



## BREASTFEEDING AS A VACCINATION SUPPORT TOOL: SOCIAL REPRESENTATIONS OF MOTHERS AND NURSING PROFESSIONALS

### AMAMENTAÇÃO COMO FERRAMENTA DE SUPORTE À VACINAÇÃO: REPRESENTAÇÕES SOCIAIS DE MÃES E PROFISSIONAIS DE ENFERMAGEM

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**Abstract:** Objective: to understand the representations of mothers and nursing professionals regarding breastfeeding of newborns during the first hepatitis B vaccine. Method: Qualitative study, carried out in the shared accommodation of a university hospital located in the northern region of Paraná, based on the Theory of Social Representations. Data were analyzed with the help of the IRAMUTEQ software. Results: Data collection took place between April and May 2023, through individual audio-recorded interviews with 19 mothers of newborns and 13 nursing professionals, using a semi-structured instrument. The analysis allowed the identification of two thematic categories: 1. Breastfeeding during vaccination: transforming maternal paradigms, and 2. Pain management during vaccination through breastfeeding. Final considerations: Breastfeeding during vaccination was represented as a beneficial practice, recognized not only as a non-pharmacological intervention, but as a symbolic and affective care resource, with the potential to transform institutional practices and maternal beliefs.

**Keywords:** Predominant Breastfeeding; Newborn; Pain Management; Vaccination; Mother-Child Relations.

**Resumo:** Objetivo: apreender as representações maternas e de profissionais de enfermagem sobre a amamentação durante a administração da primeira dose da vacina contra hepatite B em recém-nascidos. Método: Estudo qualitativo, realizado no alojamento conjunto de um hospital universitário localizado na região norte do Paraná, fundamentado na Teoria das Representações Sociais e os dados foram analisados com o auxílio do software IRAMUTEQ. Resultados: A coleta de dados ocorreu entre abril e maio de 2023, por meio de entrevistas individuais audiogravadas com 19 mães de recém-nascidos e 13 profissionais de enfermagem, utilizando um instrumento semiestruturado a análise permitiu identificar duas categorias temáticas: 1. Amamentação no ato da vacinação: transformando paradigmas maternos, e 2. Manejo da dor durante a vacinação por meio da amamentação. Considerações finais: A amamentação durante a vacinação

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foi representada como uma prática benéfica, reconhecida não apenas como intervenção não farmacológica, mas como um recurso simbólico e afetivo de cuidado, com potencial de transformar práticas institucionais e crenças maternas.

**Palavras-chave:** Aleitamento Materno; Recém-nascido; Manejo da Dor; Vacinação; Relações Mãe-Filho.

## 1 Introduction

Breastfeeding has numerous benefits for the mother-child binomial. However, barriers to the full breastfeeding process have to be overcome. Breastfeeding is a physiological and natural process and the best way to nourish, protect, and love a newborn (NB). Therefore, it is imperative to disseminate and raise awareness about the benefits that breastfeeding can provide (Silva *et al.* 2022).

Breastfeeding brings short- and long-term benefits to both the newborn and the mother. This practice promotes both parties' well-being and health, by favoring emotional bonds, providing safety and tranquility during breastfeeding, and contributing, over time, to the prevention of neonatal morbidity and mortality, especially when exclusive breastfeeding is maintained for longer periods (Campos *et al.* 2020; Prepelita *et al.* 2020).

Vaccination is the most efficient way to reduce infant mortality and prevent infectious diseases (Domingues *et al.* 2020). In this context, in Brazil, the National Immunization Program (PNI) should be highlighted, which was created in 1973, and undoubtedly contributes to improving quality of life and increasing life expectancy due to the reduction, control, or eradication of certain preventable diseases in all age groups, especially in children (Brazil, 2017).

The hepatitis B vaccine is the first to be administered to newborns, and should preferably be administered within the first 6 hours of life, in the rooming-in care (Gonçalves, 2020). However, the act of vaccinating a newborn can cause pain and discomfort, such as inconsolable crying, refusal to breastfeed, difficulty sleeping, and can lead to moments of stress for the newborn and parents.

Newborns are exposed to repetitive and untreated painful experiences in the early stages of life that can lead to damage to neurological development, with detrimental consequences. The absence of strategies to reduce pain during vaccination exposes newborns to unnecessary suffering (Domingues *et al.* 2020).

Breastfeeding stands out as a great ally in managing pain in NBs. The act of sucking on the breast and subsequent swallowing of breast milk can lead to pain relief



due to the increased release of oxytocin and the release of the hormone beta-endorphin, which occurs during the first suck (Morais *et al.* 2020).

Assuming that breastfeeding reduces the perception of pain in newborns during vaccination, consequently reducing emotional discomfort for mothers and nursing professionals, the following question arises: How is the administration of the first dose of the hepatitis B vaccine, in association with breastfeeding, perceived by the mother and the nursing team when caring for the newborn?

Although breastfeeding has proven benefits in relieving pain during invasive procedures in NBs, its systematic use during vaccination is not yet a common practice (Rosa, 2021).

Studies indicate that, despite knowledge about the benefits of breastfeeding in pain relief, many health professionals still do not adopt it as a practice, highlighting the need for greater awareness about pain management in NBs (Taddio *et al.* 2018). Given this scenario, the study sought to understand the representations of mothers and nursing professionals about breastfeeding during the administration of the first dose of the hepatitis B vaccine in newborns.

## 2 Method

This is a qualitative study, using the Theory of Social Representation (TSR), proposed by Serge Moscovici, as its theoretical methodological framework. TSR presents great adherence to the objects of study in the health area, since it is able to capture the most subjective aspects that permeate the problems inherent to this area (Moscovici, 2015).

