


REVIEW

## The integral value of breastfeeding in public health

### El valor integral de la lactancia materna en la salud pública

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#### ABSTRACT

**Introduction:** breastfeeding was presented as one of the most significant practices in the history of public health and infant nutrition. It was recognized not only for its biological and nutritional contributions, but also for its cultural, emotional and social dimension. Over time, its role in the survival of the newborn, in the consolidation of the mother-child bond and in the promotion of integral wellbeing was highlighted. However, difficulties related to myths, lack of knowledge and sociocultural barriers that limited its continuity and effectiveness were also identified.

**Development:** the analysis showed that breastfeeding guaranteed unique nutrients and essential immunological defenses for the baby, while strengthening the mother's physical and emotional health. It was observed that this process was mediated by hormonal factors such as oxytocin and prolactin, which favored both milk production and emotional attachment. In addition, it was documented that the practice of breastfeeding contributed to the family economy and environmental sustainability. However, frequent problems such as cracked nipples, the perception of low milk production and erroneous beliefs were highlighted, which generated early interruptions and the incorporation of artificial formulas.

**Conclusions:** it was concluded that breastfeeding transcended the biological to become an integral phenomenon involving health, culture and emotions. Its benefits encompassed nutritional, immunological, psychological, economic and environmental dimensions. At the same time, it became evident that its practice depended on adequate professional support, education for mothers and sociocultural and labor support. Finally, it was affirmed that guaranteeing breastfeeding as a right and protected practice was essential for maternal and child well-being and sustainable social development.

**Keywords:** Breastfeeding; Nutrition; Maternal-Infant Bonding; Public Health; Sustainability.

#### RESUMEN

**Introducción:** la lactancia materna se presentó como una de las prácticas más significativas en la historia de la salud pública y la nutrición infantil. Fue reconocida no solo por sus aportes biológicos y nutricionales, sino también por su dimensión cultural, emocional y social. A lo largo del tiempo, se destacó su papel en la supervivencia del recién nacido, en la consolidación del vínculo madre-hijo y en la promoción del bienestar integral. Sin embargo, también se identificaron dificultades relacionadas con mitos, desconocimiento y barreras socioculturales que limitaron su continuidad y eficacia.

**Desarrollo:** el análisis permitió evidenciar que la lactancia materna garantizó nutrientes únicos y defensas inmunológicas esenciales para el bebé, al mismo tiempo que fortaleció la salud física y emocional de la madre. Se observó que este proceso estuvo mediado por factores hormonales como la oxitocina y la prolactina, los cuales favorecieron tanto la producción de leche como el apego afectivo. Además, se documentó que la práctica de la lactancia contribuyó a la economía familiar y a la sostenibilidad ambiental. No obstante, se resaltaron problemas frecuentes como las grietas en los pezones, la percepción de baja producción de leche

y las creencias erróneas, lo que generó interrupciones tempranas y la incorporación de fórmulas artificiales. **Conclusiones:** se concluyó que la lactancia materna trascendió lo biológico para constituirse en un fenómeno integral que involucró salud, cultura y emociones. Sus beneficios abarcaron dimensiones nutricionales, inmunológicas, psicológicas, económicas y ambientales. Al mismo tiempo, se hizo evidente que su práctica dependió de un adecuado acompañamiento profesional, de la educación a las madres y del respaldo sociocultural y laboral. Finalmente, se afirmó que garantizar la lactancia materna como derecho y práctica protegida resultó esencial para el bienestar materno-infantil y el desarrollo social sostenible.

**Palabras clave:** Lactancia Materna; Nutrición; Vínculo Materno-Infantil; Salud Pública; Sostenibilidad.

## INTRODUCTION

Breastfeeding was one of the most important practices in the history of public health and child nutrition, representing a natural feeding mechanism that transcended the mere biological act to become a biopsychosocial and cultural phenomenon. For centuries, breastfeeding was considered an indispensable act to ensure the survival and healthy development of the newborn, but also to consolidate early emotional bonds between mother and child. In recent decades, multiple studies have confirmed that breastfeeding not only provided nutritional and immunity benefits, but also strengthened the physical and emotional health of the mother, benefited the family economy by reducing expenses on artificial formulas, and contributed to sustainable development by not requiring industrial processes that generate environmental impact.<sup>(1,2)</sup>

Scientific interest in breastfeeding has grown significantly due to the need to understand its physiological, anatomical, and psychological implications. Milk production, mediated by hormones such as oxytocin and prolactin, illustrated the complex interaction between maternal biology and infant demands, while demonstrating the adaptive capacity of the female body to meet the nutritional needs of the newborn.<sup>(3)</sup> It was also highlighted that the act of breastfeeding strengthened maternal confidence and promoted a protective instinct essential for parenting.

