

Breastfeeding, Relactation, and High Impact Factors in Treating Moderately and Severely Malnourished Children Under Two Years of age in Colombia: A Mixed Community Study Protocol

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Study protocol

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Abstract

Background: The prevalence of acute malnutrition in Columbia was 1.6% in 2015, which was significantly higher than that found in 2010 (0.9%). Further, the distribution by age shows a higher prevalence of malnutrition in children under 2 years of age. Low rates (36.1%) of exclusive breastfeeding (BF) were found in these children, and adequate BF rates (45.5%) were found for children between 6 and 23 months. These percentages were low compared to the world average of 46%. The objective was to evaluate breastfeeding practices, relactation and feeding processes related to the recovery of children between 0 and 24 months of age with a diagnosis of moderate or severe acute malnutrition (SAM) treated at prioritized health service provider institutions and in the Nutritional Recovery Centers of the Instituto Colombiano de Bienestar Familiar (ICBF).

Methods: This research was a mixed-type observational descriptive design in the community with a quantitative and qualitative component in three phases. The first phase characterized the practices of breastfeeding and relactation among mothers seeking help for their infants through the Nutritional Recovery Centers of the Instituto Colombiano de Bienestar Familiar ICBF and health service provider institutions during the study period. In the second phase, a technical strengthening intervention will be carried out aimed at health professionals, and in the third phase, the care processes will be reviewed before and after the intervention. In addition, anthropometric variables and practices of breastfeeding on admission and discharge from care facilities were reviewed to identify potential factors related to the nutritional recovery process.

Discussion: This research aims to provide a characterization of breastfeeding and relactation in the population treated for infants with severe acute malnutrition in the CRN and IPS, improve health professionals' care processes for children with SAM, contribute to the achievement of relactation in mothers of children with moderate and severe acute malnutrition that graduate from the IPS and CRN and identify the potential factors related to the nutritional recovery of these children.

Trial registration: Not applicable

Background

The World Health Organization states that breastfeeding is the best option for children, offering 100% of energy requirements during the first six months of age, 60% from six to nine months, 50% from nine to twelve months and 30% between the first and second years of age (1). Exclusive breastfeeding is recommended for the first six months of life, and continued breastfeeding along with complementary feeding is recommended until two years of age or older. Even so, breastfeeding is interrupted for many children in the first weeks or months of life, which increases the risk of illness, malnutrition and death (2).

In Colombia, children aged 0 to 6 months show exclusive breastfeeding (BF) rates of 36.1% and adequate BF rates of 45.5% between 6 and 23 months, which are low percentages compared to the world average of 46%. On the other hand, the prevalence of acute malnutrition at the national level (1.6%) was significantly higher than that found in 2010 (0.9%), and the age distribution showed an increased prevalence of malnutrition in children under 2 years of age (3). This finding can be attributed to the challenges involved in the successful transition from exclusive breastfeeding to adequate complementary feeding (3). According to the report of deaths in children under 5 years of age associated with malnutrition in the epidemiological weeks 01 to 52 of 2019, 33.5% of the deceased children were younger than 6 months, and 91.3% were 2 years of age or younger (4). According to the weekly epidemiological bulletin from the National Institute of Health, for epidemiological week 46 of 2020, territories with the highest number and proportion of cases of moderate and severe acute malnutrition are in the Caribbean region, specifically La Guajira and Cesar; in the Pacific region, the highest prevalence is in Chocó (5).

One of the pillars of prevention of malnutrition and of nutritional recovery of infants is the reestablishment of breastfeeding in children from 0 to 6 months of age and continuance from 6 to 24 months of age, particularly if moderate or severe acute malnutrition is diagnosed in the first months of life thus, and breastfeeding becomes a therapeutic objective to treat moderate and severe acute malnutrition (6). The main cause of malnutrition in children between 0 and 6 months of age is the absence of breastfeeding; however, a woman who has interrupted breastfeeding, either recently or in the past, can resume the practice with support (7), which reduces relapses and ensures the best conditions for her child. Guidelines for the integrated management of moderate and severe acute malnutrition in children aged 0 to 59 months stress the importance of relactation, especially for children under 6 months of age during their stay in the hospital.

