físico durante o aleitamento materno de crianças com fissura labiopalatal.

DESCRITORES: Aleitamento materno; Fenda labial; Fissura palatina; Saúde das crianças.

ABSTRACT
Objective: to analyze the scientific production on breastfeeding among children with cleft lip and palate. Method: This is an integrative literature review, the research took place in the first half of 2021, in order to answer the guiding question: How is breastfeeding in children with cleft lip and palate? Results: 14,519 studies were identified, titles and abstracts were read, 37 were selected for full reading and of these 10 made up the final sample. In breastfeeding children with cleft lip and palate, the most used techniques in breastfeeding are the syringe and the bottle with a common nipple. They have difficulties with insufficient suction, excessive swallowing of air, choking and fatigue, early weaning, in addition, the degree of fissure demands greater difficulty. Conclusion: We observed the importance of health professional assistance in supporting mothers, in guidance, in enabling, providing psychological and physical support during breastfeeding of children with cleft lip and palate.

DESCRITORES: Breast Feeding; Cleft Lip; Cleft Palate; Child Health.

RESUMEN
Objetivo: analizar la producción científica sobre lactancia materna en niños con labio y paladar hendido. Método: Se trata de una revisión integrativa de la literatura, la investigación se realizó en el primer semestre de 2021, con el fin de responder a la pregunta orientadora: ¿Cómo es la lactancia materna en niños con labio y paladar hendido? Resultados: Se identificaron 14.519 estudios, se leyeron títulos y resúmenes, se seleccionaron 37 para lectura completa y de estos 10 conformaron la muestra final. En la lactancia de niños con labio y paladar hendido, las técnicas más utilizadas en la lactancia son la jeringuilla y el biberón con tetina común. Tienen dificultades por succión insuficiente, deglución excesiva de aire, atraigante y fatiga, destete precoz, además, el grado de fisura exige mayor dificultad. Conclusión: Se observó la importancia de la asistencia de los profesionales de la salud en el apoyo a las madres, en la orientación, en la habilitación, en el apoyo psicológico y físico durante la lactancia de los niños con labio y paladar hendido.

DESCRITORES: Fisura del Paladar; Lactancia Materna; Labio Leporino; Salud del Niño.

RECEBIDO EM: 08/06/2022 APROVADO EM: 18/07/2022

Allana Martins Vitorino
Nursing Academic. State University of Maringá/UEM, Maringá, Paraná, Brazil.
ORCID: 0000-0002-9819-4818

Felipe Fabbri
Nursing Academic. State University of Maringá/UEM, Maringá, Paraná, Brazil.
ORCID: 00000002-8042-909
INTRODUCTION

Cleft lip and palate is one of the most prevalent craniofacial congenital malformations worldwide, and can assume different locations and extension, and affect the child in isolation or be associated with other syndromes and anomalies. 1

The estimated incidence of this malformation in the world is one in 700 births 2, while in Brazil it is one case for every 1000 live births (1:1000). The cause of fissures is still not well known, but it is believed that a combination of genetic predisposition, which includes heredity, and environmental factors is believed. 2 Among the environmental factors, infections, chemical agents, drugs, alcohol and drug abuse and vitamin deficiencies stand out. 3

Clefts can be classified according to the characteristics of the incisive foramen of the palate as: complete or incomplete pre-foramen incisor clefts, unilateral or bilateral trans-foramen incisors clefts, complete or incomplete post-foramen incisors clefts. 4

The diagnosis of cleft can be performed from the ultrasound examination between the 28th and 33rd week of pregnancy, and it is important to refer the family to a specialized center during pregnancy, for better preparation and training of parents. 6 It is necessary to provide guidance on the main care, the possible risks involved, whether due to the functional and anatomical implications of the cleft and/or as a result of other identified anomalies, and the treatment to be followed. 7