Despite these benefits, challenges persisted related to ignorance, the spread of myths, and sociocultural barriers that affected breastfeeding practices. Many women faced problems such as breast engorgement, cracked nipples, and the perception of insufficient milk production, which led to early cessation of breastfeeding and the introduction of artificial formulas. In addition, in different social and cultural contexts, misconceptions about the aesthetic and functional effects of breastfeeding were transmitted, which limited mothers' confidence and reinforced the need for education and professional support.

From a broader perspective, breastfeeding was shaped as a practice influenced by social, cultural, and family factors. Traditions passed down from generation to generation, the role of the father in providing support, and public health and labor policies largely determined the continuity of breastfeeding. Therefore, a comprehensive analysis of breastfeeding allowed it to be understood not only as a biological function, but also as a complex process that involved education, community support, and a favorable social environment to ensure its multiple benefits for maternal and child health.

## DEVELOPMENT

### Breastfeeding

Breastfeeding, beyond being a method of providing food and nutrients to the baby, was essential for creating a bond between mother and child, and vice versa. This mutual connection provided trust and security between the two, contributing to the baby's primary vision of how to perceive their environment. The mother experienced a biochemical impulse related to her baby's well-being, mediated by the hormone oxytocin, known as the love hormone, which was produced during breastfeeding and promoted in the mother a natural intuition to protect her baby. This role that women experience at this stage of life allows them to gain knowledge and experience feelings and emotions they have never experienced before.<sup>(4,5)</sup>

### Importance and Benefits of Breastfeeding

It was beneficial to encourage uninterrupted direct contact between mother and child after birth, with immediate breastfeeding to help the baby adapt. It was determined that breastfeeding generated intuition in the mother, developing caregiving and proper breastfeeding skills, which promoted the ability to identify when the baby was hungry and when to breastfeed again. In breastfeeding, parents understood the importance of feeding their children naturally, understanding the risks caused by artificial methods such as pacifiers and bottles, among others.<sup>(6,7)</sup> Breast milk provides all the nutrients necessary for the baby's development, as well as protecting them from previous diseases and infections.

## Knowledge about Breastfeeding

### *Basic necessary information*

When a woman became a mother for the first time, she had to know that her body was undergoing dramatic changes, many of which were irreversible. Among these, the most notable were in the breasts, where colostrum, a liquid particularly rich in immune factors, was produced in the first few days after giving birth. However, breastfeeding presented various factors that made it difficult to carry out normally, which meant that many mothers were unaware of its benefits.<sup>(8,9,10)</sup> It was essential for mothers to know how to identify whether their baby was getting enough milk and how to deal with common problems, such as breast engorgement or cracked nipples. It was shown that some mothers found breastfeeding techniques complex, leading to incorrect execution, causing nipple injuries and opting for complementary formulas.<sup>(11)</sup>

### *Myths and realities about breastfeeding*

Health professionals tend to face a reality where most people have beliefs that are far from reality. There are mothers who think they are not capable of producing enough breast milk for their baby, which is a complete fallacy since the body is capable of producing enough breast milk to meet the baby's needs whenever required. They believe that the physical structure of the breast changes due to pregnancy, but this is actually part of the physical changes that the body undergoes over time, such as aging, among other factors, whether they breastfeed or not.<sup>(12)</sup> However, it is essential that mothers receive adequate support and education to trust their abilities and understand the natural processes of their bodies.

## Physiology of Breastfeeding

### *Anatomy of the mammary glands*

The mammary gland is made up of around 15 to 20 mammary lobules, each with multiple secretory acini surrounded by myoepithelial cells, which join together to form milk ducts that converge towards the nipple. Under the skin, the mammary gland is suspended by Cooper's ligament and surrounded by adipose tissue that provides volume. The nipple contains the openings through which milk is ejected during suckling, and the surrounding areola contains sebaceous glands that keep the skin soft and protected. Restrepo et al.<sup>(13)</sup>, determine the anatomical complexity that allows women to efficiently expel breast milk to meet the nutritional needs of the newborn.

### *Anatomy of the Breast During Lactation*

The mammary gland undergoes a remarkable anatomical and physiological transformation during lactation, as the mammary parenchyma, composed of lobes and lobules, undergoes significant hypertrophy under the influence of hormones, mainly prolactin and oxytocin. The ductal system, which includes the milk ducts and the lactiferous sinus, expands to facilitate the transport and storage of breast milk. The areola and nipple change, with hyperpigmentation and prominence of the Montgomery tubercles. These anatomical changes are orchestrated to optimize lactogenesis, storage, and milk ejection.<sup>(14)</sup>

### *Oral Anatomy of Infants and Physiology of Suction due to a small oral cavity, an elongated soft palate, and an elevated larynx*

Infants exhibit a highly specialized orofacial configuration. This anatomical arrangement facilitates safe and efficient swallowing. This sucking mechanism involves the synergistic coordination of orofacial structures, including the perioral musculature, tongue, and hyolaryngeal complex. The rhythmic contraction and relaxation of these elements generates an intraoral negative pressure gradient, providing milk flow. This sophisticated system is complemented by specific neonatal reflexes, such as the rooting reflex and the sucking reflex, which facilitate the breastfeeding process and orofacial development.<sup>(13)</sup>

