


Strategies and educational needs of parents of premature infants in a third level hospital in Cali, Colombia

Estrategias y necesidades educativas de padres de bebés prematuros en un hospital de tercer nivel de Cali, Colombia (resumen: p. 17)

Estratégias e necessidades educacionais de pais de bebês prematuros em um hospital de nível terciário em Cali, Colômbia (resumo: p. 17)

Jhon A. Quiñones-Preciado^(a)

<quinones.jhon@correounivalle.edu.co> 

Ángela A. Peña-García^(b)

<angela.pena@correounivalle.edu.co> 

continue on page 13

^(a, b) Estudiante de Postgrado en el Programa de Ciencias Biomédicas (máster), Escuela de Rehabilitación Humana, Facultad de Salud, Universidad del Valle. Calle 4b, n° 36-00, San Fernando. Cali, Valle del Cauca, Colombia.

continue on page 13

Abstract

We aimed to identify educational strategies and needs of parents of premature babies hospital in Cali, Colombia. We conducted a qualitative study of systematization of experiences focused on a process of mediated intervention. The axes of the systematization were: parental educational needs and improvement strategies for the follow-up program. The sample consisted of 11 mothers and parents who received education during a follow-up program, selected through an opinion-based sampling criterion. We conducted in-depth interviews with the parents and then used thematic content analysis. We found parental educational needs grouped into baby care: basic knowledge, behaviors and emotions, health and nutritional condition, and caregiver care. Improvement strategies suggested for the program focused on the use of information technologies, the parents' school, and the integration of families

Keywords: Infant premature, systemization, parent education, kangaroo mother program.



Introduction

Globally, 1 in 10 births occur prematurely, representing 15 million premature infants per year¹. Prematurity often occurs in conjunction with low birth weight (less than 2500 grams), which can also occur in children born at term, and both account for 20 million cases per year globally². The WHO considers prematurity and low birth weight (LBW) as a growing public health problem¹. In Colombia³ the percentage of preterm births increased from 8.49% in 2007 to 9.49% in 2016, currently around 100,000 preterm infants are born per year.

Preterm and/or low birth weight infants are at greater risk of having a disabling condition related to motor skills⁴, learning^{5,6}, social interaction⁷, vision⁸ or hearing⁹, as well as difficulty regulating their emotions, which requires greater effort and time on the part of parents compared to full-term infants¹⁰. For parents, the birth of a premature infant generates high levels of parental stress, fear and anxiety¹¹ compounded by the fact that prolonged hospitalisation delays their transition to parenthood and limits their involvement in caring for their baby¹². Thus, the information provided to parents from the Neonatal Intensive Care Unit (NICU) must face the challenge of becoming the primary caregiver of a child with strict and special care, this birth then implies a great commitment not only for the parents, but also for the hospital that accompanies the process.

The Mother Kangaroo Program (MCP) consists: early, continuous and prolonged skin-to-skin contact between mother and baby; exclusive breastfeeding and early discharge home with prior education and adaptation of the family group¹³. The program is complemented by follow-up consultations with different medical specialties and educational activities on basic baby care, designed by professionals in a standardized program. Given the variations in educational level, difficulties in accessing information, cultural differences regarding motherhood and infant care, economic and social differences, it is possible that the information is not reaching parents at the expected level.

Despite the existing strategies implemented in the educational component during the outpatient phase, most of the studies reported on follow-up programs focus on the effects of these on development and very few address aspects related to parental education¹³. According to Benzie *et al.*¹⁴ education is a crucial component in preterm infant follow-up programs, since it improves aspects related to security and self-efficacy by providing parents with tools for the care of their baby, having a positive impact on infant development.

Health education is an instrument that allows people to acquire scientific and practical knowledge to achieve their own health¹⁵. According to Modolo¹⁶ it should be directed to felt needs, offered in a continuous way, adjusted to the context and particularities of individuals, consensual, truthful, novel and focused on the community, since groups exert influence on individuals¹⁷.

For health education to be meaningful, it must start from the parents' previous knowledge, experiences and beliefs, so that knowledge is constructed by the educator and the participant^{18,19}, who must enhance their capacity and develop new resources to make conscious decisions²⁰.



In this research the social learning theory and particularly the concept of self-efficacy was considered. Social learning theory posits the individual as a holistic being in constant interaction with the social context, from which he or she learns behaviors through observation and imitation. Bandura proposes four mediating processes in learning: cognitive, emotional, affective and selection; he also proposes four sources of self-efficacy: past achievements, observation of others' behaviour, verbal persuasion and self-perception of physiological state²¹.

