Development of an educational booklet on how to prevent nipple trauma during breastfeeding

Desenvolvimento de uma cartilha educativa sobre como prevenir o trauma mamilar durante a amamentação

Elaboración de un folleto educativo sobre cómo prevenir los traumas del pezón durante la lactancia materna

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ABSTRACT

Early interruption of exclusive breastfeeding due to nipple trauma has an impact on the lives of mother and baby. In this manner, the sharing of information through the creation of an educational booklet encourages the continuation of breastfeeding. The objective of this study was to develop an educational booklet on how to prevent nipple trauma during breastfeeding. This is a methodological study carried out in May 2024 and divided into two stages, integrative review in the PubMed, SciELO and LILACS databases, and development of an educational booklet using the ibisPaint X application and the Canva program. The booklet was entitled “Breastfeeding: learn how to prevent nipple trauma”. The booklet included information on: definition of breastfeeding and benefits for the baby and mother, types of nipple, definition of nipple trauma and causes, breastfeeding positions, positioning of the baby, attachment of the baby, steps of attachment, and how to heal nipple trauma. The booklet consisted of a 12 pages. In conclusion, the educational technology was successfully developed, but it will be necessary to conduct content validation to be used by healthcare workers to promote the prevention of nipple trauma.

Keywords: breast feeding, nipples, wounds and injuries, health education, information dissemination.

RESUMO

A interrupção precoce do aleitamento materno exclusivo devido ao aparecimento de trauma mamilar impacta na vida da mãe e bebê. Dessa maneira, o compartilhamento de informações por meio da criação de uma cartilha educativa incentiva a continuação da amamentação. O objetivo deste estudo foi desenvolver uma cartilha educativa sobre como evitar trauma mamilar durante a amamentação. Trata-se de um estudo metodológico realizado em maio de 2024 e dividido em...
duas fases, revisão integrativa nas bases de dados da PubMed, SciELO e LILACS, e desenvolvimento de cartilha educativa através do aplicativo ibisPaint X e o programa Canva. A cartilha teve como título "Amamentação: saiba como prevenir trauma mamilar ". A cartilha incluiu informações sobre: definição de amamentação e benefícios para o bebê e para a mãe, tipos de mamilo, definição do trauma mamilar e causas, posições de amamentação, posicionamento do bebê, pega do bebê, etapas da pega e como curar o trauma mamilar. A cartilha consistiu em 12 páginas. Concluindo, a tecnologia educacional foi desenvolvida com sucesso, mas será necessário realizar a validação de conteúdo para ser usada pelos profissionais de saúde para promover a prevenção de trauma mamilar.

Palavras-chave: aleitamento materno, mamilos, ferimentos e lesões, educação em saúde, disseminação de informação.

RESUMEN
La interrupción precoz de la lactancia materna exclusiva debido a un trauma del pezón repercute en la vida de la madre y el bebé. De esta manera, compartir información mediante la creación de un folleto educativo fomenta la continuación de la lactancia materna. Se trata de un estudio metodológico realizado en mayo de 2024 y dividido en dos fases: una revisión integradora en las bases de datos PubMed, SciELO y LILACS, y elaboración de un folleto educativo utilizando la aplicación ibisPaint X y el programa Canva. El folleto se tituló "Lactancia materna: aprenda a prevenir los traumas del pezón". El folleto incluyó información sobre: la definición de lactancia materna y los beneficios para el bebé y la madre, los tipos de pezón, la definición de traumas del pezón y sus causas, las posiciones de lactancia, la colocación del bebé, el agarre del bebé, las fases del agarre y cómo curar el trauma del pezón. El folleto consta de 12 páginas. En conclusión, la tecnología educativa se ha elaborado con éxito, pero será necesario llevar a cabo una validación del contenido para que pueda ser utilizada por los profesionales sanitarios con el fin de promover la prevención de los traumas del pezón.

Palabras clave: lactancia materna, pezones, heridas y lesiones, educación en salud, difusión de la información.

1 INTRODUCTION

Becoming a mother is a stage of change in many aspects of life. The process of motherhood is considered a social and cultural issue, as the woman gives herself completely to care for a child under the patriarchal family system. Furthermore, motherhood and breastfeeding are related roles, and depending on how the experience was, it influences your behavior in future pregnancies (Giordani et al., 2018).

In addition to creating the mother-baby bond, the practice of breastfeeding has countless benefits for both the infant and the mother. According to the World Health Organization (WHO),
exclusive breastfeeding is recommended for about 6 months of age (Margotti; Margotti, 2017; Barbosa; Conceição, 2020).

Unfortunately, breastfeeding can be a difficult period for postpartum women due to a number of factors, among them, nipple trauma (De La Hoz Cáceres et al., 2019). Nipple trauma is considered one of the main causes of early discontinuation of exclusive breastfeeding, because it causes pain for a large proportion of mothers (Camargo et al., 2024).