The malformation can cause difficulties related to sucking and swallowing, making breastfeeding a challenge for both mother and baby. 8 Fatigue during feedings, prolonged feeding, impaired growth, esophageal reflux, nasal regurgitation and nutrition are also problems found in children with cleft lip and palate. 9

The level of suction inability is directly related to the type of crack. Generally, the infant who has a pre-foramen incisive cleft does not find it difficult to feed. However, those with cleft post-foramen incisors or trans-foramen may experience difficulties in expressing breast milk because they cannot achieve adequate intraoral pressure. 10

The importance of breast milk is widely known for its nutritional value, in the defense against infections, cooperating in the child’s cognitive and emotional development, in addition to providing a closer bond between mother and baby. 11 In children with cleft lip and/or palate, breastfeeding can be decisive for the maturation and growth of the face, due to the movement of facial muscles during breastfeeding and, subsequently, helping to obtain oral language. 7

It is extremely important that the child and the family are accompanied by a multidisciplinary team, whose members are competent to act in the clinical management of breastfeeding 7, in order to provide qualified and effective care, as well as provide well-being to patients. 2

Considering the importance of breastfeeding for child growth and development and the need to support this practice in cases of children with cleft lip and palate, in addition to the scarcity of current scientific investigations on the subject, the present study aims to analyze the scientific production on breastfeeding among children with cleft lip and palate.

METHOD

This is an integrative literature review, which is considered a research method that enables the search, critical evaluation and synthesis of the state of knowledge on a given subject. It was operationalized in six stages: 1. elaboration of the guiding question; 2. literature search; 3. data collection; 4. critical analysis of included studies; 5. Discussion of the results and 6. Presentation of the integrative review. 12 In order to
confer methodological quality on the study, it was carried out in accordance with the recommendations contained in the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) checklist.  

As a strategy to elaborate the guiding question, the acronym PICO (P: Population, I: Phenomenon of interest and Co: Context) was adopted. 14 The population of this research was considered to be children; cleft lip and palate as a phenomenon of interest and breastfeeding as a context of analysis. From this process, the following guiding question was defined: How is breastfeeding in children with cleft palate?  

The inclusion criteria established were: original articles published between 2010 and 2020 in Spanish, English and Portuguese. Articles that did not respond to the objective of the study, as well as theses, dissertations, and letters to the editor were excluded.  

Data collection took place in the first half of 2021 in the information sources: PubMed, EMBASE, PsycINFO, Virtual Health Library (VHL) and Cochrane. The selection of descriptors was made in consultation with the Medical Subject Headings (MeSH) and Health Sciences Descriptors (DeCS). The following controlled descriptors were chosen: breast feeding/breastfeeding; cleft lip/cleft lip and cleft palate/cleft palate. To formulate the search strategy, the Boolean operators AND and OR ((Breast Feeding) AND (Cleft Lip OR Cleft Palate) were used.  

The searches in the information bases were carried out by two researchers independently, in order to ensure methodological rigor and achieve the objective of the study.  

Initially, 14,519 studies were identified, whose titles and abstracts were carefully read. Of these, 37 were selected to be read in full, of which 17 were excluded for not answering the guiding question (they had an emphasis on the duration of breastfeeding, without describing how breastfeeding took place) and 10 for presenting duplicity. Thus, the final sample consisted of 10 articles. It should be noted that the references of the selected articles were read, but none answered the guiding question.  

To facilitate the understanding of the methodological path, a flowchart was prepared based on the recommendations contained in the PRISMA 

The articles selected in this review were published in international (eight) and national (two) journals. In relation to the place of development of the studies were found: London 20, 21, 22, India 23, United Kingdom 24, 25, Nigeria, that is, in the European continent, in America, in Asia and another in the African continent.  

Table 2 presents the main characteristics of the articles selected for this review: second year of publication, location, source of information, objective, research design, results and level of evidence.  