According to Bandura a person is considered self-efficacious to the extent that he or she appropriates knowledge, trusts and believes in his or her own abilities²². Self-efficacy is a motivational construct that influences perception, effort, persistence and achievement. In this sense, sharing and listening to the experience of other parents in the same situation allows them to validate their knowledge, gain new knowledge through observation, improve their expectations and confidence and reduce the feeling of stress and anxiety that the health situation may generate²³.

Although the institution provides education to parents in the outpatient phase, its experience in the educational component has not been documented, which can be a valuable input for the redesign of strategies that take into account the real parental knowledge need and the particularities that occur in the institution such as high demand of patients, time, space and personnel limitations.

The particular educational needs of parents are unknown, as well as the most effective educational strategies required by parents based on their own experience. Therefore, the objective of this study was to determine the educational strategies and needs of parents of premature infants in a tertiary hospital in Cali, Colombia.

Method

A qualitative study was conducted through the partial systematization of experiences focused on a mediated intervention process¹⁸. The systematization was carried out prospectively and focused on the experience of parents of premature babies who received education in the context of a follow-up program. This study was evaluated and approved by the human ethics committee of the Universidad del Valle 021-020 and by the ethics committee of the Hospital Universitario del Valle # 002-2021.

This systematization was carried out in a public hospital in the city of Cali, with parents of premature babies who attended the PMC follow-up in the second semester of 2020 and who voluntarily agreed to participate in the study through informed consent. The participation of parents was sought at different times of the follow-up program (initial: babies between 1 and 4 months, intermediate: babies between 4 and 12 months of age and final: babies older than 12 months of corrected age). An opinion sampling by criteria was carried out, obtaining a sample of 11 participants, 10 main caregiver mothers (8 of whom did not have a partner) and 1 father. Inclusion criteria included availability to participate in the research, ease of expression, motivation to tell their experience, having a stable internet connection at home and being familiar with a platform for virtual meetings.



This research sought to reconstruct and organize the parents' experience following the process described by Jara for the systematization of experiences¹⁸, with a starting point, data collection, analysis and points of arrival.

At the starting point, the experience of the parents of premature babies in the educational process provided by the PMC was defined as the object of systematization. The axes of the systematization were: the educational needs that the parents presented during the educational processes, as well as the improvement strategies that they identified.

The corpus of the research was made up of the information contained in the records of the "Kangaroo in movement" project (socio-demographic characteristics of the participating parents and babies), and semi-structured interviews carried out with the parents.

The interview aimed to learn about the educational needs and strategies proposed by the parents of premature babies who attended the PMC follow-up. The interviews were conducted by one of the researchers with training in qualitative research and were developed using an interview guide with 12 questions. These interviews were conducted in virtual mode (using the Zoom platform) and informed consent was obtained (previously sent by email) for the interviews to be conducted and recorded. It is worth clarifying that this interview modality through the zoom platform was the indicated option because of the pandemic, however, it may be a limitation for caregivers who did not have access to technology or who did not know how to use the zoom platform.

The information on sociodemographic characteristics of the participants and their babies was recorded in a database and a descriptive statistical analysis was performed with measures of central tendency, dispersion, and frequency tables according to the nature of each variable.

The interviews with the parents were transcribed to reconstruct the atmosphere of the interview, the parents' accounts, and the interviewer's impressions during the encounter. The researchers repeatedly read the transcripts to obtain a complete understanding of the data and then did the content analysis. This analysis was done following the inductive analysis process proposed by Herrera *et al.*²⁴.

In the analysis process, the following elements were initially identified: sampling unit (parents' educational experience), recording unit (minimum portion of content that is separated) and unit of analysis (interview)²⁴. The ATLAS.Ti 9 software, which is a tool for the analysis of qualitative data, was used to code and categorize the interview texts.

To ensure the accuracy and reliability of the data, a peer verification approach was used. To do this, one researcher coded and categorized the data, which were then evaluated by another researcher on the team. If there were differences with the codes and categories between researchers, these were discussed until a consensus was reached. An audit trail was used by the research assessors to check the reliability of the data. The review and analysis of the data by experienced people in the research team increased the reliability of the study.

Once the coding was completed, three of the participants were summoned to a new virtual meeting to show them the categorization process and thus validate that the information provided by them was faithfully represented. In this way, the accuracy of the codes and interpretations was guaranteed.



At the endpoint, the researchers reviewed the educational needs that parents identified in the interviews, as well as the main findings and recommendations that emerged in the conversations. This final look at the results allowed them to identify additional issues to further improve the educational component of the PMC.

Results and discussion

Frame 1. Socio-demographic characteristics of participants.

