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SUPERIOR LABIAL FRENULUM AND BREASTFEEDING IN INFANTS

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ABSTRACT

This study aimed to classify the different types of insertion of the upper labial frenulum and their association with breastfeeding. It was a cross-sectional survey conducted from September 2020 to July 2022, involving 616 mother-infant pairs, with infants aged 0 to 12 months, participating in the Preventive Program for Pregnant Women and Babies extension project. The anatomical and morphological characteristics of the upper labial frenulum and the type of breastfeeding were examined. A Poisson regression model was applied to assess the association between the insertion of the upper labial frenulum and breastfeeding, with adjustment covariates selected using a Directed Acyclic Graph. The most common frenulum insertion was on the attached gingiva (65.2%), followed by the palatal surface (14%) and near the mucogingival junction (20.8%). Regarding breastfeeding, 70.8% of infants were exclusively breastfed (EBF), 17% predominantly breastfed (PBF), 1.8% received complementary

feeding (CBF), and 0.5% were not breastfed. After adjustment, no significant association was found between the upper labial frenulum with palatal insertion and EBF (Prevalence Ratio 1.07; 95% Confidence Interval: 0.93-1.23). The findings suggest that infants with a maxillary labial frenulum insertion extending to the palatal face did not show any association indicating a negative impact on breastfeeding.

Keywords: Lip Brake. Breastfeeding. Infant.

INTRODUCTION

It is important for the dentist to have initial contact with the mother during pregnancy to provide information about both oral and general care, for herself and the baby (Favero et al, 2021). Additionally, it is crucial to explain the key anatomical structures of the new-born's oral cavity, which, according to some studies, may either facilitate or hinder the breastfeeding process depending on their placement, such as the superior labial frenulum (Kotlow, 2013). With the development of paediatric dentistry, focusing on early intervention, there has been an increased demand for these services, and studies on this topic for very young infants have been conducted (Lopes; Deus Moura; Lima; 2013, Patel, King; 2018).

Breastfeeding is essential for the healthy growth of the new-born, promoting the mother-infant bond, and supporting the development of the child's immune system, among other benefits (Victora et al, 2016). It is important to note that a diagnosis of a restrictive labial frenulum can be made shortly after birth, which may negatively impact breastfeeding due to poor latch, inefficient sucking, or painful feeding (Pransky; Lago; Hong, 2015; Patel; Schwartz; Rosenfeld, 2019; Shah et al., 2021). The early diagnosis of maxillary frenulum insertion is crucial, as it allows for timely interventions when necessary, improving the quality of life for both mothers and babies (Razdan et al, 2020).

Given the significance of this topic, this study aims to classify the various types of upper labial frenulum insertion and evaluate their association with breastfeeding, thereby enhancing the existing body of knowledge.

METHODS

Study design, ethical information, and setting

This cross-sectional study was designed in accordance with the guidelines of the "Strengthening the Reporting of Observational Studies in Epidemiology" (STROBE Statement) (Vandenbroucke et al., 2007). The study was conducted following the ethical standards of the 1964 Declaration of Helsinki and Resolution No. 466 of 12 December 2012, and was approved by the Research Ethics Committee of the Federal University of Piauí, with approval number 4.122.069. The research was carried out in Teresina, located in the state of Piauí in the Northeast region of Brazil.

Participants

The population comprised 616 mother-infant pairs attending the Preventive Programme for Pregnant Women and Babies (PPGB, acronym in Portuguese), an extension project of the Federal University of Piauí. This programme operates from the Institute of Social Perinatology of Piauí and provides services through the Brazilian Unified Health System (SUS). After obtaining Informed Consent, participants received information on breastfeeding, hygiene, and oral care. Clinical examinations were conducted on infants aged 0 to 12 months (both preterm and full-term), and data were collected through a sociodemographic questionnaire completed by the mothers.

Exclusion criteria included: parents who declined to participate, children for whom the examination could not be performed, patients with syndromes or neurological disorders, and those with cleft lip and palate. The study was conducted from September 2020 to July 2022.