According to TSR, a social reality develops when the new or the unknown is incorporated into the consensual universe. In this process, what was once strange becomes familiar, loses its novelty, and becomes socially recognized as real (Moscovici, 2015). To conduct the study, the guidelines of the *Consolidated Criteria for Reporting Qualitative Research* (COREQ) (Souza *et al.* 2021) were followed. To make the unreal real, the participation of social actors is required, represented in this study by lactating mothers and nursing professionals working in the rooming-in care service of a university hospital located in the northern region of Paraná, affiliated to the Brazilian Public Health System (SUS), with 313 hospital beds and a regional reference in assistance for high-risk pregnancies. The maternal and child area has 10 beds in the neonatal intensive care unit



(NICU), 10 beds in the conventional neonatal intermediate care unit (NICUco), 17 beds of Rooming-in care (RiC), and four beds in the kangaroo intermediate care unit (NICUka). Data collection took place from April to May 2023.

The criteria adopted for choosing the social actors were mothers who were in rooming-in care, breastfeeding their children, and who experienced the administration of the first vaccine (against Hepatitis B) during breastfeeding. Mothers who had contraindications to breastfeeding, mothers whose newborns had a suction deficit, mothers with cognitive deficit, mothers whose newborns were transferred to the Intensive Care Unit, and mothers who were transferred to another sector after the baby was born were not included.

Regarding the nursing team, professionals (nurses and nursing technicians) who performed or witnessed vaccination during breastfeeding were included. Professionals who were on vacation or leave at the time of data collection were not included.

Seeking greater adherence from professionals, before the start of the collection, a guided awareness-raising exercise was carried out by the main researcher and her supervisor with the nursing team, using visual resources. This awareness-raising aimed to explain the research procedures, since in this service vaccination is carried out in a care room for the newborn, without the mother's presence, and this research implied a change in routine in the unit. Besides awareness-raising carried out in the four shifts with the aim of increasing participation, banners were created with information about the study.

To obtain information about the birth of newborns and the timing of the administration of the Hepatitis B vaccine, the main researcher created a group through a mobile application called WhatsApp® to maintain contact with the coordinating nurses.

The research was conducted through individual interviews, using a semi-structured instrument consisting of two sections. The first aimed to characterize the sociodemographic characteristics of the participants, while the second contained the guiding questions of the object of study.

It was decided not to carry out a pilot test, considering the exploratory nature of the research and the prior suitability of the data collection instruments. The development of the instrument was based on consolidated literature and was validated by experts in the field, ensuring its relevance and applicability. In this way, the instruments were applied directly to the participants, without the need for adjustments throughout data collection.

The questions asked for each group of interviewees were:



- For lactating mothers: “What does breastfeeding mean to you? What was your experience like breastfeeding your child during vaccination?”
- For nursing professionals: “What does breastfeeding mean to you? What was it like for you to perform or witness the vaccination while the newborn was breastfed?”

The interviews were conducted by the main researcher, a nurse with extensive experience in the maternal and child area and in the topic of breastfeeding. The sessions were recorded using a mobile device and, at the end, interviewees had the opportunity to listen to the recordings and suggest changes. Subsequently, the interviews were transcribed, with an average duration of approximately 20 minutes. There were no changes in the interviewees' speech after the possibility to listen. Data collection was carried out in two stages:

Stage 1 – Mothers: The mothers were approached before the moment of vaccination against Hepatitis B, by the main researcher, who informed them about the research and, after accepting to participate and signing the Free and Informed Consent Form (FICF), and in the case of underage mothers the Free and Informed Assent Form (FICF), the interview followed. The interview was conducted at the mother's bedside, after the child was breastfed during the vaccine administration.

Step 2 – Nursing professionals: The main researcher formally requested the professionals to participate, inviting them to join the study by signing the free informed consent form. The interviews were conducted after professionals had administered the vaccine while the mother was breastfeeding or after they had witnessed this moment. The location for the professionals' interviews was a reserved room in the unit itself, made available by the coordinating nurse, with the aim of providing tranquility and privacy to the professional. It is worth noting that professionals were interviewed only once in cases where they had experienced or performed the procedure more than once, and it was decided to always interview them the first time they experienced or performed it.

To analyze the verbal content emitted by mothers and nursing professionals, the software *R Interface for Multidimensional Analysis of Texts and Questionnaires* (Iramuteq) was used. The choice to use this software was based on the recognition of this tool in research with a qualitative and social representation approach. The software enables the analysis and interpretation of speeches, research questionnaires, and texts, formed by the set of evocations obtained in a structured question and/or through an inducing term referring to the object of the study (Souza et al., 2018).



After transcription, the texts were organized into a textual corpus, following IRAMUTEQ guidelines, to ensure standardization and fidelity to the participants' discourse. For data analysis, a systematic approach was adopted that involved several methodological stages.

Initially, the corpus was reviewed and formatted, meeting the IRAMUTEQ requirements, which included text segmentation into units of analysis. Next, Descending Hierarchical Classification (DHC) was performed, allowing the software to identify patterns and semantic relationships within the speeches, organizing them into distinct classes.

To enhance data interpretation, Similarity Analysis was used, through which the connections between the most recurring terms were mapped, highlighting the networks of meanings constructed by the participants. Subsequently, these classes were grouped and interpreted in light of the Theory of Social Representations, resulting in thematic categorization, where the main axes of emerging meaning were organized into analytical categories.

Finally, to validate the structure of the identified categories, Confirmatory Factor Analysis (CFA) was applied, which allowed verifying the adequacy of the theoretical constructs and the consistency of the semantic groupings. This procedure was conducted through structural equation modeling, ensuring greater precision in data interpretation and strengthening the analytical robustness of the research.

To define sample saturation, the theoretical data saturation technique was adopted, considering that the collection becomes saturated when no new elements are identified and the inclusion of additional information is no longer necessary. This criterion was applied based on the premise that new data would not modify the understanding of the phenomenon studied, thus ensuring the consistency and depth of the analysis (Nascimento *et al.* 2018).