PSEUDONYM	EDUCATIONAL LEVEL*	ETHNICITY	PROCEDENCE	AGE	SOCIOECONOMIC LEVEL	SEX BABY**
Diana	HE	Mixed-ethnicity	Valle	31	3	M
Sofia	HE	Mixed-ethnicity	Cali	26	1	M
Ana	SE	Mixed-ethnicity	Valle	24	1	M
Juana	SE	Mixed-ethnicity	Valle	23	1	F
Rebeca	SE	White	Valle	24	1	M
Laura	HE	Mixed-ethnicity	Valle	29	2	M
Angela	SE	White	Cali	26	2	F
Luz	HE	Mixed-ethnicity	Cali	29	2	M
Andrea	HE	Mixed-ethnicity	Valle	31	1	M
Blanca	SE	Mixed-ethnicity	Cali	40	1	M
Juan	HE	Mixed-ethnicity	Valle	35	1	F

* SE: Secondary education - HE: Higher education

** M: Male -- F: Female

Source: "kangaroo on the move" project database.

As shown in Frame 1. The sample consisted of 10 mothers and 1 father, aged between 23 - 40 years with an average age of 28 years ([SD]: 5). Four of the parents live in Cali while the rest come from other municipalities in Valle del Cauca. In relation to socioeconomic stratum, seven belong to stratum 1, three to stratum 2 and one person to stratum 3. With respect to educational level, five have a high school education and six have completed higher education.

Axis of educational needs of parents of premature infants of the PMC

In this axis, we explored the topics in which parents expressed the need for knowledge to understand the process of raising their babies, emerging from the stories 8 categories, as shown in Table 1.

**Table 1. Parental educational needs**

CATEGORY	CODES
Basic knowledge	Become familiar with clinical and home knowledge
	Information about prematurity
Baby behaviors and emotions	Babie’s emotions
	Behavioral problems
Baby’s health	Possible baby illnesses
	Posible causes of infant’s death
Baby Care	Basic baby care
	Warning signs
	Self-regulation
	Sleep-wake cycle
	Infant’s accidents at home
	Covid -19 prevention
Feeding	Breastfeeding
	Alternatives to breastfeeding
	Complementary feeding
Baby development	Weigth and size
	Psychomotor development
	Dentition
	Early stimulation
Caregiver care	Self-care
	Emotional management
	Mother’s health condition
	Maternal care post-cesarean section

Source: Own elaboration

In terms of basic knowledge, parents say that a premature birth, being an unexpected event, they have little understanding at that moment about what is happening to the mother’s body and health condition as well as the baby’s health, which is why they are filled with fear and uncertainty and express the importance of becoming familiar with clinical knowledge and prematurity when expressing:

Having a premature baby is something that you don’t count on saying, ‘Jeez my baby came early, it sped up the processes,’ what is it going to take? How is it going to affect him? How is it going to hurt him? (Juan)

Accordingly, Pava²⁵ commented that it is important for parents to receive information and understand what is going on; being informed during hospitalization helps to decrease distress and minimize the impact they face in a NICU.

Similarly, O’Donovan and Nixon¹² in their phenomenological study identified that not all parents have sufficient knowledge to respond to the needs of the baby, which



change from day to day. They highlighted the need for further research to develop and test interventions based on parents' experience.

Regarding the baby's behaviors and emotions, it is important to note that when the babies are sent home, caregivers may perceive different emotions and behaviors in the babies compared to those they presented during the NICU stay and do not understand how to handle it. They also explained that when compared to their other children who were born at term, these babies were more "spoiled" and less receptive to their attentions; referring to the importance of being educated on the babies' emotions and behaviors upon mention:

It can be a specific topic that I really like, I would really like to deal with the emotional part of children and how one can collaborate in it. (Diana)

The baby's health condition is an important issue for caregivers, as they want to provide what is necessary for their babies to develop properly. However, this is frustrated when they do not understand their babies' health condition and express it:

The only thing I consulted him about was autism, that, well, he had some things and others not the same. (Flor)

In relation to baby care, when caregivers arrive home, they are faced alone with their baby's needs and various doubts arise about basic care, such as the baby's first bath, warning signs, how to react in the event of an accident to the baby at home. Additionally, a new concern arises due to the Covid-19 pandemic, where caregivers refer to doubts regarding prevention measures and the use of masks in the youngest children. This is what they say:

Like the risks that you start to have at home so you don't know how to react, if you give him something to eat and he doesn't have teeth and even if it's just a little bit he's choking, how should I react? (Rosario)

This coincides with the findings of Salazar *et al.*²⁶ in the evaluation of a PMC in Tunja, where mothers had unstructured knowledge about this care. Similarly, Micha *et al.*²⁷ found that parents claimed to have received training, but the consensus was that it was insufficient because it did not meet their expectations.