Variables

An anatomical assessment was carried out on the following oral structures: the insertion of the superior labial frenulum, which was classified into three types: near the mucogingival junction, on the attached gingiva, and at the incisive papilla, extending towards the palatal surface (Santa Maria et al., 2017). Additionally, factors such as birth weight, breastfeeding (according to WHO guidelines) (WHO, 2017), and both nutritive and non-nutritive sucking habits were evaluated. Examinations were

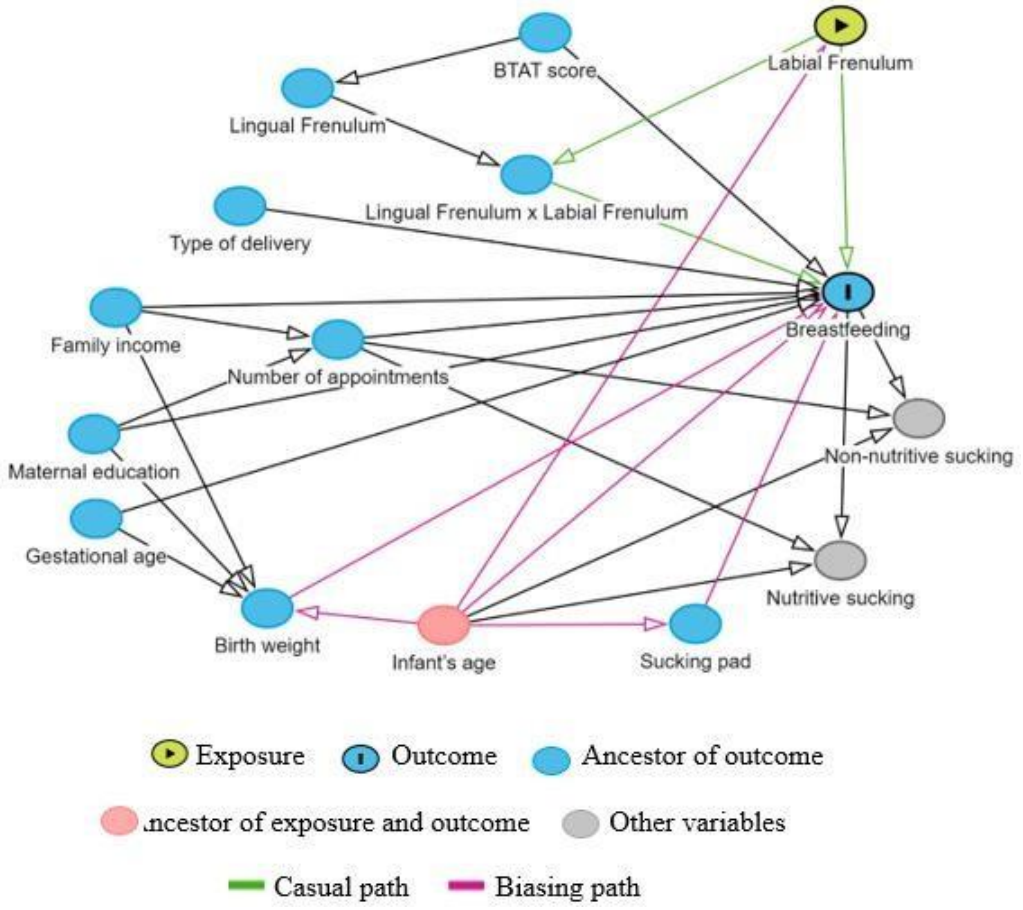
carried out at the PPGB, in a knee-to-knee position, using personal protective equipment. Prior to the examination, parents signed the Informed Consent Form, and the collected data were recorded in the infant's oral health record.