Nipple trauma, conforming to Oliveira et al. (2020, p. 334) “It is characterized by erythema, edema, cracks, fissures, blisters, abrasions, and bruises. It is defined as a change in the normal anatomy of the nipple skin, with intrinsic primary lesion and changes in the thickness and coloration of the skin, and not merely as a solution of continuity”.

There are several scientifically proven interventions to treat or prevent appearance of nipple trauma, such as lanolin and chamomile ointment, yarrow tea sachet, breast milk and photobiomodulation with low-power laser (Silva et al., 2022).

The practice of breastfeeding guidance by healthcare workers is fundamental to reducing early weaning. Therefore, it is important that professionals know how to transmit information to women about the breastfeeding process safely and with quality, as these measures have an impact on the mother-infant relationship (Nascimento et al., 2017).

The physiotherapist plays an important role in the post-natal period, providing guidance on actions that can prevent or treat nipple trauma (Coutinho et al., 2023). This can be implemented through the development of booklets, an educational technology that is increasingly being used as a tool for health promotion (Vale et al., 2020).

In this context, it is necessary to carry out interventions through healthcare workers, for example physiotherapists, on how to prevent nipple trauma with the development of an educational booklet, considering that sharing information will help postpartum women during this period, which for many mothers is quite complex because of many different factors. This will increase exclusive breastfeeding rates up to 6 months of age, as well as promoting all the benefits for mother and child.

The aim of this study was to develop an educational booklet on how to prevent nipple trauma during breastfeeding.
2 METHODOLOGY

This is a methodological study carried out in May 2024. The research was divided into two stages: (1) integrative review, and (2) development of educational booklet.

Stage 1: the search was performed in the National Library of Medicine (PubMed), Scientific Electronic Library Online (SciELO) and Latin American and Caribbean Literature in Health Sciences (LILACS) databases. The descriptors were in Portuguese and English language, and consulted in the DeCS (Descritores em Ciências da Saúde - Health Sciences Descriptor) and MeSH (Medical Subject Heading): “Aleitamento Materno or Amamentação/Breast Feeding”, “Nipple”, “Protetores de Mamilo/Nipple Protectors”. The keywords were: “Trauma Mamilar, Nipple Trauma”, “Posicionamento/Positioning”, “Pega/Attachment” and “Mamilo”. The search strategy consisted of using the Boolean operator AND and OR, Table 1.

The eligibility criteria were: (1) articles that described how to prevent nipple trauma from breastfeeding; (2) published from 2000 onwards; (3) published in Portuguese, English and Spanish language; and (4) available free of charge. Were excluded: (1) full-text not available.

Stage 2: consisted of the content, illustration, and layout features. The illustrations were developed in the ibisPaint X application, and the formatting, configuration and layout were done in the Canva program.

Since the research was not carried out with human beings, it was not necessary to submit it to the ethics committee.
3 RESULTS AND DISCUSSIONS

In front of the early abandonment breastfeeding due to nipple trauma and the literature, a booklet was developed titled as “Breastfeeding: learn how to prevent nipple trauma”. The booklet contained information on: (1) definition of breastfeeding and benefits for the baby and mother; (2) types of nipple; (3) definition of nipple trauma and causes; (4) breastfeeding positions; (5) positioning of the baby; (6) attachment of the baby; (7) steps of attachment, and (8) how to heal nipple trauma. The booklet consisted of 12 pages.

The content was based on scientific literature to provide safe and reliable information. In addition, titles in capital letters and colorful illustrations were used to highlight the most important information (Correa et al., 2023). For all the pages of the booklet, details were chosen in the color gold, according to Alves et al. (2020) in Brazil, the color gold symbolizes the month of breastfeeding, called “Golden August” since 2017.

The cover is the first page of the booklet, which contains the title, subtitle and an illustration that represents breastfeeding. The back cover contains the illustration that represents breastfeeding, name of the author who wrote and illustrated the booklet, as the year of publication, figure 1.

Figure 1. Cover and back cover

Source: Prepared by the author
Page 2 described the definition of breastfeeding and the benefits for the mother and baby.

Page 3 included the types of nipples, definition of nipple trauma and causes, figure 2.

Regarding the benefits mentioned on page 2, the advantages of breastfeeding for the baby include decreased risk of overweight or obesity, types 1 and 2 diabetes mellitus, allergic rhinitis, diarrhea, neuropathies, colic, celiac disease, pneumonia, meningitis, necrotizing enterocolitis and promotes the development of the cognitive, digestive, immune and endocrine systems (Gertosio et al., 2016).

Maternal benefits of breastfeeding include reduced risk of heart disease, ovarian and breast cancer, type 2 diabetes mellitus, prolonged postpartum bleeding, prolonged lactational amenorrhea, postpartum depression, and promotes postpartum weight loss (Muro-Valdez et al., 2023; Westerfield; Koenig; Oh, 2018).