Feeding includes issues related to breastfeeding, alternatives to breastfeeding, complementary feeding and nutrition. Where caregivers express doubts about the positioning and appropriate times for breastfeeding.

Likewise, the mothers in Gonzalez's study⁶ frequently expressed feeding problems, especially food refusal and psychofunctional symptoms at 2 years of age. This same author comments that this situation may occur because feeding may be influenced and complicated by the unpleasant experiences lived in the early stages and by the techniques used to feed them during hospitalization.



But they didn't teach me what other alternatives I had to feed him, okay? Bottle feeding, tube feeding, relactation; all those things that I know now that I didn't know back then. (Miriam)

After 6 months of age, caregivers identify that it is time to introduce solid foods to the diet, however, they express uncertainty about the lack of appetite of some children, rejection of some foods, about the corrected age of the baby which corresponds to the chronological age adjusted to the number of weeks that were missing for the 40 weeks of gestation and the foods that they tolerate, to mention:

But with this one it's not the same, I was scared to give him something and that he would suffer some allergy or that he wouldn't be prepared and I couldn't give him that, because I always thought, I've always been told that if he was 6 months old then in reality he is 4 months old, so I didn't know if I really had to give him at 6 months or at 8 months, and I didn't know what I could give him, that his body would assimilate it well. (Rosario)

Regarding the baby's development, caregivers understand that it is a continuous process of acquiring skills as a consequence of the progressive maturation of their body structures, they recognize that the speed and acquisition of skills depends on each child and that they can be affected by the fact that their babies were born prematurely. However, they express doubts about the age of the baby, tending to confuse the corrected and chronological age, requiring to know what happens specifically at each stage as referred to below:

In the first month this will happen, in the second month the baby will go through this, in the third month the baby will go through this, in the third month the baby will go through this... in other words, become very familiar with each stage that the baby is going through. (Juan)

They also comment on doubts about the teething, weight and height of the babies with respect to their corrected age, saying:

Then you start to ask how much he should weigh normally because the weight of a normal child is not the same as that of a premature child, how much is missing to reach the normal weight? So there are many things that you have doubts about, because the child doesn't grow in height either. (Luz)

The development of the baby is a matter of great concern for most parents because this process is affected in premature babies and generates uncertainty in parents about what is the ideal weight and size according to the corrected age of their baby and at what times or stages of development their baby should achieve certain skills. In this regard, Castellanos *et al.*²⁸ agree that the motor development of premature infants shows differences in the speed and quality of movement compared to children born at term.



In addition, parents feel the need to be involved in the developmental process of their baby, so they consider important to have information about early stimulation and appropriate exercises to perform according to the corrected age of the baby, which will allow them to help him/her to reach the skills at the right time. In addition, they are afraid that not stimulating them correctly may have the opposite effect. Rubio *et al.*²⁹ in their study on the characteristics of premature infants express that if sensory stimuli are not provided appropriately, starting from: containment, multisensory stimulation and transition in movement; it will cause repercussions in babies in different areas, such as exploratory visual behavior and motor development.

Additionally, caregivers would like to be involved in the developmental process and help their babies achieve their skills in a timely manner, which is why they express the importance of being provided with information on early stimulation and exercises to do at home with their babies, as mentioned:

The child at this stage needs, well, motor skills, so we are going to do certain types of exercise, the child is going to play here, he is going to do this, this and that, and focus on those aspects. (Juan)

Regarding caregiver care, it could be said that this is lagging behind, thus ignoring the importance of good caregiver health in the performance of their role, especially that of mothers, who in their role as parents live the pregnancy-delivery process and are the ones who must immediately assume the care of newborns. This work can become overwhelming and can affect the physical and emotional health of the caregiver, however, the approach to this issue falls short in the NICU and is not addressed during follow-up. Consequently, upon arriving home, caregivers report a lack of knowledge regarding their health condition, self-care and emotional management:

For you it is a totally different change, because it is not one thing but a lot of things that you have to provide for the baby. So for you it's a bit complicated because I want to take care of him, I want to protect him, I want to feed him, but I also need him, I need to feed myself, I need to rest, so it's a bit complicated [...] Well, as I said before, it's something very nice, very beautiful; but at the same time there are a lot of emotions that you have to deal with. At the beginning I remember that I felt bad, that I started to cry and I didn't know why. (Sofia)

Mothers' care is important because they assume the biological responsibilities of overcoming childbirth and breastfeeding, in addition to the fact that on many occasions their recovery process is interrupted because they take on the role of main caregiver, in spite of their physical and emotional exhaustion. Ruiz *et al.*³⁰ agree with this, explaining that mothers of premature infants are less likely to be accompanied in the postpartum period than full-term mothers. In relation to the above, Arzani *et al.*³¹ add that the lack of attention to mothers and their long-term emotional and psychological concerns can affect their health and quality of life, such as sleep and concentration disorders, loss of ability to make decisions and communicate with other family members and friends.