Statistical Analysis

The data were organised and tabulated using Microsoft Excel 2010 for Windows, and statistical analyses were performed with Stata version 16.1 for Windows (StataCorp LP, College Station, Texas, USA). Univariate analysis involved descriptive statistics, with qualitative variables presented as absolute and relative frequencies. For bivariate analysis, Fisher's Exact Test was used to evaluate associations between qualitative variables.

In the multivariate analysis, Poisson regression with robust standard errors was applied to assess the association between the superior labial frenulum with palatal insertion and exclusive breastfeeding in infants. To represent the relationships between study variables and identify potential confounders for adjustment in the regression model, a Directed Acyclic Graph (DAG) was constructed (Figure 1). This approach also aids in distinguishing mediators, avoiding unnecessary adjustments, and preventing collider bias in observational studies (Tennant et al., 2021). Finally, prevalence ratios (PR) with 95% confidence intervals (95% CI) were estimated, and significance was determined using the Wald chi-square test. A significance level of 5% was used for all analyses.

Figure 1: Directed acyclic graph for the association between the superior labial frenulum with palatal insertion and exclusive breastfeeding



RESULTS

Table 1 presents the sociodemographic and clinical characteristics of the study participants. Exclusive breastfeeding (EBF) was the most common, reported in 70.8% of cases, followed by predominant breastfeeding (PBF) at 17%, mixed breastfeeding (MBF) at 9.9%, and complementary breastfeeding (CBF) at 1.8%. Additionally, only 0.5% of infants were not breastfed (Figure 2).

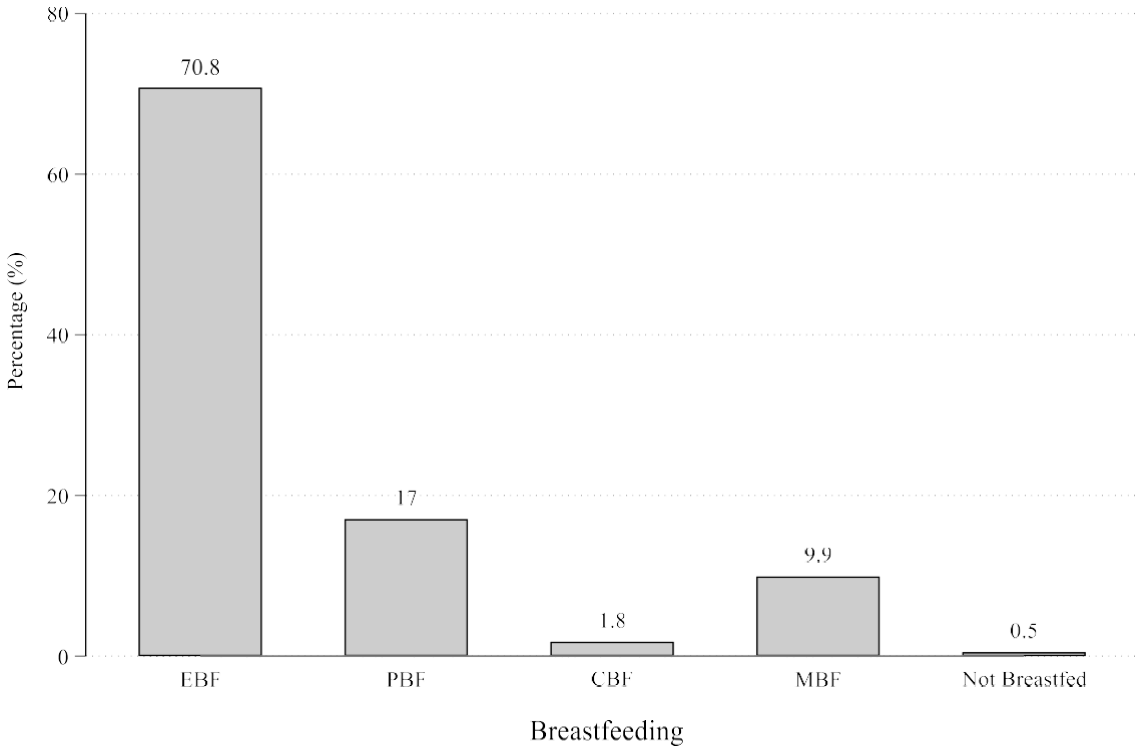
Table 1: Characteristics of the mother-infant pairs participating in the study