In this study, mothers were identified by the letter “M” and professionals by the letter “P” followed by the participation number as a way of avoiding identification of research participants. This research had a favorable opinion from the Research Ethics Committee of the State University of Londrina (UEL), through the Certificate of Presentation for Ethical Assessment (CAAE) No. 63545922.7.0000.5231, according to opinion No. 5,703,392.



### 3 Results

The social actors in this study consisted of 19 lactating mothers and 13 nursing professionals, including 4 nurses, 9 nursing technicians, and 2 resident nurses in obstetric nursing. Regarding maternal sociodemographic categorization, age ranged from 17 to 45 years, with a higher concentration between 22 and 30 years (12). Of these, nine were first-time mothers, most had finished high school (17), and all were exclusively breastfeeding. Regarding family income, the majority reported having an income of three to four minimum wages. It is worth noting that the salary in effect during the collection period was R\$1,212.00.

Among nursing professionals, age ranged between 20 and 55 years, with a greater concentration between 20 and 30 years (10), time since graduation ranged between 1 and 20 years, with the majority (7) having between one and five years of training. Regarding the time spent working in rooming-in care, most of them have been working between 1 and 3 years (10). Regarding the breastfeeding training course, 8 professionals reported having one and having completed the last one less than 2 years before, the others did not have the training.

After analyzing the speeches of lactating mothers and nursing professionals, two categories emerged: 1) Breastfeeding during vaccination: transforming maternal paradigms, from which the following subcategories emerged: Breastfeeding soothes, Breastfeeding strengthens the bond, and Breastfeeding during vaccination does not lead to choking; and 2) Pain management during vaccination through breastfeeding, which allowed the identification of subcategories: Promoting comfort and safety, Breastfeeding and vaccinating: humanized care, and Rethinking your practice.

#### **1) Category: Breastfeeding during vaccination: transforming maternal paradigms**

Carrying out their child's first vaccination while breastfeeding made it possible for these mothers to make the unfamiliar familiar, as it was the first time they had experienced this care.

*Subcategories:*



### 1.1) Breast soothes

Mothers, being able to comfort their children in times of pain, felt the power that embracement can provide to their children and represented this moment as: emotion, safety, tranquility, since they noticed that their children cried less and remained calm during the experience.

*“I thought it calmed him down, it was definitely much better and I could feel in his crying, hear my voice, smell my scent, my skin (...)” (M3)*

*“That moment was very emotional for me, I really liked it, he was very calm, he didn't cry, what you're doing is very interesting, this method, I felt better and so did he (...)” (M10)*

### 1.2) Breastfeeding strengthens the bond

The mothers represented this moment as an experience that promoted strengthening of the bond, as during a procedure considered painful, such as the administration of the vaccine, breastfeeding provided comfort and care.

*“May I give my opinion? A mother's kiss heals while being with the mother and, undoubtedly, the breast heals, the breast is not just food, the breast is affection, the breast is a smell, the breast is for him to sleep (...), the breast is a bond, I have never had this experience, but I always used the breast to calm them down and now it is a new tactic that I will use at the health center if they let me...” (M3).*

*“For me, this was a unique moment, you know (...) and he became calmer with me here and breastfeeding is very important, it is a bond between mother and child, you know, we needed this moment together and being with him was very good (...) this moment with him, breastfeeding is wonderful, and this technique was really good” (M14).*

### 1.3) Breastfeeding during vaccination does not cause choking

It could be observed that some mothers believed that offering the breast during vaccination could cause choking, which is a deep-rooted culture among some mothers; however, this study allowed changing this belief. This provided for the emergence of anchoring, since this study allowed making something that was initially strange and disturbing appropriate, changing a paradigm, in which breastfeeding during the vaccine could cause choking.

*“It was good for her to be with me (...) I was afraid of putting her to breastfeed and her choking, but no, witnessing the vaccine and her breastfeeding and being with me was better” (M6).*

*“I think it was better because when they are taken there (to the baby's procedure room) they cry a lot (...) I had already seen this technique of breastfeeding and giving the vaccine on the internet once and I thought it was*