Educational Strategies Axis

Table 2 shows the strategies suggested by participants, as well as the elements that comprise them.

Table 2. Improvement strategies suggested by parents

CATEGORY	SUBCATEGORY	CODES
Virtual education	Virtual interaction	Virtual lectures
		WhatsApp group
		Video or phone call
	Recommendations	Sharing information on a regular basis
		Baby's participation during education
		Rules for virtual participation
	Information and communication technologies	Send information to mobile devices
		Virtual platforms
	Advantages	Advantages of virtual education
Educación presencial	Talks	Educational talks
		Face to face spaces
	Face to face dynamics	Integrating infants
		More games
	Own educational moments	In the living room
		Spaces for education
	Scope	Family inclusion
		Not just premature babies
		First year
	Educational material	Innovation
		Images or videos
	Other strategies	Parenting school
		Take it outside of the hospital and make it more social

Source: Own elaboration.

Parents in the stories considered virtual education as a viable and appropriate strategy because it allows compliance with preventive isolation measures, recognizing it as a way for learning that is characterized by its dynamism and interactivity.

How would you like to receive specialized education from the program? Well, in these times of pandemic, virtual, the less I have to go to the doctor the better. (Andrea)

Accordingly, Silva *et al.*¹¹, considered that, through technology, it is possible to expand access to quality health information and promote the autonomy of families in



care. In accordance with this, Jiménez³² comments that technology plays an important role, since it provides facilities that include the transmission of voice, video, data and graphics.

In the virtual interaction, parents recognize the possibility of receiving classes or developing activities in an innovative way, which aim to support them in the process of acquiring relevant information related to the care and development of their babies, through different platforms that allow communication and closeness between professionals and other parents in the program.

An innovative approach are games in the field of health education, which can be accessed via computer or smartphone, in the recent study by D'Agostini *et al.*³³ from 2020 the educational game “e-Baby Family” was developed, based on a qualitative study with content analysis of the discourse of 8 parents of premature babies. The application presents animations that simulate situations that may occur to parents of premature babies in the hospital and at home.

Accompanied by virtual strategies, parents make specific recommendations about what they would like to expect from these spaces. At first, they want a lot of information to be shared with them, as this fragment shows:

Not to saturate ourselves a little more, with more information at this stage, yes, of course, because if you like it and want to be there, you say, no, I've already read this, I hope tomorrow they send more or such and such, or that you are learning. (Juan)

In the interviews, parents recognize the advantages of virtual education processes as a strategy that helps them to avoid travel, save time and money, being more timely and faster in learning. As evidenced in the following section of an account of a mother, who refers to virtual education:

It would avoid having to travel to different places. Many times when you don't have someone to take care of the children, you have to do wonders to be able to go to places, so it's better. (Angie)

In spite of the desire of the interaction space and the receptive attitude to receive information, they expect that some rules that control the participation are taken into account. They consider that they are spaces in which they can deviate from the topic or send erroneous information, making a call to the professional leader of the strategy, in a kind and respectful way, to regulate these types of events.

Parents, due to the current contingency, have shown receptivity for the alternatives that virtuality offers today, however, they affirm that they prefer face-to-face education. Regarding which they mention that they would like to have spaces outside the consultation where they can develop: workshops and talks with professionals, integrating the children. As this is a more experiential strategy, they consider it conducive to acquiring knowledge. In response to this, Araque *et al.*²⁶ implemented an intervention strategy in stages, with practical demonstrations in workshops; detection



of conceptual gaps and accompaniment. The same author states that this should be based on a diagnosis of educational needs and, based on this, a flexible educational strategy should be designed, in addition to having human resources dedicated to individualized training, monitoring visits and family evaluation.

All parents agreed that they would like to receive information through audiovisual elements, such as videos and images, since they consider themselves more visual and avoid extensive volumes of information. They want this educational material to be innovative and allow them to consolidate their knowledge.

I wish one could do that accompaniment of saying, there is no school for parents for premature children of one, two, three years old, that is, in the sequence of their infancy until a child finishes its normal development, one says uff well it would be fabulous because one learns a lot. (Juan)

Parents identified brochures as the most used educational strategy, however in their view this did not represent the strategy with which they felt they could best take advantage of the information provided. In the study by Lemos and Veríssimo³⁴ they report that for educational materials to be appropriate for their intended audience, and for the construct to be transmitted and worked with, they must be constructed with robust methodological bases, adequate theoretical references, and valid and reliable strategies.