DISCUSSION  

For a better understanding of the findings, they will be presented in three categories: use of techniques for breastfeeding children with cleft lip and palate; presence of difficulties in breastfeeding and early weaning; and weight gain/loss in breastfeeding children with cleft lip
and palate.

Use of techniques for breastfeeding children with cleft lip and palate

There are several techniques used to help children with cleft lip and palate in the breastfeeding process, including: bottles with a common or special nipple 17, 18, 21, 22, 24, syringe scoop 25, dropper 19, Haberman feeder 19, paladai (small glass vessel with a long spout adapted for offering liquids) 23 and nipple shield with nasogastric tube. 16 The data obtained in the present study demonstrate that the bottle with a common nipple and the syringe are more efficient in breastfeeding children with cleft lip and palate. 17, 18, 21, 22, 24, 25

It is noteworthy that the bottle was the technique most used by mothers when there is no suction for breastfeeding at the breast, and in these cases the milk is expressed and offered in the bottle. Three types of baby bottles were highlighted, Dr. Brown’s, Mead Johnson and lastly the Haberman feeder, whose purpose is to help decrease the baby’s need for sucking, help swallowing, regulate milk flow, suck and prevent air from entering the feed. The difference between the bottles is in the functioning of each one, in the flexibility and in the specialized teat (bottle nipples). 26

---

Table 1 - Classification of levels of scientific evidence.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Evidence from syntheses of cohort or case-control studies.</td>
</tr>
<tr>
<td>II</td>
<td>Evidence from a single cohort or case-control study.</td>
</tr>
<tr>
<td>III</td>
<td>Evidence derived from meta synthesis or synthesis of descriptive studies.</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence derived from descriptive or qualitative studies.</td>
</tr>
<tr>
<td>V</td>
<td>Evidence from expert opinion.</td>
</tr>
</tbody>
</table>

Source: Prepared from the recommendation of Ribeiro et al, 2019; Maringh, PR, 2021.

---

Table 2 – Distribution of selected articles according to identification, year of publication, place of study, source of information, objective, methodological design, main results and level of evidence.

<table>
<thead>
<tr>
<th>ID/ YEAR / LOCATION / DATABASES</th>
<th>METHODS</th>
<th>FORMS OF BREASTFEEDING IN CHILDREN WITH CLEFTS</th>
<th>LE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1/2020 / London/ Embase</td>
<td>Case study on the feeding experience of a mother of a baby with complete unilateral cleft lip and palate.</td>
<td>Several techniques were tested, the most sustainable and successful was the use of a nipple shield applied to the maternal nipple-areola complex to cover the lip palate. Below, a nasogastric tube connected to a syringe released the mother’s own milk.</td>
<td>IV</td>
</tr>
<tr>
<td>A2/ 2020 / Brazil/ Embase</td>
<td>Cross-sectional and descriptive pilot study with a form applied to the parents of 162 children (3-5 years old).</td>
<td>Most children (83.3%) were bottle-fed and 12.3% exclusively breastfed (EBF). The main reason for weaning was the presence of clefts (59.9%). Breastfeeding was higher in children with CL* (75%) compared with CP** (20%) and CLP*** (5%) (p &lt; 0.001)</td>
<td>III</td>
</tr>
<tr>
<td>A3/ 2019 / United States/ Embase</td>
<td>An investigation study with a 29-item questionnaire was applied to 26 families.</td>
<td>Most parents reported initial difficulties with feeding their children, including: prolonged breastfeeding, insufficient sucking, nasal reflexes, choking, among others. They indicated the need to seek information and assistance from a variety of sources. As a result of the findings, an information resource was developed to inform rural health professionals on the issues of early feeding of children born with CL*, CLP*** or CP**.</td>
<td>IV</td>
</tr>
<tr>
<td>*A4/ 2017 / United States / Embase</td>
<td>Qualitative study, where parents of patients with oral clefts born from 2000 to 2012 were interviewed. Data were obtained from the parents of 110 patients with cleft mouth.</td>
<td>Breastmilk feeding rates increased successively during the 13-year study period. The most common method of providing breast milk was the Haberman feeder with 75%. Another 11% used a different specialty slotted bottle and the remaining 14% used other types of bottles.</td>
<td>IV</td>
</tr>
</tbody>
</table>
The benefits pointed out about the bottle were that when using them, there is no need for many movements, since the suction becomes smaller, making it possible to deliver milk to the child when compared to breastfeeding at the breast. In addition, the little movement performed helps in the initial oral development, and in addition, bottle-feeding proved to be an alternative for mother-baby proximity, as it allows physical contact.