Variables	n	%
Maternal education (years of study)		
< 3	2	0.3
3-6	21	3.4
7-10	149	24.2
≥ 11	444	72.1
Family income (NMW)		
≤ 1	80	13.0
2-3	249	40.4
4-5	214	34.7

≥ 6	73	11.9
Gestational age		
Preterm	489	79.4
Term	127	20.6
Type of delivery		
Vaginal	166	27.0
Caesarean section	450	73.0
Infant's sex		
Male	303	49.2
Female	313	50.8
Infant's age (months)		
0-3	570	92.5
4-6	28	4.6
7-11	18	2.9
Mean (SD)	0,8	1.8
Birth weight		
Low weight	98	15.9
Adequate	491	79.7
Excessive	27	4.4
Number of appointments at the PPGB		
1	605	98.2
2	10	1.6
3	1	0.2
Nutritive sucking habits		
None	448	72.7
Bottle	153	24.8
Cup	9	1.5
Syringe	3	0.5
Other	3	0.5
Non-nutritive sucking habits		
None	474	76.9
Pacifier	106	17.2
Thumb-sucking	35	5.7
Tongue sucking	1	0.2
Sucking pad		
Absente	146	23.7
Present	470	76.3
BTAT score		
≤ 3	19	3.1
4-5	57	9.2
> 5	540	87.7
Lingual Frenulum		
No alteration	525	85.2
Partial ankyloglossia	74	12.0
Total ankyloglossia	17	2.8
Labial Frenulum Insertion		
Near the mucogingival junction	128	20.8
On the attached gingiva	402	65.2
On the palatal surface	86	14.0

Abbreviations: SD, standard deviation; NMW, national minimum wage in Brazilian reais; PPGB, Preventive Programme for Pregnant Women and Babies; BTAT - Bristol Tongue Assessment Tool.

Figure 2: Breastfeeding patterns.



Abbreviations: EBF, exclusive breastfeeding; PBF, predominant breastfeeding; CBF, complementary breastfeeding; MBF, mixed breastfeeding.

Table 2 shows the regression model for the association between the superior labial frenulum with palatal insertion and EBF in infants, adjusted for variables recommended by the DAG. A 7% increase in the prevalence of EBF was observed in infants with a superior labial frenulum compared to those without (PR = 1.07; 95% CI: 0.93-1.23), although this association was not statistically significant (p = 0.303). Furthermore, a 15% reduction in EBF prevalence was noted for each additional month of the infant's age (PR = 0.85; 95% CI: 0.81-0.90), with this association being statistically significant (p < 0.001).

Table 2: Regression model for the association between upper labial frenulum insertion on the palatal surface and exclusive breastfeeding in infants.

Variables	Exclusive breastfeeding		Adjusted PR (95% CI)	p-value
	No	Yes		
Upper labial frenulum with palatal insertion				
No	157 (29.6)	373 (70.4)	Reference	
Yes	23 (26.7)	63 (73.3)	1.07 (0.93-1.23)	0.303
Infant's age (months)*			0.85 (0.81-0.90)	<0.001
0-3	149 (26.1)	421 (73.9)	-	-
4-6	14 (50.0)	14 (50.0)	-	-
7-11	17 (94.4)	1 (5.6)	-	-

Abbreviations: PR, prevalence ratio; CI, confidence interval
*The variable was assessed on a continuous scale.

DISCUSSION

This study classified the different types of labial frenulum insertion and evaluated their association with breastfeeding. It also examined the anatomical and morphological characteristics of the superior labial frenulum, along with birth weight, breastfeeding practices, sucking habits, and other specific traits, predominantly in female infants aged between 0 and 12 months.