There were other strategies that parents would like to find in educational processes beyond the hospital that generate a more conducive environment for social interaction. They also mentioned that a parenting school would guide them adequately, as there is a certain degree of mistrust in the advice that they get from the internet and their relatives.

This is consistent with the study by Lemos and Veríssimo³⁴, which addressed the development of educational strategies aimed at parents of premature babies from the perspective of popular health education, explaining that popular health education is not a process of knowledge transmission, but of expanding the spaces for interaction and cultural negotiation among the various actors involved in a given social problem for the shared construction of knowledge.

In accordance with the theoretical model of health education based on experience, the need for educational spaces is highlighted, where beyond imparting knowledge, parents are allowed to share their experience in raising a premature baby so that the learning acquired is meaningful and lasting.

Likewise, institutions that provide education programs should provide spaces for parents to interact and share experiences related to preterm birth and parenting within a health education framework, in which parents' learning is valued, recognized and promoted.

Conclusions

The educational experience of parents of preterm infants in the context of follow-up programs is diverse, and this study identified perceptions of the educational needs



of one group of parents and how they would like to receive that education. In the family-centered models of care that predominate in NICUs, identifying parents' preferences and needs is a key aspect of designing successful follow-up programs.

The educational needs of the parents revolve around basic care of the preemie, feeding, psychomotor development, forms of stimulation and expected behaviors and emotions of the baby in different circumstances.

The way in which parents expect to receive information and education involves a combination of face-to-face with accompaniment of the virtual modality, where the creation of a school for parents stands out. Greater interaction and practical exercises that include the participation of babies and their parents with other peers are requested; while in the virtuality WhatsApp groups and information in audiovisual format are mentioned.

Authors

Dilan G. Vallecilla-Zambrano^(c)

<dilan.vallecilla@correounivalle.edu.co> 

Jenifer A. Yama-Oviedo^(d)

<jenifer.yama@correounivalle.edu.co> 

Nasly L. Hernández-Gutiérrez^(e)

<nazly.lorena.hernandez@correounivalle.edu.co> 

Cecilia A. Ordoñez-Hernández^(f)

<cecilia.ordonezh@unilibre.edu.co> 

Affiliation

^(c, d, e) Universidad del Valle. Cali, Valle del Cauca, Colombia.

^(f) Facultad de Salud, Universidad Libre Seccional Cali. Cali, Valle del Cauca, Colombia.

Authors' contribution

All authors actively participated in all stages of preparing the manuscript.

Acknowledgments

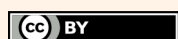
To the Mother Kangaroo Program of the Hospital Universitario del Valle, and to the parents who participated in the study.

Conflict of interest

The authors have no conflict of interest to declare.

Copyright

This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, BY type (<https://creativecommons.org/licenses/by/4.0/deed.en>).





Editor

Antonio Pithon Cyrino

Associated editor

María Fernanda Gonzalez

Translator

Nasly Lorena Hernandez

Submitted on

10/21/22

Approved on

12/02/22

References

1. Organización Mundial de la Salud. Nacimientos prematuros [Internet]. Ginebra: WHO; 2018 [citado 5 Dic 2022]. Disponible en: <https://www.who.int/es/news-room/fact-sheets/detail/preterm-birth>
2. Organización Mundial de la Salud. Metas mundiales de nutrición 2025: documento normativo sobre bajo peso al nacer [Internet]. Ginebra: WHO; 2014 [citado 5 Dic 2022]. Disponible en: <https://www.who.int/es/publications/i/item/WHO-NMH-NHD-14.5>
3. Ospino Guzmán MP, Mercado Reyes MM. Comportamiento de la prematuridad en Colombia durante los años 2007 a 2016 [Internet]. Bogotá: Fundación Canguru; 2018 [citado 5 Dic 2022]. Disponible en: <https://fundacioncanguro.co/wp-content/uploads/2018/11/Comportamiento-de-la-prematuridad-en-Colombia-durante-los-a%C3%B1os-2007-a-2016.pdf>
4. Gonzales Reifarth G. Incidencia de las alteraciones motrices en niños prematuros: una revisión sistemática [tesis]. Barcelona: Escuelas Universitarias Gimbernat; 2020.
5. Bastos Rubio AM, Losada Castaño MA, Méndez Díaz TA, Valenzuela Mora JJ. Factores perinatales que inciden en las dificultades del aprendizaje en niños [tesis]. Bogotá: Universidad Cooperativa de Colombia; 2020.
6. Gonzales Serrano F. Nacer de nuevo: la crianza de los niños prematuros: aspectos evolutivos. Atención y acompañamiento al bebé y la familia. Cuad Psiquiatr Psicoter Nino Adolesc. 2010; 49:133-52.
7. Iglesias Comesaña A. Influencia del método madre canguro en la prevención de la depresión posparto aplicado a madres y padres de bebés prematuros ingresados en la UCI neonatal [tesis]. A Coruña: Universidad da Coruña; 2019.
8. Butko A. Estudio del control oculomotor en niños nacidos prematuros [tesis]. Zaragoza: Universidad Zaragoza; 2020.