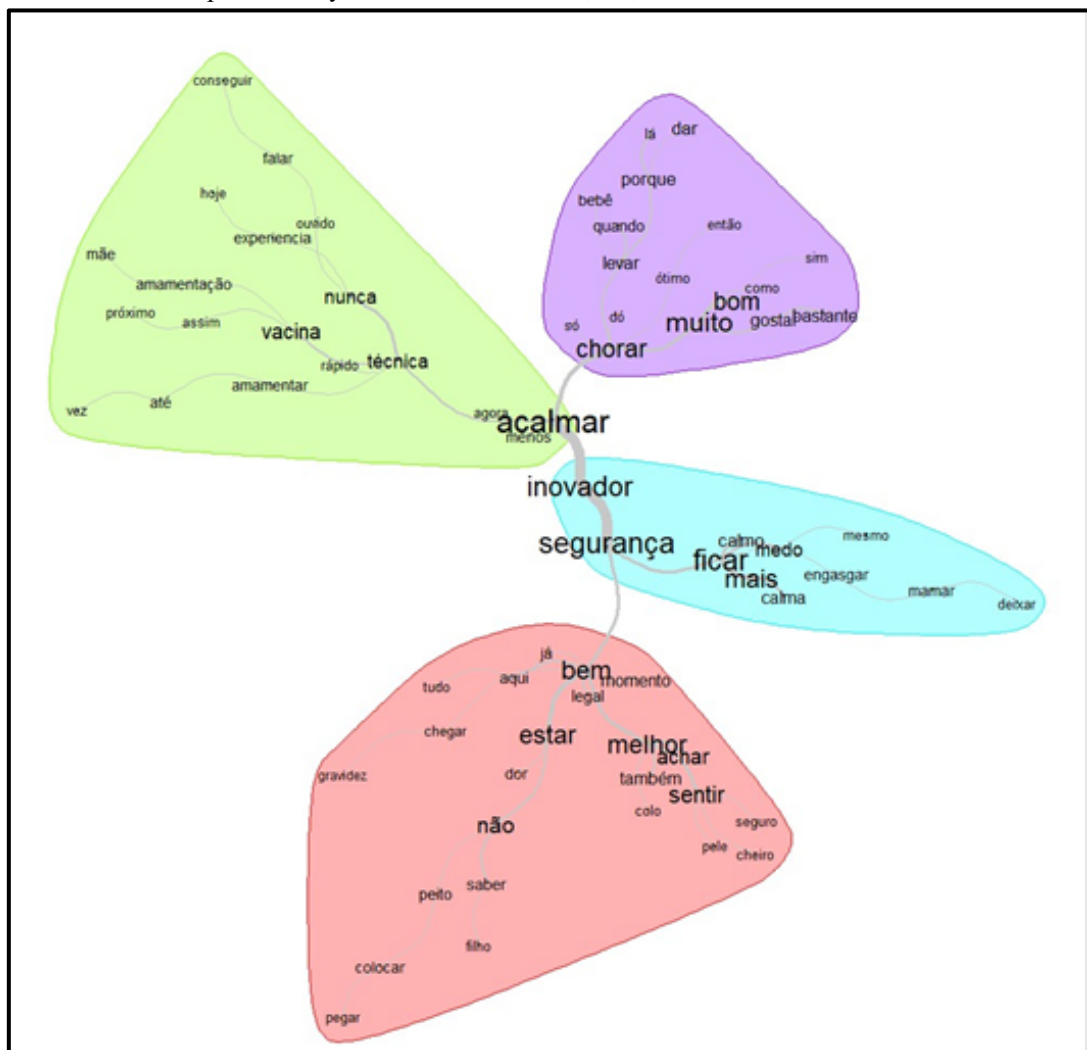


*pretty cool, but I was also afraid that he might choke, but I know that doesn't happen... it's just my fear (...) and that moment was good and I felt calmer” (M8).*

*“So I have never seen it, and I never let them breastfeed because I'm a little afraid of him choking, I prefer them to cry and then I pick them up, calm them down and only then put them to the breast, then I'm afraid of having their mouth full and ending up choking, I'm a little scared (...) but it was good, and I learned that you can breastfeed them and they won't choke, I really liked it, she's very calm and didn't choke.” (M19).*

The similarity analysis (Figure 1) allowed us to confirm the mothers' speeches, as it provides for greater understanding of how recurring words are being related to others within the text. For better visualization, only words with more than 10 total mentions in the speeches of social actors, related to the moment of vaccination and associated with breastfeeding for mothers, were selected here.

**Figure 1:** Similarity Analysis Co-occurrence Score with Communities and Halo of words related to the experience of the moment of administration of the child's first vaccine during breastfeeding represented by the mothers. Londrina, PR, Brazil, 2023.