Regarding birth weight classification, it was found that 98 infants (15.9%) were born with low birth weight, while 27 infants (4.4%) were born with excessive birth weight. Birth weight, measured within the first hours after delivery, reflects the nutritional status of both the new-born and the mother and is a crucial indicator of individual health. This factor significantly impacts the child's growth and development and, in the long term, adult health conditions. The observed values are consistent with those reported in other studies in the literature (Silveira et al, 2019; Paixao et al, 2021).

The findings of this study also underscore the critical role of sucking as the first coordinated muscle activity in infants and its essential function for new-born survival. Sucking is an innate reflex in humans, and understanding its various manifestations provides valuable insights into infant behaviour and development (Harding et al., 2018). Oral sucking habits are categorised into nutritive and non-nutritive types. Non-nutritive sucking includes behaviours such as using pacifiers, thumb sucking, and sucking on other objects or body parts (Santos Neto et al., 2012). The prevalence of

these habits can significantly impact breastfeeding (Queiroz et al, 2010; Lopes; Deus Moura; Lima; 2013).

The results indicate that 17.2% of infants used pacifiers, 5.7% engaged in thumb sucking, and a substantial 76.9% did not display any non-nutritive sucking habits. These findings align with existing literature suggesting that non-nutritive sucking, particularly the use of pacifiers and thumb sucking, can interfere with breastfeeding during the critical early stages when infants are learning to latch onto the breast. This interference may contribute to nipple confusion, a well-documented issue in breastfeeding literature (Queiroz et al, 2010; Albuquerque et al, 2010).

In terms of nutritive sucking habits, our study found that 24.8% of infants used bottles, while a small percentage were fed using cups (1.5%) or other methods (0.5%). The majority of infants (72.7%) did not exhibit any specific nutritive sucking habits. These observations are consistent with the Ministry of Health of Brazil (Brasil, 2009), which reported high rates of bottle use (58.4%) and pacifier use (42.6%) among children under 12 months. These results highlight the prevalence of these feeding practices and their potential implications for infant feeding patterns and overall health.

Other studies have shown an association between pacifier use and a reduction in the duration of breastfeeding (Santos Neto et al., 2008; Naylor, 2001). These findings have contributed to the recommendations from the World Health Organization (WHO) and UNICEF to avoid the use of pacifiers (WHO, 1991). However, some researchers argue that there is no clear link between pacifier use and reduced breastfeeding (Nyqvist et al., 2013; Lubbe; Ten Ham-Baloyi, 2017). They suggest that pacifier use may instead indicate existing difficulties or a decrease in maternal motivation to breastfeed[26]. Furthermore, factors beyond pacifier use, such as behavioural and psychological aspects, are significant predictors of breastfeeding duration. Notable among these are depressive symptoms, the need to return to school or work, and maternal perceptions of milk production and the subsequent need for supplemental feeding (Pineros-Leano et al, 2021; Shah et al., 2021; Woldetensay et al, 2021).

It is to emphasise that the superior labial frenulum, located on the inner and central portion of the upper lip, plays a crucial role in creating a vacuum that facilitates breastfeeding by enhancing latch. In this study, the most common frenulum insertion was into the attached gingiva, observed in 65.2% of infants, which is generally

considered favourable for breastfeeding. In contrast, insertion into the palatine surface was found in 14.0% of infants and is typically regarded as less favourable (Santa Maria et al., 2017).

The findings of this study regarding frenulum insertion extending to the palatal surface differ from those reported in previous research, who found that only 2% of infants had a tethered upper lip, with 100% of these cases showing improvement in breastfeeding following frenotomy (Pransky; Lago; Hong, 2015). These variations may be attributed to differences in study populations or methodologies. Other studies have also highlighted the role of ankyloglossia and labial ties in breastfeeding difficulties, indicating that such anatomical variations can impede latch and lead to painful or inefficient milk transfer, depending on their positioning (Kotlow, 2013; Benoiton; Morgan; Baguley, 2016). Furthermore, significant improvements in breastfeeding outcomes have been reported following the surgical release of the tongue or lip frenulum, with benefits observed as early as one-week post-operation and continuing for up to a month (Ghaheri et al, 2017).