The Nutritional Recovery Centers (CRN, Centro de Recuperación Nutricional) modality offer nutritional care and recovery processes following the guidelines for the integrated management of acute malnutrition. As part of its intersectoral work in Columbia's Work Plan against malnutrition Ni1+, there are 13 CRNs in Colombia, whose purpose is to contribute to the nutritional recovery of children under 5 years of age who are diagnosed with acute malnutrition. With the active participation of the families, the community and the institutions of the National Family Welfare System, this modality has the capacity to care for 215 children each month (8). According to CRN records during the period between July and December 2020, the municipalities with the highest volume of care for cases of moderate and severe acute malnutrition in the country are located in the departments of Chocó (n= 105), La Guajira (n= 105) and Cesar (n=69) (9).

To improve the interventions carried out in the Health Service Provider Institutions (IPS, Spanish acronym) and in the CRN regarding breastfeeding and relactation, it is necessary to establish a baseline that characterizes breastfeeding practices among the mothers of children from 0 to 24 months of age with a diagnosis of moderate to severe acute malnutrition in the 13 CRN of the ICBF and 3 IPS of the prioritized departments of Chocó, La Guajira and Cesar. Further, this research takes advantage of these intervention spaces to identify the role of practices associated with the process of recovery of nutritional status.

Methods/design

This study has a mixed type descriptive observational design with a quantitative and qualitative component.

For the description of the feeding practices of the children attended to in health institutions and nutritional recovery centers, an information analysis is carried out based on secondary sources such as medical records and care histories.

The inclusion criteria are children between 0 and 24 months of age with a diagnosis of moderate or severe acute malnutrition cared for in nutritional recovery centers or selected IPS locations. Exclusion criteria are children between 0 and 24 months of age with metabolic or genetic diseases.

Information is obtained about the feeding practices of children and the interventions by professionals, as well as any changes in attending health professionals after caregivers complete the infant and young child feeding counseling course with an emphasis on breastfeeding. Interviews are conducted with the health professionals and mothers at the institutions before and after the course.

The inclusion criteria for the personnel in the institutions are professionals or technicians who provide care in the CRNs and IPS in La Guajira, Choco and Cesar.

To determine the mothers that are selected, their children must be less than 24 months old.

Exclusion criteria are based on whether the professional or mother refused consent to participate.

Statistical analysis

For the quantitative component, a univariate and bivariate descriptive analysis is carried out; for the continuous variables, the calculation of mean, minimum, and maximum measures of central tendency is performed, and dispersion (standard deviations); categorical variables are expressed in proportions. The data analysis is performed with the statistical analysis software STATA V16.

The qualitative information is systematized and processed through the specialized Atlas Ti software, which is designed to organize, analyze and find insights in unstructured or qualitative data, such as interviews, responses from surveys with open questions, articles, and content from social networks and the web.

However, the analysis is based on a process of triangulation of the information. Triangulation refers to the use of various methods (both quantitative and qualitative) from sources of data, theories, researchers or environments in the study of a phenomenon. For the purposes of this project, triangulation is based on the categories of default and emerging analytics. Therefore, once the collection phases of the information are completed, a dictionary of categories will be developed that allows better categorization and information analysis.

Once the categories have been conceptualized, the information is triangulated. The first type of information comes from a comparative analysis of the different sources of information; the second is based on a dialogic exercise between the different phases of the intervention; and in the third, points that are agreed upon and disagreed upon are distinguished into qualitative information and quantitative information.

Discussion

As a consequence of the high prevalence of acute malnutrition in children worldwide, several strategies have been developed to mitigate the situation. Some of the strategies have been evaluated and have produced evidence that contributes to reduction of the long-term consequences of malnutrition for cognitive development and productive capacity in adulthood. However, there is little evidence of successful experiences in the process of relactation and the importance of counseling techniques in the recovery of infants from moderate and severe acute malnutrition in Colombia.