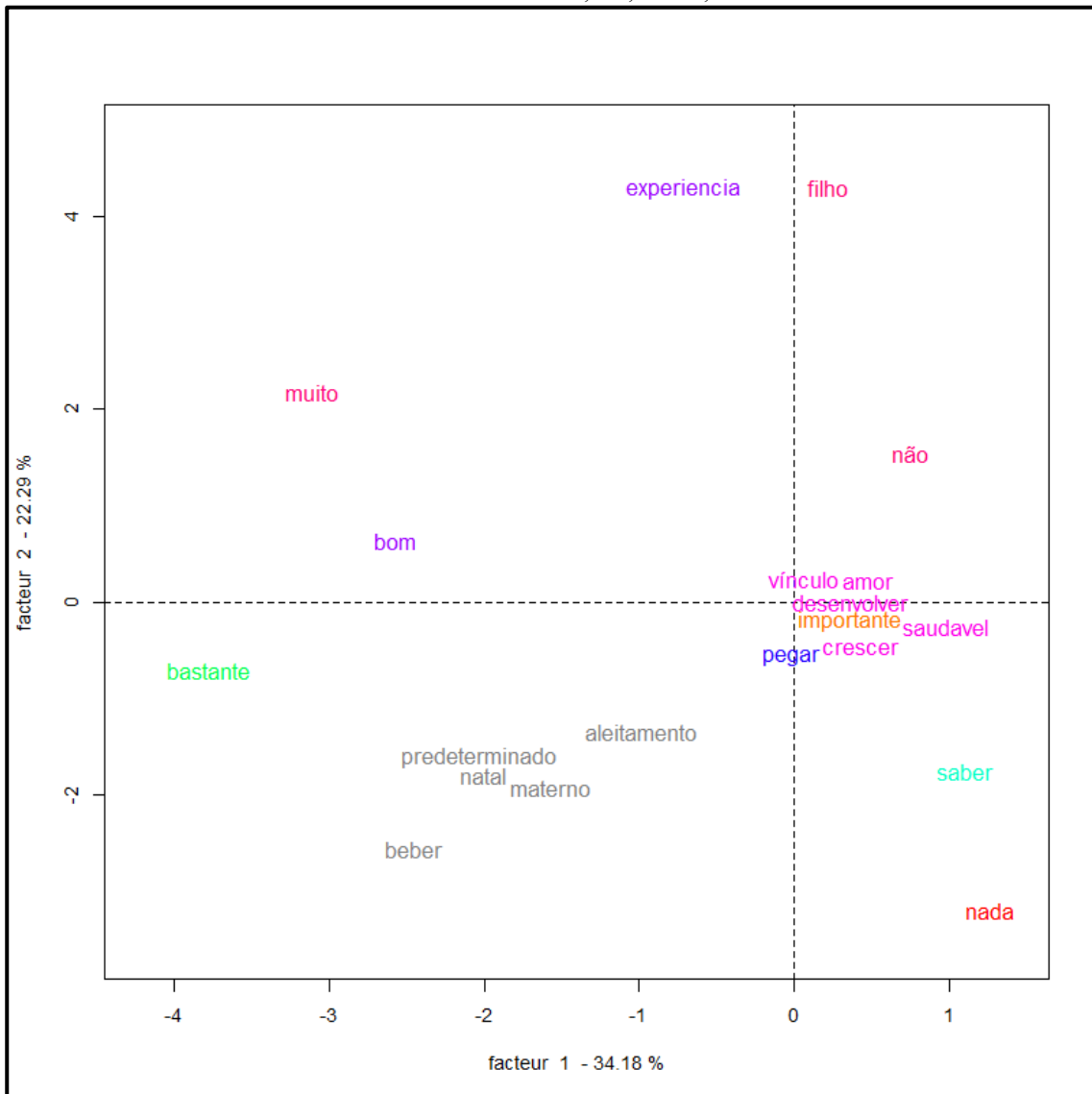
Source: Authors, 2023



With the halos (geographical shapes of different colors) it is possible to notice which terms were written together, in the analyzed speeches, and the degree of approximation between these halos (measured by the thickness of the line that connects them, the thicker, the greater the proximity). Witnessing the child's first vaccination while breastfeeding was represented as innovative for social actors (mothers) and provided greater safety (*segurança*), with a strong connection to calming down (*acalmar*), well-being (*bem-estar*), very good (*muito bom*), and crying (*chorar*).

Based on the AFC (Figure 2), it is possible to observe, within the mothers' speeches, which terms and words are said referring to the meaning of breastfeeding.

**Figure 2:** Correspondence Factor Analysis (CFA) regarding the meaning of breastfeeding for social actors mothers. Londrina, PR, Brazil, 2023.



Source: Authors, 2023.



The four quadrants represent the distance between words within the speeches of social actors, and the colors create small subgroups of terms.

In the upper right quadrant, words related to the meaning of breastfeeding are highlighted, which for mothers means prenatal care, instruction. In the upper left quadrant, words that mean intensity appear, such as: quite (*bastante*), good (*bom*), and very (*muito*). In the lower right quadrant, words such as knowledge (*saber*), well (*bem*) appear. The lower left quadrant identified words such as breastfeed (*amamentar*), grow (*crescer*), develop (*desenvolver*), and important (*importante*). The words that had the highest number of occurrences referring to breastfeeding were grow (*crescer*), develop (*desenvolver*), and important (*importante*).

## 2) Category: Pain management during vaccination through breastfeeding

Nursing professionals who performed or witnessed the application of the first vaccine to the newborn, while the mother was breastfeeding her child, were able to make some reflections, related to the strengthening of the bond between mother and baby, and that this care provided the newborn with pain relief, since the mothers reported in their testimonies that the baby cried less and remained calmer.

### *Subcategories*

#### 2.1) Promoting comfort and safety

For nursing professionals, the experience of carrying out vaccination while the child is being breastfed was described as a procedure that promotes comfort and safety, both for the infant and the mother. According to reports, this practice helped minimize the baby's stress, reducing crying, and promoting a less traumatic experience during immunization.

Furthermore, some professionals emphasized that breastfeeding during vaccination favored a more welcoming relationship between the nursing team and the family, reinforcing the importance of humanized care. It was also highlighted that breast milk can have a natural analgesic effect, making the process less painful for the child.

*“I think it was very good, because when the mother is breastfeeding the child is usually in pain and the mother calms him down (...) because I believe that because of the contact he feels protected, so I think it is very important and I have already done a test when I breastfed my son whenever I went to vaccinate him and it calms him down and it was good” (P2).*



*"(...) It was much better in the mother's arms, because the baby was calm the whole time (...) I also think that this strengthens the bond, this skin-to-skin contact because some mothers complain and today doing it with the mother breastfeeding the mother said: "but wow, he has already been vaccinated", when we take the baby there (procedure room) we notice parents' agitation, so it was much better to do it together for both of them" (P6).*

*"I think this technique was very calming because he cried less, and I think the affection from his mother and the skin-to-skin contact is better and makes him calmer." (P7).*

*"(...) this is a non-pharmacological method, they already instruct people in many places to use this technique, but it is not widely used (...) I think it is good for the baby, it is good, and we saw here that it is better for their well-being" (P8).*

## 2.2) Breastfeeding and vaccination: humanized care

For the participating professionals, vaccination with the baby sucking on the mother was a new experience, as it was not an everyday practice, but it was represented as a humanized care that for many should become routine.

*"I think this technique you are bringing really helps the baby, he gets distracted at the time (...) he became so quiet, I loved it, it's more human" (P9).*

*"(...) we in nursing always need to provide care in a humanized way (...) so I think this is a very important care, especially for the mother, because there are many professionals who exclude the mother in all the procedures they will do with the newborn (...)" (P10).*

*"I've already performed a heel prick test here with the baby sucking on the mother and he becomes calmer and the mother does too, because sometimes we pick up the baby and take it to the room and they don't like it very much, they don't leave us, you know (...) but you really need to have these techniques to soothe the baby, that's what humanized care is." (P11).*

## 2.3) Rethinking professional practice

Professionals reported that carrying out the vaccination while the baby was breastfeeding brought significant benefits, keeping the baby calmer and reducing the intensity of crying when it occurred. Furthermore, they observed that this approach helped to reduce mothers' stress, which consequently reduced pressure on the health team.

On the other hand, some reports pointed out challenges related to the need to adapt the application technique, ensuring that the procedure was carried out safely without interfering with breastfeeding. The professionals also mentioned that, initially, they felt some discomfort when adopting this practice, as they were not used to this approach. However, they recognized its benefits and highlighted that, despite the change in routine



required, incorporating this technique into their practices is viable and can contribute to more humanized care.

