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Facilitators and barriers to education in a kangaroo mother care program

Facilitadores y barreras de la educación en un programa madre canguro

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ABSTRACT

Introduction: Parent education on home care for premature infants is essential for maintaining health and preventing illness. **Objective:** To identify the facilitators and barriers of the educational component of a Kangaroo Mother Care program for parents of premature infants. **Method:** This qualitative study used an experience systematization approach. Participants included ten mothers and one father attending follow-up consultations for their babies in an outpatient service, selected through purposive convenience sampling. Data were collected using semi-structured interviews. **Results:** Facilitators identified included the use of simple language by nurses and therapists, professionals addressing questions through educational materials, the exchange of experiences with other parents, and the proactive attitude of caregivers and parents. Barriers included using technical language by doctors, contradictory information from different professionals, disjointed services, access difficulties, and the lack of appropriate spaces for educational services for parents, among others. **Conclusions:** Facilitators and barriers were identified in the categories of healthcare professionals, healthcare services and care, and caregivers, with only facilitators found in the social environment category.

Keywords: Health education; Needs assessment; Barriers to access to health services; Parents; Kangaroo-mother care method; Health promotion.

RESUMEN

Introducción: la educación de los padres de bebes prematuros en relación con el cuidado en casa es fundamental para el mantenimiento de la salud y la prevención de enfermedad. **Objetivo:** determinar los facilitadores y barreras de un programa del componente educativo para padres de prematuros de un programa madre canguro. **Método:** el estudio fue cualitativo con enfoque de sistematización de experiencias, los participantes fueron diez madres y un padre que asistieron a consulta de seguimiento de sus bebés a un servicio de consulta externa, seleccionados por muestreo propositivo por conveniencia. La técnica de recolección fue entrevista semiestructurada. **Resultados:** el lenguaje sencillo de enfermeras y terapeutas, la resolución de dudas por parte de profesionales a través de materiales educativos, el intercambio de experiencias con otros padres y la actitud proactiva de los cuidadores y padres fueron reconocidos como facilitadores. El lenguaje técnico de los médicos, la información contradictoria de unos profesionales a otros, la desarticulación de los servicios, las dificultades de acceso, la falta de espacios adecuados para el servicio educativo para los padres entre otras fue identificadas como barreras. **Conclusiones:** se encontraron facilitadores y barreras en las categorías: profesionales de la salud, atención y servicios en salud y cuidador y solo facilitadores en la categoría entorno social.

Palabras clave: educación en salud; recién nacido prematuro; barreras de acceso a los servicios de salud; padres; método madre-canguro; promoción de la salud.

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INTRODUCTION

Globally, approximately one in ten births is preterm, amounting to about 15 million preterm births annually.[1] In Latin America, around 135,000 preterm births are reported each year, with particularly severe outcomes for extremely preterm infants (<32 weeks), who have a high mortality rate, and among survivors, up to 60% develop significant and permanent neurological disabilities. Every day, approximately seven thousand newborns die worldwide, mostly in low-income countries, where 80% of these deaths occur on the first day of life and are associated with prematurity.[2] Prematurity and low birth weight increase the risk of motor development delays and various disabilities, including motor impairments,[3] learning difficulties,[4] and social interaction problems.[5]

Health systems worldwide, regardless of their level of development, face the challenge of providing high-quality care based on the best available evidence for the premature population. In this context, the World Health Organization (WHO) recommends the Kangaroo Mother Care (KMC) method as a high-impact, cost-effective, and low-technology intervention specifically designed for the care of preterm and low-birth-weight infants who are at high risk of neonatal mortality and morbidity.[1,6] KMC involves practices such as continuous and prolonged skin-to-skin contact between the baby and the caregiver, as well as exclusive breastfeeding. It is also associated with early hospital discharge and continued home support for the caregiver and baby.[7] The WHO advises continuing KMC in the hospital until the infant reaches a term gestational age (around 40 weeks) or a weight of 2500 g.[8] Subsequently, regular follow-up visits should be conducted with pediatricians, dentists, neurodevelopment professionals, and psychologists to detect potential developmental disorders early.[9] Additionally, institutions should provide education on baby care at home;[7] however, this aspect of care has not been sufficiently documented. Although Quiñones et al.[10] discussed the needs and educational strategies perceived by parents during the follow-up of Kangaroo Care, specific barriers and facilitators have received little attention.

The birth of a preterm baby can significantly alter family dynamics.[11] Parents often experience fear, anxiety, stress, and depression during prolonged hospitalization, emotions that tend to intensify upon returning home due to the responsibility of caring for the baby.[12] Caring for a preterm infant requires parents to acquire specific skills to protect the child's health and ensure proper development, underscoring the need for neonatal health programs to provide education that facilitates family adaptation.

Although national,[13] and international,[9] guidelines for the care of preterm infants exist, their implementation faces challenges that go beyond technical aspects due to the cultural and contextual specificities of each setting.[14] The available information primarily focuses on basic care, aiming to facilitate parent participation and promote bonding.[9,13] However, these guidelines often do not account for the specific realities of each community, such as language barriers,[15] traditional beliefs,[16] or limited access to healthcare services,[17] making it challenging for parents to fully engage in their roles and effectively care for their children.