According to international studies, breastfeeding practices are supported in different venues, such as hospitals that provide treatment for severe acute malnutrition, nutritional recovery centers and emergency care in situations of vulnerability. A retrospective analysis of data on infant and young child feeding interventions in emergencies by Save the Children International in Rohingya, Bangladesh, from November 2017 to April 2018 provides evidence of the importance of favoring breastfeeding processes to protect the lives of infants. In that study, out of 15 infants

under 6 months who were not breastfeeding, 6.7% (n=1) of mothers were able to successfully relactate. In that study, when a non-breastfed infant was identified, the first step taken was to discuss and seek agreement on feeding options with the family. In this way, relactation was presented as the first-line option (10).

A study by Lelijveld in Malawi described the use of the supplemental sucking technique for relactation in a hospital setting and found five thematic areas for facilitating factors or barriers. These were mother and infant motivation, views, breastfeeding culture, practicality, understanding the technique, and the perception of the intervention (11).

In Uttar Pradesh, India, the TSS suction supplementation technique was tested in mothers (with lactation failure) of infants <6 months with severe acute malnutrition admitted to a nutritional recovery center. TSS consists of installing a 6 or 8 F feeding tube, attaching it to the mother's breast near the nipple and placing a container with milk (expressed breast milk or diluted F-100 infant formula) on the other end. TSS was considered successful if breast milk production increased and the infant began to gain weight with exclusive breastfeeding. TSS was tried in 62 (57.4%) infants, and 55.7% (n=34) were successful. Thus, important results were obtained, as more than 50% of mothers successfully re-established the relationship, resulting in good weight gain in their infants (12).

A case study of a healthy, full-term male infant who was weaned 10 days postpartum due to his mother's illness showed successful relactation results; this infant was exclusively breastfed until 7 months and was continuously breastfed until 2 years of age. His growth was good, and he achieved approximately the 50th percentile on the weight/length curve. Therefore, relactation is possible if the mother's motivation to breastfeed is strong. The best technique to increase milk supply is short and frequent feedings (13). Another case study showed that some of the factors related to the success of relactation were associated with the young age of the baby and the mother's strong motivation (14).

In Colombia, there are strategies to accompany the nutritional recovery of children with moderate to severe acute malnutrition through care in nutritional recovery centers, coordinated by the Colombian Institute of Family Welfare (ICBF). However, at the national level, no results have been demonstrated on breastfeeding or facilitators and barriers to the success of this practice. Therefore, this study aims to contribute to the evidence by strengthening the skills of professionals who provide care to children under two years of age in aspects by training and supporting them to counsel mothers on breastfeeding and relactation practices that will contribute to the nutritional status of their children.

Abbreviations

CRN. Centro de Recuperación Nutricional

ICBF. Instituto Colombiano de Bienestar Familiar

IPS. Institución (es) Prestadora (s) de Servicios de Salud

Declarations

Ethics approval and consent to participate

This research project was approved by the Ethical Committee Fundación Santa Fe de Bogotá (Code Approval CCEI-13044-2021 Acta 08, 05 April 2021). Each participant in the study will receive detailed information about the study and will have the opportunity to ask questions about the research. Women who agree to participate will be included in the study after reading and signing the informed consent form. The population included in this study will have the right to withdraw from the study at any time without affecting their care or the work status in the institutions where the project is conducted.

Additionally, according to resolution 8430 of 1993, this study requires the endorsement of the ethics committee of participating institutions. The research carries minimal risk as it involves consulting on information from medical records, secondary sources, and data from physical examinations and anthropometric measurements. Interviews with personnel who provide assistance to the IPS and CRN, and to the mothers of the children will also be conducted. The results will benefit children to the extent that they will guide and strengthen relactation practices defined in the respective guidelines.

Consent for publication

Not applicable

Availability of data and materials

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

In accordance with the International Committee of Medical Journal Editors, the authors note the following contributions: *OV*. Conception, writing and approval of the manuscript; *PR*. Conception, writing and approval of the manuscript. All authors read and approved the final manuscript.

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