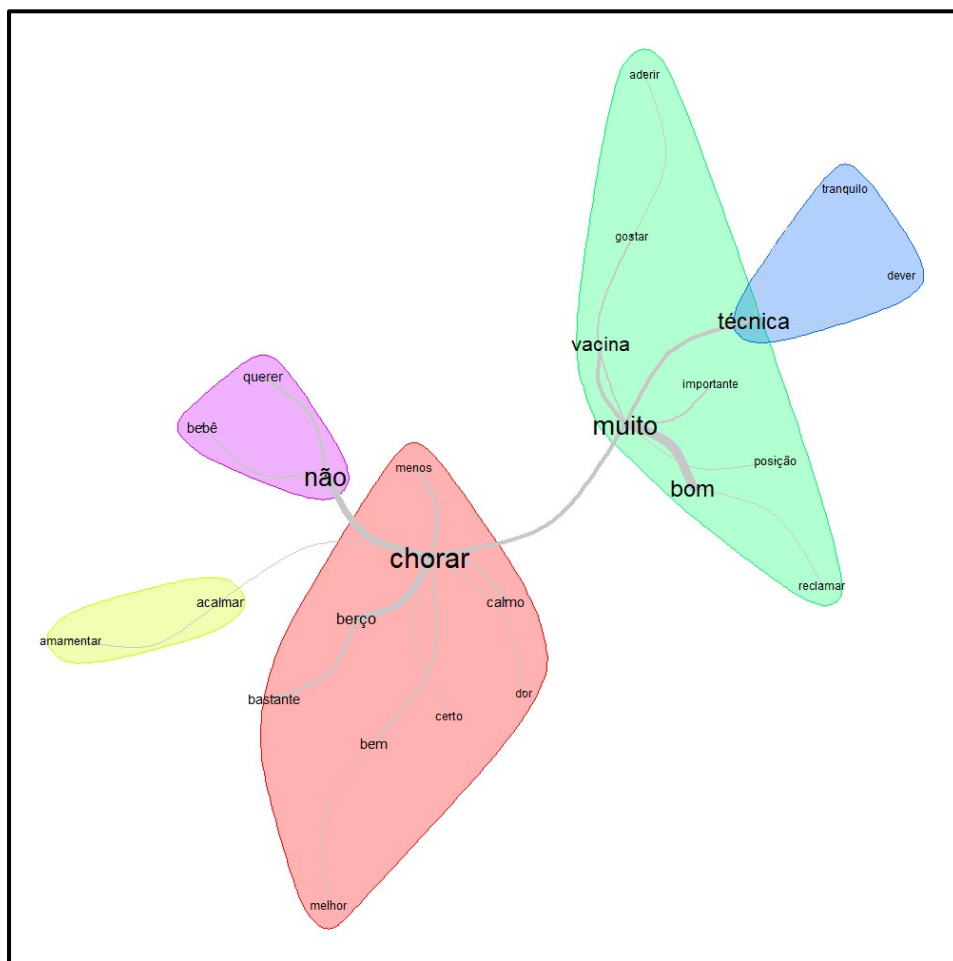
*“I thought it was very good for the baby because he felt less pain and cried less, and for us, because it was the first time, it was a little awkward because of the position, but it's not something you can adapt to, but for the mother and the baby it was good.” (P1).*

*“The position was very good, as it prevented crying, it was very good, I liked it and I'm going to adopt it, it's a new technique, here we always do it in the crib and they usually cry a lot” (P4).*

*“(…) I believe that it is a great method, which should remain and we should encourage it more and more (…)” (P9).*

The similarity analysis (figure 3) reinforced the professionals' statements, as it showed a strong association between the technique (vaccination at the time of breastfeeding) and the reduction of crying, and thus considered it as a very positive care strategy, as can be observed in the halos and in the approximation between these halos.

**Figure 3:** Similarity Analysis Co-occurrence Score with Communities and Halo of words related to the experience of the moment of administration of the child's first vaccine during breastfeeding, represented by the mothers. Londrina, PR, Brazil, 2023.