## Breastfeeding Practice

### *Breastfeeding Technique*

Moderate breastfeeding techniques focus on creating an affectionate bond between mother and child. Emphasis is placed on the baby latching on to the breast correctly, taking not only the nipple but also part of the areola, and promoting skin-to-skin contact immediately after birth. Mothers are encouraged to breastfeed according to their babies' needs, without time restrictions, and various comfortable positions are recognized that allow infants to find the breast instinctively. To support this process, they use methods of expressing and storing breast milk. With this practice, they have improved and been able to create more efficient equipment and clear guidelines, making it easier for mothers to continue breastfeeding, even when they return to work.<sup>(12)</sup>

## Common Breastfeeding Problems

The most common problems faced by breastfeeding mothers include sore or cracked nipples, blocked milk

ducts, breast engorgement, and the perception of insufficient milk production. To address pain and cracks, proper latching of the baby during suckling is recommended. Breast engorgement is managed with cold compresses, manual or pump expression, and breastfeeding on demand. The perception of low milk production can be improved by increasing the frequency and duration of feedings. In addition Restrepo et al.<sup>(13)</sup>, mention that the positions in which mothers breastfeed their babies are a key point, recommending the cradle or traditional position, the football position, and the position in which the mother adopts a relaxed and ergonomic position to facilitate breastfeeding.

### **Recommended Frequency and Duration**

Optimizing the frequency and duration of breastfeeding is based on the paradigm of efficient feeding. A newborn typically requires between eight and twelve breastfeeding episodes in a complete circadian cycle, with intervals of approximately two to three hours. The optimal duration of each breastfeeding episode is highly individualized, ranging from 10 to 45 minutes per breast. According to the WHO, it is recommended to maintain EBF during the first trimester of life, followed by a complementary breastfeeding phase that can be extended to 24 months or more, in conjunction with the gradual introduction of solid foods appropriate for the infant's age.

### **Sociocultural Factors on Breastfeeding**

#### *Influence of family beliefs and traditions*

Breastfeeding is part of a stage in life that is related in many cultures, which are understood to be composed of diverse traditions. Such as the attachment that is promoted between mother and child from birth and during their upbringing, they tend to practice the tradition of carrying the baby on their back or chest to maintain the mutual connection.<sup>(15)</sup> Breastfeeding is prevalent and is considered a tradition that has been shared from generation to generation along with techniques that each culture performs. Breastfeeding is understood as an indispensable activity in cultures.

#### *Role of the father and extended family*

The father plays a very fundamental role during the development of breastfeeding. He is responsible for protection, and today there are studies that show that paternal education is ideal for generating learning in children from their first months of life for full learning. In addition, fathers also develop a strong attachment to their children, similar to that of mothers. However, some fathers may feel excluded if all the attention is focused on the baby.<sup>(16)</sup> To avoid this, it is essential that the mother involves him in daily care, sharing tasks such as bathing, sleeping, and stimulation. Active fatherhood benefits the baby's emotional development.

## **CONCLUSIONS**

Breastfeeding has established itself as an integral process that transcends the boundaries of biology and nutrition to become a social, cultural, and emotional phenomenon with profound implications for public health. Throughout the analysis, it became clear that this natural act not only guaranteed the optimal supply of nutrients and immune defenses to the newborn, but also strengthened the emotional bond between mother and child, creating a network of trust and security that had an impact on early emotional development. Likewise, the act of breastfeeding generated a learning and self-awareness experience in the mother, mediated by complex hormonal responses that stimulated her protective instinct and her capacity for care.

The identified benefits covered multiple dimensions. From a physiological perspective, it was confirmed that breast milk provided a unique and irreplaceable composition for infant health, protecting against disease and promoting proper development. From a psychological and emotional perspective, skin-to-skin contact and constant interaction reinforced maternal security and consolidated early attachment. In addition, its economic and environmental impact was highlighted, as it reduced spending on artificial formulas and contributed to sustainability by avoiding polluting industrial processes. These findings reaffirmed that breastfeeding should not be seen solely as an individual practice, but as a strategic policy in health promotion.

However, significant obstacles were identified that limited its full practice. These included socially transmitted myths and misconceptions, technical ignorance about breastfeeding, and anatomical or physiological difficulties faced by many mothers. These barriers were exacerbated by sociocultural and work-related factors, such as aesthetic pressure, lack of institutional support, and difficulties in reconciling breastfeeding with returning to work. These elements highlighted the urgent need for education programs, professional support, and public policies that promote inclusive social and work environments for mothers.

In conclusion, breastfeeding emerged as a deeply human and multifaceted process, in which biology, culture, and emotions converged. Recognizing its value meant not only highlighting its benefits for the mother and infant, but also understanding it as a right that must be protected by society as a whole. Only through

community awareness, the strengthening of family networks, and the implementation of supportive policies will it be possible to ensure that this natural act remains a fundamental pillar of maternal and child health and social well-being.

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