9. Calderón-Carrillo M, Ricardo-Garcell J, Cycyk LM, Jackson-Maldonado D, Avecilla-Ramírez G, Harmony T. Los padres como promotores del desarrollo de lenguaje de bebés prematuros: propuesta de intervención temprana. *Actual Psicol.* 2018; 32(124):51-63.
10. Carbonell OA, Plata SJ, Peña PA, Cristo M, Posada G. Calidad de cuidado materno: una comparación entre bebés prematuros en cuidado madre canguro y bebés a término en cuidado regular. *Univ Psychol.* 2010; 9(3):773-85.
11. Silva IOAM, Del Angelo Aredes N, Bicalho MB, Delácio NCB, Mara L, Mazzo LL, et al. Booklet on premature infants as educational technology for the family: quasi-experimental study. *Acta Paul Enferm.* 2018; 31(4):334-41.
12. O'Donovan A, Nixon E. "Weathering the storm:" mothers' and fathers' experiences of parenting a preterm infant. *Infant Ment Health J.* 2019; 40(4):573-87.
13. Colombia. Ministerio de Protección Social. Actualización de los Lineamientos Técnicos para la implementación de Programas Madre Canguro en Colombia, con énfasis en la nutrición del neonato prematuro o de bajo peso al nacer [Internet]. Bogotá: Ministerio de Protección Social; 2017 [citado 5 Dic 2022]. Disponible en: <https://minalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/implementacion-programa-canguro.pdf>
14. Benzie KM, Magill-Evans JE, Hayden KA, Ballantyne M. Key components of early intervention programs for preterm infants and their parents: a systematic review and meta-analysis. *BMC Pregnancy Childbirth.* 2013; 13 Suppl 1:1-15.
15. Sánchez-Candamio M. Educación para la salud en grupo: acotaciones conceptuales y terminológicas sobre un proceso de cambio. *Clin Salud.* 1994; 5(3):281-7.
16. Modolo MA. Educación sanitaria, comportamiento y participación. *Compilación CAPS.* 1979; 8:39-58.
17. Gavidia Catalán V, Rodés Sala MJ, Carratala Beguer A. La educación para la salud: una propuesta fundamentada desde el campo de la docencia. *Ensen Cienc.* 1993; 11(3):289-96.
18. Holliday OJ. Orientaciones teórico-prácticas para la sistematización de experiencias [Internet]. Bilbao: Alboan; 2013 [citado 5 Dic 2022]. Disponible en: http://centroderesursos.alboan.org/ebooks/0000/0788/6_JAR_ORI.pdf
19. Perez Jarauta MJ, Echauri Ozcoidi M, Ancizu Irure E, Chocarro San Martin J. Manual educación para la salud. Navarra: Instituto de Salud Pública; 2006.
20. Riquelme Pérez M. Metodología de educación para la salud. *Pediatr Aten Prim.* 2012; 14 Suppl 22:77-82.
21. Vielma Vielma E, Salas ML. Aportes de las teorías de Vygotsky, Piaget, Bandura y Bruner. Paralelismo en sus posiciones en relación con el desarrollo. *Educere* [Internet]. 2000 [citado 5 Dic 2022]; 3(9):30-7. Disponible en: <https://www.redalyc.org/articulo.oa?id=35630907>
22. Busot I. Teoría de la auto-eficacia (A. Bandura): un basamento para el proceso instruccional. *Encuentro Educ* [Internet]. 1997 [citado 5 Dic 2022]; 4(1). Disponible en: <https://produccioncientificaluz.org/index.php/encuentro/article/view/1090>
23. Ollero Gil M. Programa de educación para la salud dirigido a padres y madres de recién nacidos prematuros tardíos [tesis]. Barcelona: Universitaria de Enfermería de Vitoria-Gasteiz; 2020.
24. Diaz Herrera C. Investigación cualitativa y análisis de contenido temático. Orientación intelectual de revista *Universum.* *Rev Gen Inf Doc.* 2018; 28(1):119-42.