It is important to highlight that the inappropriate use of nipples can be harmful to the development and growth of the child’s face, so the most indicated are orthodontic ones because they are short and anatomical. The nozzles need to be chosen according to flexibility, so that they fit correctly in the mouth, also by the size of the hole and the length. The consequences of using inappropriate nipples are diverse, including: muscle weakening when inverting the positions of the lips and damage to tooth and face development due to excessive forward force of the tongue.

As much as the aforementioned techniques have shown positive results, the palate obturator plate has the function of repairing primordial functions for humans and has been supported by health professionals, as it has provided these babies with a better quality of life.

In some cases, only with the correct position of the baby and the mother, it is already possible to breastfeed, this is due to gravity. For babies with cleft palate, it is recommended to breastfeed in an upright position above 60 degrees, in order to prevent the baby from having nasopharyngeal reflux and to assist in the passage of liquid. In addition, the semi-upright position helps to facilitate burping and delimits the child from

<table>
<thead>
<tr>
<th>A5/ 2016 22 / United States/ VHL</th>
<th>Mixed method study, so the evidence was synthesized through a narrative review of randomized clinical trials, qualitative studies, system reviews, professional guidelines and position statements.</th>
<th>Outcomes for feeding babies with CLP include assessing the baby’s sucking ability, demonstrating proper breastfeeding positioning, supporting mothers to establish and maintain their milk supply, consider adaptive feeding equipment (i.e., specialized bottles and teats) and education on the benefits of human milk.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A6/ 2015 23 / India/ PubMed</td>
<td>A prospective cohort study was used. Being the total sample of 150 children with 2 months of age with cleft lip and palate.</td>
<td>It was observed that the average weight of individuals in Group I with the palatai feeding technique was higher than the other two groups that have the bottle and spoon feeding technique, in all visits. It was found that the weight gain per week of Group I in the 4th, 6th and 8th month was significantly higher than in the other two groups.</td>
</tr>
<tr>
<td>A7/ 2014 24 / United Kingdom/ Psycinfo</td>
<td>Mixed method study that incorporates the use of diaries to record feeding, infant patterns, and levels of professional support received.</td>
<td>The study demonstrated that the most significant effect on weight was determined by the type of cleft. Babies with isolated clefts in the hard and soft palates had the most feeding problems and suffered the most weight loss. This remained significant regardless of the type of bottle/ nipple used.</td>
</tr>
<tr>
<td>A8/ 2013 26 / Brasil/ VHL</td>
<td>Descriptive cross-sectional study with an interview based on a pre-validated questionnaire.</td>
<td>Non-breastfeeding occurred in 78% of families. The feeding tube was used in 21%. According to the families, the bottle with a regular teat was considered the best option by most families (29%).</td>
</tr>
<tr>
<td>A9/ 2011 27 / Brazil/ VHL</td>
<td>In this research study, data were collected from 137 medical records of babies of both genders, with cleft lip and/or palate, born at term and who arrived for the first consultation in the pediatrics sector between zero and 12 months of age.</td>
<td>EBF occurred in 7.3% of the total sample, 6.57% in the pre-incisive foramen group and 0.73% in the post-incisive foramen group, but it did not occur in the incisor trans-foramen group. There was a significant association between the type of cleft and breastfeeding.</td>
</tr>
<tr>
<td>A10/ 2011 28 / Nigeria/ VHL</td>
<td>Intervention study, where 57 babies with cleft lip and palate were assigned to syringe feeding (intervention) or cup and spoon feeding.</td>
<td>Feeding babies with the syringe had better results, greater weight gain and also had less spillage and regurgitation compared to the other two techniques.</td>
</tr>
</tbody>
</table>

* CL (cleft lip); **CP (cleft palate); ***CLP (cleft lip and palate).