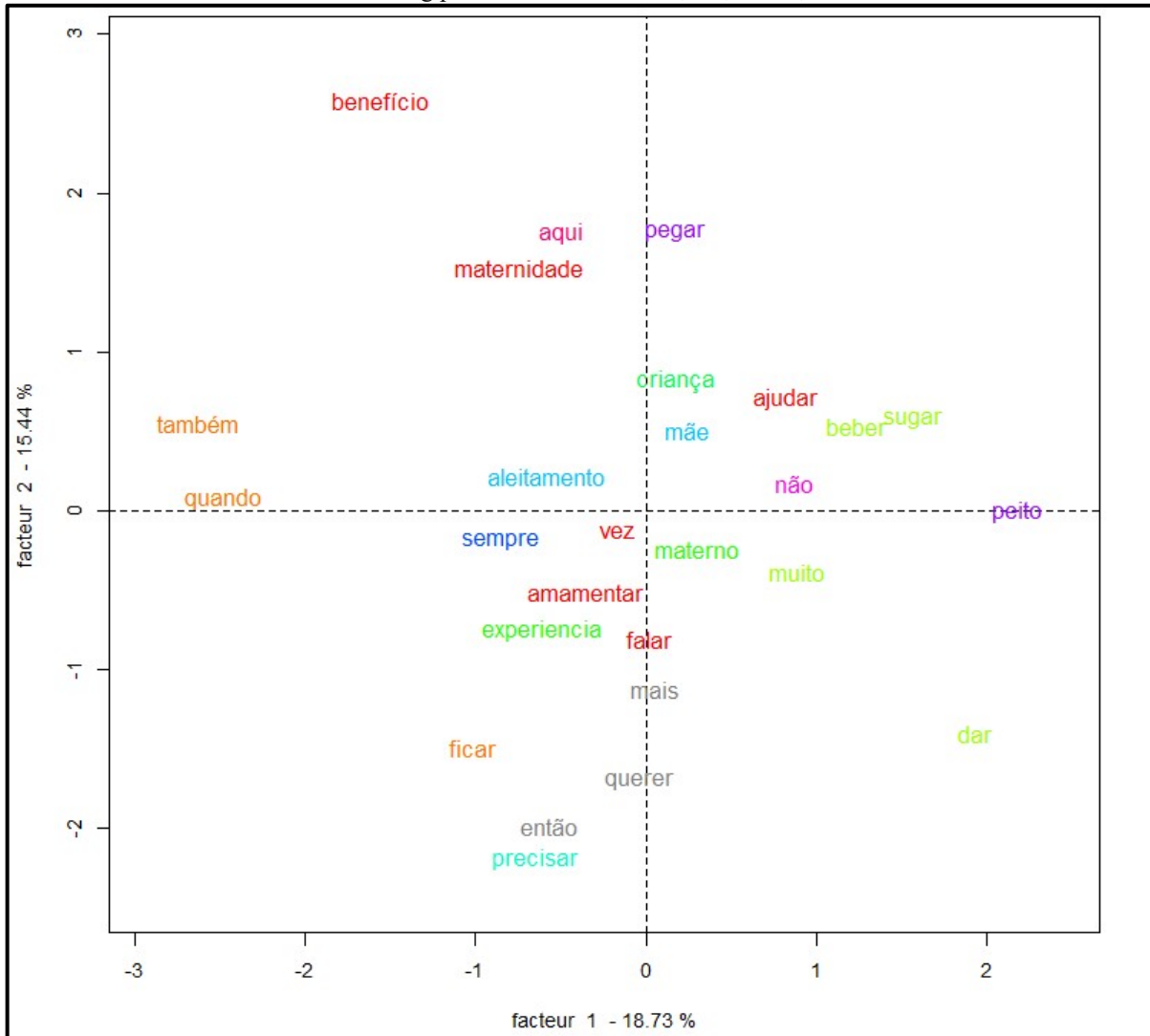


Source: Authors, 2023.



Based on the AFC (Figure 4), it is possible to observe, within the speeches of nursing professionals, the terms and words that were most frequently evoked with regard to the meaning of breastfeeding.

**Figure 4:** Correspondence Factor Analysis (CFA) regarding the meaning of breastfeeding for social actors nursing professionals. Londrina, PR, Brazil, 2023.



Source: Authors, 2023.

For nursing professionals, AFC represented in the four quadrants shows the distance between the words evoked about the meaning of breastfeeding. In the upper right quadrant, words such as help (*ajudar*), mother (*mãe*), baby (*bebê*), and sugar (*sucking*) are highlighted. In the upper left quadrant, words appear about what breastfeeding provides, such as benefit (*beneficio*) and motherhood (*maternidade*). In the lower right quadrant, words such as give (*dar*) and a lot (*muito*) appear, which reflect the importance



of the professional being present and providing a lot of information. The lower left quadrant identified words such as experience (*experiência*) and to need (*precisar*).

When analyzing the subgroups identified by colors, the color red was the one that had the highest number of evocations, represented by breastfeeding (*amamentar*), motherhood (*maternidade*), talking (*falar*), and helping (*ajudar*). In other words, for social actors nursing professionals, breastfeeding means helping to breastfeed.

#### 4 Discussion

Social representation has the potential to bring out what is common within the society, creating and transforming social reality. The analysis focuses on the phenomena produced by the construction of social reality, and not on the individual subject, but rather to analyze the social as a whole, with the function of expressing the way in which individuals perceive and understand (Mocovici 2015).

In this study, social actors (lactating mothers) recognize the importance of vaccination and that it begins at birth; however, they verbalize that they do not feel comfortable with its administration, as they know that it causes pain and discomfort to the child, even if it is momentary.

Currently, vaccination is considered a social achievement, as it is the main public health tool for the primary prevention of diseases, preventing around 2 to 3 million deaths worldwide, in addition to presenting an effective cost-benefit (Costa; Santos; Vieira, 2022). Vaccination is considered and recognized as one of the most effective interventions in the world, being a right of society for individual, community, governmental, and social health (Gardelha *et al.* 2020). However, injectable vaccines, such as hepatitis B, are considered invasive procedures and a significant source of pain in newborns (Rocha *et al.* 2021).

Studies on the repercussions of painful experiences in newborns reveal intense pain responses, such as prolonged crying and facial expressions of suffering, during the first hepatitis B vaccination (Jesus *et al.*, 2024; Pires *et al.*, 2024). Furthermore, research shows that injection-related pain during vaccination results in harmful effects on the development of newborns and creates negative memories, such as fear, anxiety and anguish, with these painful experiences being capable of making the child more susceptible to pain (Mendes; Furlan; Sanches, 2022; Eriksson; Campbell-Yeo, 2019; Komaroff; Forest, 2020).



Researchers have sought to disseminate non-pharmacological methods for managing and relieving pain in newborns and infants during vaccination, such as distraction maneuvers, tactile stimulation, skin-to-skin contact, non-nutritive sucking, and sweetened solutions. Among these non-pharmacological analgesic measures, breastfeeding stands out as an effective strategy for reducing injection pain during vaccination. Moreover, breastfeeding the newborn simultaneously with vaccination results in a reduction in heart rate, a decrease in crying time, and the promotion of the mother-child bond (Viggiano *et al.* 2021; Wu *et al.* 2022; Formiga; Júnior; Da Silva, 2024).

Although the benefits of breast milk and breastfeeding as a non-pharmacological measure during the first hepatitis B vaccination are recognized worldwide, few health professionals encourage and promote this practice in the routine of health services (Gad *et al.* 2019; Bavarsad *et al.* 2018).

In reference to the above, it was possible to identify concretization, as for mothers, breastfeeding and vaccination together constitute something unknown, that is, abstract. However, when they experience this moment, transformation occurs, making the abstract tangible.

The possibility of breastfeeding their children while the vaccine was being administered made this moment easier. Mothers represented this care as beneficial, since their children cried less, and they felt they were protecting them.

Breastfeeding provides numerous benefits and is considered one of the best foods for newborns. The World Health Organization (WHO), the Ministry of Health (MS) and the Brazilian Society of Pediatrics (SBP) recommend exclusive breastfeeding until six months and that after the introduction of food the child continues to receive breast milk until two years of age (Batista *et al.* 2023).