On page 3, the causes of nipple trauma were mentioned, the risk of factors included primiparous women, plane and inverted nipple, incorrect positioning and attachment of the baby, breast pumps, pacifiers, feeding bottles, mastitis, infections, among others (Cunha et al., 2019; Kent et al., 2015).

Pages 4-5 illustrated the types of breastfeeding positions, figure 3.
On pages 4-5, illustrated six types of breastfeeding positions without support equipment: cradle hold, cross-cradle hold, koala hold, football hold, side-lying position and laid-back position, and two types of breastfeeding positions with support equipment: baby sling carrier and baby carrier.

Conforming to Coca et al. (2009, p. 447) “It is obvious that the breastfeeding experience must be comfortable to both the mother and the baby. The mother has to be relaxed, having her back straight, so that she can sit or lie down”.

In the case of breastfeeding twins, the recommended methods are the cradle hold, football hold and koala hold (Brasil, 2015).

On the use of support equipment, according to the randomized controlled trial study with 100 parents (50 parents received an infant carrier and 50 parents did not) conducted by Little et al. (2021), it was concluded that participants in the intervention group were significantly more likely to continue breastfeeding until 6 months postpartum compared to the control group.

Page 6 described the positioning of the baby. Page 7 described the attachment of the baby, figure 4.
The positioning of the baby mentioned on page 6, according to Dias, Vieira e Vieira (2017, p. 38) “the child’s body is near and facing the mother, the head and body aligned, the mouth is the same height as the nipple and the infant’s buttocks supported”.

In view of the above, incorrect positioning of the baby leads to inadequate attachment, a factor that has negative consequences such as decreased breast milk production and a reduction in the infant's weight (Brasil, 2015).

Pages 6-7 illustrated the position of the mouth, chin and nose and the expression of the cheek for a successful attachment. In this context, the newborn should press the chin against the breast, the mouth should cover the areola, and the cheek should be rounded (Medeiros et al., 2018; Dias; Vieira; Vieira, 2017).

Page 8 described the steps of attachment. Page 9 included methods for heal nipple trauma, figure 5.
On page 8, illustrated four steps of attachment. The steps included: (1) the chin touches the breast; (2) the tongue rests on the underside of the mandible; (3) the mouth covers the areola and the nipple touches the baby’s palate, (4) and the baby's tongue compresses the nipple for express the breast milk (Brasil, 2009; Sanches, 2004).

On page 9, presents the method of expressed breast milk to cure nipple trauma. Conforming to Marinho (2004), in cases of severe nipple trauma, it is recommended to suspend breastfeeding directly from the breast for at least 24 hours, and during this pause period, feed through expressed breast milk.

Hand expression of breast milk, according to Alibhai et al. (2022, p. 2) “a technique that involves massaging the breast to stimulate the mammary glands to release breastmilk. This technique can be used to promote lactation, soften to assist latching, relieve painful breast engorgement, and collect milk for future infant feedings”.

In addition, breast pumps are used to extract breast milk to maintain milk production, however, when used in situations such as nipple trauma, it is recommended to stop using them to avoid nipple pain (Mariot, 2012; Lima et al., 2022).

Pages 10-11 included methods for heal nipple trauma, figure 6.
Page 10 illustrated four steps in the hand expression of breast milk: (1) massage in circles; (2) press the hand in a “C” shape towards your chest; (3) press the thumb and fingers together, and (4) collect the milk (Alibhai et al., 2022).

Page 11 presents two more methods of curing nipple trauma: breast milk and breast shell. Conforming to Giugliani (2003) despite the lack of significant evidence proving the effectiveness of breast milk, it does have anti-infective properties that can prevent complications from nipple trauma.

The conventional nipple protectors are not recommended in case of nipple trauma due to skin irritation caused by the synthetic material, and in addition to that, the constant humidity caused by the breast milk (Gibilini, 2008).

According to Urasaki, Teixeira and Cervellini (2017) the breast shell can be used to treat nipple trauma, because it has orifices that promote air to circulation in the area of nipple and areola, as well as preventing friction between clothing and skin.

Breastfeeding can be difficult for many women, and the support of the partner, family and healthcare workers is important to get through this period more successfully (Lima, 2017).

Unfortunately, even with the implementation of breastfeeding strategies, the rate of exclusive breastfeeding is still low (Christoffel et al., 2022). Therefore, it is necessary for...
healthcare workers to receive adequate training in order for the guidelines to be effective (Alves; Oliveira; Rito, 2018).

The booklets make it possible to share information, acting in the prevention and promotion of health. In this context, the development of educational booklets is an important technological tool in the teaching and learning process (Lima, 2022).

4 CONCLUSION

The education booklet was successfully developed, however, although the construction is based on scientific literature, it will be necessary to conduct content validation through internal validation (experts) and external validation (target population) in sequence to be used by healthcare workers to promote the continuation of exclusive breastfeeding, as guidance is disseminated on how to prevent nipple trauma.
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