Source: Authors, 2021
expelling milk. However, there are other strategies that can be implemented by mothers, such as occluding the cleft with the thumb, positioning the breast in the largest part of the cleft, thus trying to achieve a more efficient negative pressure. 26

In this sense, the monitoring of the health team is essential, since professional performance can have a positive impact on the breastfeeding process, increasing breastfeeding rates. It is known that the success of breastfeeding depends on a multidisciplinary team, thus acting in social, aesthetic and functional improvement. A study showed differences in the results when the mother receives support and guidance from a health professional, especially nurses. 26

Therefore, it is up to the health professionals who provide assistance to these children and their families to be able to understand the theoretical and technical aspects regarding the breastfeeding of babies with cleft lip and palate. With adequate training, they can contribute positively to the mother-baby relationship, helping mothers in their choices, supporting their fears and afflictions, in addition to encouraging them not to give up on breastfeeding. 23

Furthermore, providing instrumental and informational support makes it easier for the mother to create confidence in herself and be able to go through this phase. Therefore, building an affective relationship between the professional and the family facilitates the entire process experienced, especially by mothers who, for the most part, carry out all the care with the breastfeeding of the baby. 28

Presence of difficulties in breastfeeding and early weaning

It was found that, even though sucking is a normal reflex since the 29th week of pregnancy, the difficulty in breastfeeding is constantly evidenced when it comes to babies with cleft lip and palate. 27 There are numerous impediments to breastfeeding children with clefts, such as insufficient suction, excessive air swallowing, choking and fatigue. 29 In addition, the mother’s cooperation in getting the baby to adapt to suck-swallow-breathe needs to be evaluated, as it may imply giving up breastfeeding. 20

It is important to point out that the degree of cleft results in greater or lesser difficulty in breastfeeding. Infants with cleft lip only tend to have less adversity, since breastfeeding is only possible with the correct positioning. However, infants with cleft palate generally need more support due to the presence of the junction between the nasal and oral cavity, thus increasing the risk of aspiration. 26

During childhood it is essential that growth and development take place properly, so breastfeeding in general is extremely important for children. Breast milk guarantees the necessary nutritional benefits, providing protection and stimulating the baby’s immune system, in addition to having psychological and physiological value for the mother-child binomial. 30

The World Health Organization and the Ministry of Health recommend exclusive breastfeeding (EBF), which is defined by the offer of breast milk, without other liquids or solids, in the first six months of the baby’s life, since breast milk is capable of supplying all the infant’s nutritional needs during this period; and supplemented up to two years or more. 28

Early weaning is a risk factor for preventable diseases, such as diarrhea, malnutrition, and can contribute to increased infant mortality. There are numerous causes for the interruption of breastfeeding, including: the need for mothers to work outside the home to help with household expenses; pathologies related to the breasts; refusal of the breast by the child and craniofacial congenital anomalies; children with cleft; and non-adaptation to breastfeeding methods. 30

Therefore, it is essential that Primary
Health Care (PHC) stimulates and encourages prenatal consultations, in order to welcome the pregnant woman from the beginning to the end of pregnancy, providing the birth of a healthy child. Furthermore, prenatal consultation is of paramount importance for the diagnosis of cleft lip and palate. A study showed that only 20% of parents had the information that their child had a cleft lip and palate in the gestational period. The diagnosis of clefts during pregnancy can contribute to the preparation of the family, through adequate guidance, and also in greater acceptance by the family. 27