The results of this study align with previous reports that identified 10% to 12% (Nadar, 2017; Santa Maria et al., 2017), of frenula extending to the palatal surface. These studies also noted that approximately 82% of mothers reported improved latch and 73% experienced reduced nipple pain or discomfort following frenulum release. However, the results differ from other research that reported a 28.6% rate of frenulum attachment to the fixed gingiva, highlighting variability in frenulum attachment patterns (Razdan et al., 2020; Naimer; Israel; Gabbay, 2021). These discrepancies emphasize the need for further investigation to better understand the impact of frenulum anatomy on breastfeeding outcomes and to enhance clinical guidelines.

In this study, 70.8% of infants were exclusively breastfed. These findings are consistent with data from the Brazilian National Survey on Child Nutrition (ENANI-2019), which reported that approximately 45.8% of children under six months are EBF, and around 60% of infants are initiated into breastfeeding early (Boccolini et al., 2023). Similarly, other studies have shown an EBF prevalence of 48.6% in infants up to six months of age. The higher rate of EBF observed in this study (70.4%) may be explained by the younger age of the infants, the majority being under three months old (Lopes; Deus Moura; Lima; 2013).

The prevalence of EBF among children under six months was reported as 41.0% across Brazilian capitals and the Federal District[21]. In contrast, another study reported a significantly lower rate of 19% for EBF and 16% for PBF at 180 days, with a subsequent increase to 56% for breastfeeding at 361 days (Ramos et al, 2010).

The study's findings regarding the association between the palatine frenulum and EBF were not statistically significant. This aligns with existing literature suggesting no clear correlation between the classification of the upper lip frenulum and breastfeeding outcomes, such as latch effectiveness or pain levels. Additionally, previous research has found no significant relationship between the length of the maxillary frenulum and lip anatomy in children, further supporting the view that anatomical variations in the frenulum may not directly influence breastfeeding success (Shah et al, 2021).

Limitations and Strengths

This study has several limitations. The cross-sectional design, which prevents causal inferences about the relationship between palatine frenulum insertion and breastfeeding outcomes. Additionally, the reliance on observational data may introduce biases, such as parental reporting biases in the sociodemographic and breastfeeding practices data. The relatively small sample size and the predominance of infants under three months of age may also limit the generalizability of the findings to a broader population of infants across different age ranges.

On the other hand, the study's strengths include the use of a DAG to model relationships between variables and adjust for potential confounders enhances the study's robustness and validity. The comprehensive analysis of various types of breastfeeding practices and the detailed examination of frenulum insertion types provides valuable insights. The high prevalence rates of exclusive breastfeeding observed in this study align with recent literature and contribute to a deeper understanding of early infant feeding practices. Overall, these strengths underscore the study's contribution to the field and its relevance to current breastfeeding guidelines and practices.

CONCLUSION

Our findings highlights that the most common frenulum insertion type was at the attached gingiva, which is considered to be the most favourable for breastfeeding. However, the association between frenulum insertion and exclusive breastfeeding was not statistically significant, suggesting that other factors may play a more substantial role in influencing breastfeeding success.

REFERENCES

ALBUQUERQUE SSLD, Duarte RC, Cavalcanti AL, Beltrão ÉDM. **A influência do padrão de aleitamento no desenvolvimento de hábitos de sucção não nutritivos na primeira infância**. Ciênc Saúde Coletiva. 2010;15(2):371–8.

BENOITON L, Morgan M, Baguley K. **Tratamento de anquiloglossia posterior e lábio superior preso em uma clínica ambulatorial de otorrinolaringologia terciária**. Int J Pediatr Otorhinolaryngol. 2016;88:13–6.