In this context, subjectivity and local experiences are crucial in identifying barriers and facilitators not evident from a standardized approach.[18,19] Incorporating the voices and experiences of parents and caregivers allows for adapting education and strategies within the KMC program, making them more relevant and accessible. Tailoring educational systems to the specific needs of each community enhances program effectiveness and empowers parents, strengthening their confidence and active participation in newborn care.[20]

Despite studies on the barriers and facilitators within the Kangaroo Mother Care program,[21–23] research specifically focused on the educational component for parents of preterm infants in Colombia remains limited. This knowledge gap is important to guide education as an essential part of improving service delivery. The findings of this study will not only contribute to improving the program locally. However, they could also serve as a foundation for strengthening other national programs and adapting educational strategies in similar contexts and realities across Latin America.

Therefore, the present study establishes the following general objective: To identify the factors that facilitate or hinder the educational component of the Kangaroo Mother Care program in a public hospital in Valle del Cauca, Colombia.

METHOD

The study was conducted using a systematization of experiences from a critical interpretive research approach,[24] at an outpatient Kangaroo Mother Care (OKMC) setting in a tertiary care university hospital. This qualitative research employed a design based on systematizing experiences, aligning with the critical interpretive framework. The participants included ten mothers and one father of premature babies who attended the OKMC follow-up consultations and agreed to participate through informed consent. The population comprised parents of preterm infants receiving follow-up care, with a sample of 11 participants selected through convenience sampling to ensure data saturation. Data saturation was achieved with these participants, who were interviewed via a digital platform.

Two data collection strategies were employed: document review and semi-structured interviews. Records from a "Kangaroo on the Move" project were reviewed to identify the participating parents' and their babies' sociodemographic and clinical characteristics. This complemented the primary data collection method, which relied on semi-structured interviews.

The semi-structured interviews were designed to explore the educational experience within the context of the OKMC program. Participants were informed about the research objectives, and informed consent was obtained during a routine visit. The interviewer was an undergraduate student who had received training in qualitative health research at the Universidad del Valle.

The interviews were conducted on the Zoom platform, using a guide with twelve questions addressing the barriers and facilitators of the parents' educational experience. A pilot test was conducted to refine the interview guide, which included 12 questions exploring the barriers and facilitators in the parents' educational experience. The average duration of the interviews was one hour, and they were recorded and transcribed, including the interviewer’s interactions and impressions.

An inductive analysis of the interviews was conducted.[25] The sampling, recording, and analysis units were identified during this process. ATLAS.Ti 9 software was used to code and identify categories in the data. Each step of the interview analysis process underwent peer review to ensure the accuracy of interpretations. At the end of the analysis process, three of the participating mothers were invited to validate the representativeness of the interpretations made by the researchers.

The project was approved by the University's Human Ethics Committee (#021-020) and the Hospital (#002-2021). Ethical considerations for this study adhered to the principles outlined in the Declaration of Helsinki, ensuring respect for human dignity, autonomy, and confidentiality throughout the research process. Additionally, informed consent was obtained, with participants fully aware of the purpose of the study and their rights as voluntary contributors.

RESULTS

Factors related to healthcare professionals, healthcare services, caregivers, and the social environment were identified as facilitators. (Table 1).

Table 1. Facilitators in the PMC Education Processes.

Category	Code
Healthcare Professionals	Easy language
	Professional experience
	Support from healthcare staff
	Safety/credibility in consultations
Healthcare Services	Educational foundations for intra-care
	Educational material
	Access to complementary health services from other institutions
	Virtual platforms/WhatsApp group
Caregiver	Parents' attitude/initiative
	Family/friend support
	Internet access
	Social media access
	Access to books
Social Environment	Support network with other parents

Regarding healthcare professionals, parents recognized that using simple language by nurses and therapists, combined with the extensive experience of these professionals, creates a trusting environment conducive to seeking knowledge. Participants reported feeling comfortable during follow-up consultations in a familiar setting that allowed them to voice their concerns:

I feel comfortable during each consultation because it's clear that this is the right place for me to ask any questions (08).

Regarding healthcare services, parents interviewed mentioned receiving support during their baby's hospitalization through talks and conferences, which helped them address many of their initial doubts:

Uh, I had the opportunity to attend two talks because I went there every day to see the baby (08).

They also appreciated the provision of educational material:

They also gave me brochures and explained things to me (02).

Parents also acknowledged the creation of a WhatsApp group for parents as a valuable new communication tool to network and solve doubts not only through the guidance of professionals but also through sharing experiences with other parents:

If I have any doubts, I have posted them in the group (08).

On the other hand, the participants recognized that the parents' attitude, family support, motivation to access various sources of information, consulting the internet, considering expert opinions on social media, and seeking advice from family members were all facilitators that contributed to learning new topics and gaining confidence in their caregiving role.