Childcare is also a tool for monitoring the child’s physical, motor and cognitive growth and development, as well as an opportunity to encourage breastfeeding and provide guidance on the main problems experienced in this process and proper management. 29

In this context, breastfeeding should always be encouraged, considering the difficulties and adaptation needs of each child, as well as the fears and anxieties of mothers. Support during this period is crucial for the continuity of breastfeeding, providing the strengthening of bonds between mother and child and a healthier life. 31

Weight gain/loss in breastfeeding children with cleft lip and palate

The assessment of weight gain for a baby is very important, especially if he has some degree of cleft, due to possible feeding difficulties, which intensify according to the type of cleft. 27 In addition, for weight gain it is necessary to use the appropriate breastfeeding technique, as determined by the mother; and yet, some babies need the help of formula for supplementation.

Some studies relate weight gain to the technique used for breastfeeding, such as: paladai feeding, bottle, spoon, cup and syringe. However, the results are different considering the age-equivalent weight gain standardization. 21,25

It is noticed that there are different techniques being used during the breastfeeding of children with cleft lip and palate, this fact may be related to the low level of nutritional counseling in maternity hospitals, that is, the technique used can interfere with weight gain and loss. Therefore, there is a need for training and health education with professionals on the techniques that can be used in breastfeeding, so that they can know the right moment to make the change in the way of breastfeeding, in addition to advising mothers about the nutrition of babies born with orofacial clefts. 35

In the case of weight loss, the findings point to the relationship between the types of isolated clefts in the hard and soft palate. Hard palate cleft alone resulted in less weight gain compared to other cleft types. 34 In this sense, sometimes the use of the formula for weight gain is necessary. A study showed that babies fed with breast milk and a combination of formula had a significant weight gain of 1.2 kg between 10 and 14 weeks of life. 35

Mothers with children diagnosed with cleft lip and palate report greater breastfeeding challenges than those diagnosed with cleft lip alone. It is assumed that the obstacle in direct breastfeeding is the anatomical defect of the baby, which, if not properly evaluated, can lead to weight loss. 31

Furthermore, low weight seems to be common among children with orofacial clefts, due to the weak sucking reflex. 33 This reverberates in the mothers’ response to the challenges encountered in the breastfeeding process. Without specialized support and adequate guidance, many mothers end up giving up on breastfeeding their children. 35

Qualitative case study research showed the use of artificial milk in children with cleft lip and palate, which was possibly prescribed because it is a more practical method for child nutrition. However, the use of artificial milk should be a last resort. 34

The importance of monitoring the child’s weight and clinical examination during childcare is therefore highlighted, in order to guide the decision-making of health professionals regarding the need to perform supplementation or not of a child exclusively breastfed. In addition, the decision to use the formula for supplementation should be discussed with family members. 35

A limitation of the study was the scarcity of scientific production on the subject, even with the inclusion of open and restricted access studies. Anyway, the results found can support reflections on breastfeeding in children with cleft lip and palate and encourage the development of strategies that support mothers and children in the establishment and continuity of breastfeeding.

CONCLUSION

During breastfeeding in children with cleft lip and palate, there are techniques that are more used, however difficulties permeate during this process and that often result in early weaning, as well as weight gain/loss as a significant parameter for these children.

The importance of health professionals in assisting mothers and infants gained visibility, showing how essential their participation in breastfeeding is, in actions such as supporting, guiding, training and providing physical and emotional support. Consequently, the professional can help reduce early weaning rates and assess weight gain to avoid malnutrition in babies.

The study provides contributions to the health area, mainly in the monitoring of families who have children with cleft lip and palate, since it provides instrumental and informational support.

Furthermore, the findings of the study reinforce the importance of further research on the subject, especially in the PHC context, since this service can greatly contribute to the breastfeeding of babies with cleft lip and palate and their families.
REFERENCES