BOCCOLINI CS, Lacerda EMDA, Bertoni N, Oliveira N, Alves-Santos NH, Farias DR, et al. **Tendências dos indicadores de amamentação no Brasil de 1996 a 2019 e as lacunas para atingir as metas da OMS/UNICEF para 2030**. BMJ Glob Health. 2023;8(9) :e012529 .

BRASIL. **Ministério da Saúde do Brasil, Secretaria de Atenção à saúde, Departamento de Ações programáticas e estratégicas**. II Pesquisa de Prevalência de Aleitamento Materno nas Capitais Brasileiras e Distrito Federal — Ministério da Saúde. Brasília, Distrito Federal: Ministério da Saúde; 2009.

FREIRE GLM, Ferrari JCL, Percinoto C. Associação entre aleitamento materno e o desenvolvimento de hábitos de sucção não nutritivos. RGO, **Rev Gaúch Odontol**. 2015;63(2):139–44.

GHAHERI BA, Cole M, Fausel SC, Chuop M, Mace JC. **Melhoria da amamentação após liberação de língua presa e lábio preso: um estudo de coorte prospectivo**. Laringoscópio. 2017;127(5):1217–23.

HARDING C, Cockerill H, Cane C, Law J. **Usando sucção não nutritiva para apoiar o desenvolvimento da alimentação de bebês prematuros: um comentário sobre abordagens e práticas atuais**. J Pediatr Rehabil Med. 2018;11(3):147–52.

KOTLOW LA. **Diagnosticando e entendendo o freio labial maxilar** (labial superior, freio labial maxilar) em relação à amamentação. J Hum Lact. 2013;29(4):458–64.

LOPES TSP, De Deus Moura LDFA, Lima MCMP. **Amamentação e hábitos de sucção em crianças matriculadas em um programa de saúde materno-infantil**. BMC Res Notes. 2014;7(1):362.

LUBBE W, Ten Ham-Baloyi W. **Quando o uso de chupetas é justificável no contexto da iniciativa de hospital amigo da criança?** Um guia clínico. BMC Pregnancy Childbirth. 2017;17(1):130.

NADAR S. **Fixação do frênulo labial maxilar em crianças de diferentes faixas etárias**. Int J Curr Res. 2017;9(5):50367–9.

NAIMER SA, Israel A, Gabbay A. **Significado do frênulo maxilar preso:** um estudo de coorte observacional baseado em questionário. Clin Exp Pediatr. 2021;64(3):130–5.

NAYLOR AJ. **Iniciativa Hospital Amigo da Criança: protegendo, promovendo e apoiando a amamentação no século XXI**. Pediat Clin N. 2001;48(2):475–83.

NYQVIST KH, Häggkvist AP, Hansen MN, Kylberg E, Frandsen AL, Maastrup R, et al. **Expansão da iniciativa do hospital amigo da criança dez passos para uma amamentação bem-sucedida em cuidados intensivos neonatais**: recomendações de grupos de especialistas. J Hum Lact. 2013;29(3):300–9.

PATEL J, Anthonappa RP, King NM. All Tied Up! **Influências dos frênulos orais na amamentação e suas estratégias de manejo recomendadas**. J Clin Pediatr Dent. 2018;42(6):407–13.

PATEL PS, Wu DB, Schwartz Z, Rosenfeld RM. **Frenotomia do lábio superior para problemas de amamentação neonatal**. Int J Pediatr Otorhinolaryngol. 2019;124:190–2.

PINEROS-LEANO M, Saltzman JA, Liechty JM, Musaad S, Aguayo L. **Sintomas depressivos maternos e sua associação com resultados de amamentação e peso infantil**. Crianças. 2021;8(3):233.

PRANSKY SM, Lago D, Hong P. **Dificuldades na amamentação e anomalias da cavidade oral: a influência da anquiloglossia posterior e dos laços do lábio superior**. Int J Pediatr Otorhinolaryngol. 2015;79(10):1714–7.