25. Pava Laguna C. Prácticas de cuidado con el recién nacido prematuro o bajo peso, que ofrecen las madres en el hogar [trabajo de grado] [Internet]. Bogotá: Facultad de Enfermería, Universidad Nacional de Colombia; 2013 [citado 5 Dic 2022]. Disponible en: <https://repositorio.unal.edu.co/handle/unal/20526>
26. Araque Salazar S, Ariza Riano NE, Valderrama Sanabria ML. Estrategia educativa para el cuidado domiciliario de los bebés prematuros: madres usuarias del programa madre canguro de Tunja, Colombia. *Rev Cuid.* 2013; 4(1):467-74.
27. Agami-Micha S, Iglesias-Leboreiro J, Bernárdez-Zapata I, Rendon-Mecias ME, Juárez-Domínguez G. Capacitación de padres para el cuidado de niños pretérmino en su casa. *Rev Mex Pediatr.* 2013; 80(2):61-4.
28. Castellanos-Garrido AL, Alfonso Mora ML, Campo-Gómez MP, Rincón-Niño G, Gómez-Patiño MC, Sánchez-Luque YN. Edad motora versus edad corregida en infantes prematuros y con bajo peso al nacer. *Rev Fac Med.* 2014; 62(2):205-11.
29. Rubio-Grillo M-H, Zamudio-Espinosa D-C, Rojas-Cerón CA. Los hitos del desarrollo del bebé prematuro: una mirada desde las co-ocupaciones. *TOG (A Coruña).* 2020; 17(2):150-9.
30. Ruiz LA, Ceriani Cerdnadas JM, Cravedi V, Rodríguez D. Estrés y depresión en madres de prematuros: un programa de intervención. *Arch Argent Pediatr.* 2005; 103(1):36-45.
31. Arzani A, Valizadeh L, Zamanzadeh V, Mohammadi E. Mothers' strategies in handling the prematurely born infant: a qualitative study. *J Caring Sci.* 2015; 4(1):13-24.
32. Jimenez Moncada J, Chacón Araya Y. The effect of playing videogames on social, psychological, and physiological variables in children and adolescents. *Retos.* 2012; (21):43-9.
33. Mobiglia D, Agostini M, Del Angelo Aredes N, Campbell SH, Monti Fonseca LM. Serious Game e-Baby Família: an educational technology for premature infant care. *Rev Bras Enferm.* 2020; 73(4):1-8.
34. Lemos RA, Ramalho Verissimo MLO. Estratégias metodológicas para elaboração de material educativo: em foco a promoção do desenvolvimento de prematuros. *Cienc Saude Colet.* 2020; 25(2):505-18.



Resumen

El objetivo fue determinar las estrategias y necesidades educativas de padres de bebés prematuros en un hospital de Cali, Colombia. El estudio fue cualitativo de sistematización de experiencias centrada en un proceso de intervención mediada. Los ejes de la sistematización fueron: las necesidades educativas y las estrategias de mejoramiento. La muestra estuvo conformada por 11 madres y padres quienes recibieron educación en el contexto de un programa de seguimiento, seleccionados a través de un muestreo opinático por criterios, entrevistados en profundidad. Se realizó análisis de contenido temático. Se encontró que las necesidades educativas se agrupan en los cuidados del bebé: conocimientos básicos, conductas y emociones, condición de salud y alimentación y cuidados del cuidador. Las estrategias se enfocaron en el uso y aprovechamiento de las tecnologías de la información, la escuela de padres y la integración del grupo familiar.

Palabras claves: Recién nacido prematuro. Sistematización. Educación a padres. Programa madre canguro.

Resumo

O objetivo foi determinar as estratégias e necessidades educativas dos pais de bebês prematuros em um hospital de Cali, Colômbia. O estudo foi qualitativo de sistematização de experiências centradas num processo de intervenção mediado. Os eixos de sistematização foram: necessidades educativas e estratégias de melhoria. A amostra foi composta por 11 pais e mães que receberam educação no contexto de um programa de acompanhamento, selecionados por amostragem de opinião por critérios, entrevistados em profundidade. Foi realizada análise de conteúdo temática. Constatou-se que as necessidades educativas se agrupam nos seguintes cuidados com o bebê: conhecimentos básicos, comportamentos e emoções, estado de saúde, alimentação e cuidados do cuidador. As estratégias centraram-se na utilização e exploração das tecnologias de informação, na escola para os pais e na integração do grupo familiar.

Palavras-chave: Recém-nascido prematuro, sistematização, educação de pais, programa mãe canguro.