The mothers participating in this study bring as their social representations the benefits of breastfeeding, which are related to providing safety and promoting the bond between the mother and child. Breastfeeding is built from social and biological aspects, promoting a direct bond where the connection between mother and baby is established (Falsett; Santos; Vasconcellos, 2019; Costa *et al.* 2019).

A change in the way lactating mothers thought about breastfeeding during the painful procedure (vaccination) was identified, as they had feelings of fear, as they believed that their child could choke and, after care, a change occurred, that is, the unfamiliar became familiar and this transformation was configured as anchoring.





For social actors (nursing professionals), their representations regarding the benefits of breastfeeding were in line with those reported by lactating mothers, reinforcing the strengthening of the bond between mother and baby, reducing crying, and calming the baby. Therefore, as a phenomenon of social representation present in culture, institutions, social practices, and interpersonal communications (Moscovici, 2015).

Corroborating these findings, a study also carried out with health professionals on the meaning of the act of breastfeeding showed that they considered it a moment of protagonism for the puerperal woman, favoring benefits for the woman and the baby, promoting the production of nutrients and providing a bond between the mother-child binomial (Dos Anjos; De Almeida; Picanço, 2022).

In this context, the role of professionals, in the social context, is represented by support, guidance, and embracement during the process of breastfeeding the child, as well as in the moments required for the performance of painful procedures on their children.

In this study, some of the professionals realized that breastfeeding helps reduce pain at the time of vaccination and that the procedure allowed the baby to remain calmer, and in cases of crying, that this was alleviated by the comfort of their mothers. It should be noted that carrying out the vaccination in the presence of the mothers was represented by some professionals as a form of care that reduced the mothers' stress and anxiety, as they were present throughout the procedure.

This moment was represented as anchoring since this professional experienced a process of assimilating new information into pre-existing cognitive-emotional content, where, for Moscovici (2005), this means bringing representations of common sense and making them understandable, without altering the universe from which they originate.

The mother may express feelings such as insecurity and suffering in situations where she has to experience her child's pain caused by unpleasant procedures and expects support from health professionals (Meira, 2021).

Given the need to reduce pain in newborns who undergo painful procedures, studies have sought to find non-pharmacological interventions. Among these, breastfeeding stands out, as the moment of sucking allows the release of endorphins, whose main function is to inhibit irritation and stress, contributing to the feeling of well-being (De Moura *et al.* 2021).

In a study carried out with 102 newborns, who were divided into two groups, the intervention group sucked the mother's breast during the heel puncture procedure while the control group only performed the puncture. It was found that the intervention group



presented lower pain levels than the control group (Peng *et al.* 2018). Another study reinforces that a child's sucking helps with the pain process when undergoing a painful procedure such as vaccination (Rosa *et al.* 2022). Breastfeeding is a powerful analgesic for pain relief. This way, even in situations where the child starts crying, breastfeeding will not cause choking (De Moura *et al.* 2021).

This study allowed observing that the participating professionals represented this care as humanized and some reflected on their practice, with the desire for change in their work context.

Nursing professionals play an educational role in society, with the professional and social responsibility of promoting quality care for the mother-child binomial, embracing and guiding pregnant women during prenatal care on newborn vaccination and breastfeeding, with a view to managing breastfeeding during the baby's vaccination as a pain relief strategy.

A study on breastfeeding as a non-pharmacological method for pain relief states that, because professionals are unaware of the mechanism of pain and its relationship with sucking, they rarely associate breastfeeding with a non-pharmacological form when immunizing the child (Vieira *et al.* 2022).

A study carried out in a maternity hospital in the southern region of Brazil showed a positive impact received by mothers in the guidance given by nursing professionals on breastfeeding (Maliska *et al.* 2023). It is worth noting that favoring breastfeeding during immunization not only provides pain relief, but also reduces maternal stress, in addition to providing safety and comfort to the newborn.

Bringing something new, that is, breastfeeding during vaccination, provided social actors (lactating mothers and nursing professionals) with change, transformation, and familiarization. Thus, it is incorporated into the consensual universe, operating, at that moment, the processes by which it becomes familiar, loses its novelty, being socially recognized and real (Moscovici, 2005). Therefore, this study seeks to make breastfeeding an ally in reducing pain for the baby and stress for mothers and professionals during the vaccination period.

The social representations that lactating mothers and the nursing team attribute to breastfeeding and the moment of vaccination will permeate the consensual universe of these mothers and professionals, guiding their maternal or professional conduct.

As a limitation of this study, the fact that it was carried out in a maternity hospital that predominantly serves high-risk pregnant women is highlighted, which influences



maternal and professional perceptions about breastfeeding at the time of vaccination. This specificity may impact the representations analyzed, since factors associated with high gestational risk may influence the practice of breastfeeding and its acceptance as a comfort strategy during immunization. Consequently, the results must be interpreted within this context, without the intention of fully reflecting the perceptions present in maternity hospitals that provide care for low-risk pregnant women.

It should be highlighted that the main contribution to the nursing field is associated with raising awareness among nursing professionals, as it enables them to change their practices towards more humanized care, in addition to enabling a paradigm shift for some lactating mothers who believed that breastfeeding during vaccination could lead to choking.

## 5 Final Considerations

This study aimed to understand the representations of mothers and nursing professionals regarding breastfeeding of newborns during the administration of the first dose of the hepatitis B vaccine. The social representations identified reveal that breastfeeding, in this context, is perceived as a beneficial practice, capable of promoting comfort to the newborn, pain relief, safety, and favoring the humanization of care.

Furthermore, this practice provoked reflections on professional performance and the need to rethink strategies that promote embracement and centrality of women and newborns in care.

As contributions, this study offers important subsidies for professional practice, highlighting the relevance of incorporating humanizing strategies into the daily routine of health services. For the research, the value of social representations in understanding care practices is underscored. For society, the findings reinforce the importance of promoting breastfeeding as a pain management strategy in newborns.

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