QUEIROZ AM de, Silva FWG de P e, Borsatto MC, Nelson Filho P, Silva LAB da, Díaz-Serrano KV. **Inter-relação padrão de aleitamento e hábitos de sucção não nutritivos**. Odontol Clin Cient. 2010;9(3):209–14.

RAZDAN R, Callaham S, Saggio R, Chafin M, Carr MM. **Frênulo maxilar em recém-nascidos: associação com amamentação**. Otolaryngol Head Neck Surg. 2020;162(6):954–8.

RAMOS CV, Almeida JAGD, Saldiva SRDM, Pereira LMR, Alberto NSMDC, Teles JBM, et al. **Prevalência do Aleitamento Materno Exclusivo e os fatores a ele associados**

em crianças nascidas nos Hospitais Amigos da Criança de Teresina - Piauí. EpidemiolServ Saúde. 2010;19(2).

SANTA MARIA C, Aby J, Truong MT, Thakur Y, Rea S, Messner A. **O frênulo labial superior em recém-nascidos: o que é normal?** Glob Pediatr Health. 2017;4:2333794X17718896.

SANTOS NETO ETD, Oliveira AE, Barbosa RW, Zandonade E, Oliveira ZFL. **A influência dos hábitos de sucção no desenvolvimento da oclusão nos primeiros 36 meses**. Dental Press J Orthod. 2012;17(4):96–104.

SANTOS NETO ETD, Oliveira AE, Zandonade E, Molina MDCB. Uso de chupeta como fator de risco para redução da duração do aleitamento materno: uma revisão sistemática. **Rev Bras Saúde Mater Infantil**. 2008;8(4):377–89.

SHAH S, Allen P, Walker R, Rosen-Carole C, McKenna Benoit MK. **Freio do lábio superior:** anatomia, efeito na amamentação e correlação com anquiloglossia. Laringoscópio. 2021;131(5): E1701 –6.

SILVEIRA MF, Victora CG, Horta BL, Da Silva BGC, Matijasevich A, Barros FC, et al. **Baixo peso ao nascer e parto prematuro: tendências e desigualdades em quatro coortes de nascimento de base populacional em Pelotas, Brasil, 1982–2015**. Int J Epidemiol. 2019;48(Suppl 1): i46 –53.

TENNANT PWG, Murray EJ, Arnold KF, Berrie L, Fox MP, Gadd SC, et al. **Uso de gráficos acíclicos direcionados (DAGs) para identificar fatores de confusão em pesquisa aplicada em saúde**: revisão e recomendações. Int J Epidemiol. 2021;50(2):620–32.

VANDENBROUCKE JP, Von Elm E, Altman DG, Gøtzsche PC, Mulrow CD, Pocock SJ, et al. **Fortalecimento do Relatório de Estudos Observacionais em Epidemiologia** (STROBE): Explicação e Elaboração. PLoS Med. 2007;4(10): e297 .

VICTORA CG, Bahl R, Barros AJD, França GVA, Horton S, Krasevec J, et al. **Amamentação no século XXI: epidemiologia, mecanismos e efeito ao longo da vida**. Lancet. 2016;387(10017):475–90.

WOLDETENSAY YK, Belachew T, Ghosh S, Kantelhardt EJ, Biesalski HK, Scherbaum V. **O efeito dos sintomas depressivos maternos nas práticas de alimentação infantil na Etiópia rural**: estudo de coorte de nascimentos baseado na comunidade. Int Breastfeed J. 2021;16(1):27.

Organização Mundial da Saúde. Diretriz: proteger, promover e apoiar a amamentação em instalações que fornecem serviços de maternidade e recém-nascidos. Genebra, Suíça: **Organização Mundial da Saúde**; 2017.

Organização Mundial da Saúde, Fundo das Nações Unidas para a Infância. Iniciativa de hospital amigo da criança. Suíça, Genebra: **Organização Mundial da Saúde**; 1991.