Regarding social environments, parents reported that meeting other parents in similar situations, coinciding in consultations, and receiving ongoing feedback through WhatsApp groups helped them build support networks that enriched their experiences.

Barriers were related to four dimensions: healthcare professionals, healthcare services, and the caregiver. Regarding healthcare professionals, it was found that the technical language used by the doctor hinders understanding, increasing fears and anxieties among parents (See Table 2). Concerning healthcare services, having different providers for the same patient can create conflicting information and confusion:

The doctors at (name of one institution) told me this, but at (name of another institution), they told me something else, which confuses me (02).

Table 2. Barriers in the PMC Education Processes.

Category	Code
Healthcare Professionals	Clarity in Communication
	Language/Terms Used by the Doctor
Healthcare Services	Different Providers
	Difficulties in Accessibility and Timeliness
	Gap Due to Inadequate Communication Channel Management
	Limitations in Mobility
	Risk of Infection Due to the Pandemic
	Disruption of Follow-Up Due to the Pandemic
	High Patient Volume
	Structural and Organizational Deficits for Education
	Lack of Educational Structure
	Educational Disarticulation Between Settings
	Scheduling Issues in Synchronous Media
Caregiver	Emotional Burden
	Fatigue
	Health Literacy
	Limited Support Network
	Remote Location
	Economic Capacity
	Baby’s Health

Additionally, there were limitations in the accessibility and timeliness of services, resulting in extended wait times to address concerns:

When needed, you often must wait for a slot in the schedule or for the doctor to be available that day (03).

Due to the COVID-19 pandemic, there were interruptions in the OKMC follow-up program, as mobility was restricted, and some parents experienced quarantine and isolation periods:

Unfortunately, the pandemic prevented me from continuing the Kangaroo program as I should have (05).

Additional barriers related to healthcare services were high patient volume, structural and organizational deficits due to a lack of spaces and time for education; parents perceived that sometimes there were no opportunities for new learning:

There are many people, and I understand that, but there should be space to address questions (07).

Parents reported a lack of organization in the OKMC program education: professionals providing the education that changed, and there was no specific content assignment; their participation is coincidental. As a result, questions are only partially resolved or accumulate until the following opportunity:

What happened with those questions you did not get to resolve? Well, you have to keep them for the next time, which was in a month and a half (01).

They also reported a weakness in the continuity of the education provided during the hospitalization at the neonatal intensive care unit and the OKMC program:

After the child was discharged, what happened with that? We felt a gap because we stopped receiving information (01).

Physical exhaustion, health issues of the primary caregiver, the emotional burden resulting from premature birth, limited support networks to lighten the load, economic constraints, and remote location are barriers to participating in the educational program:

When you often do not have someone to care for the children, you must work wonders to attend places (03).

DISCUSSION

The experience of therapists and nurses created a sense of trust and credibility in parents, allowing them to take ownership of their baby's care, as reported by Osorio et al.[26] who found that parents see good communication with staff as a facilitator of the discharge preparation process and post-hospital follow-up phase. One aspect that contributed to the families' adaptation to life outside the hospital was the opportunity to call the unit staff in case of doubts, like findings by Osorio et al.[26] and Kinshella et al.[27]

The provision of educational material was identified as a facilitator for parental education. It was reported as a tangible support for the information received and facilitates its application and learning after the consultation, as noted by Kinshella.[27] who states that implementing written educational material and involving parents in the baby's care helps them regain control and assume their caregiving role.

Virtual platforms and the opening of new communication channels, such as WhatsApp groups, allow for the timely resolution of doubts. This aligns with D'Agostini et al.[28] who report that using mobile devices as a learning resource anywhere and anytime is an increasing trend for accessing information.

Having a support network reduces emotional burdens and facilitates the learning process. Villamizar et al.[29] mention that giving birth to a premature baby leads to various emotional stresses for mothers, who seek support from diverse sources to cope with their stress and concerns about the baby's health and their ability to manage the infant's care. There is a need for research on parents.

Parents identified using technical terms or language when communicating with doctors as a barrier, which made the information provided unclear or even generated more doubts and uncertainty. In this case, Tolosa,[30] explains that in an effective relationship between the treating physician and the caregiver of a pediatric patient, assertive communication must be established between the parties involved, as this affects the patient's clinical outcome and the parents' satisfaction with health services and care.

Tolosa30 also suggests that doctors believe their communication with caregivers is correct; however, local and international studies have shown that caregivers have unsatisfactory perceptions of their interactions with doctors. This is consistent with Lorie,[31] who found that while parents of premature infants were quite satisfied with their interactions with nursing staff, they expressed a distant relationship with their babies' doctors.

When their babies are discharged, parents notice a marked decrease in the intensity of the information they receive in the OKMC program and other services like the milk bank. The information now is limited to the minutes available in the doctor's office, which for parents is insufficient given the number of questions they have. This aspect highlights that, due to the high patient volume, there is an inadequate number of professionals to address the high information needs of parents, and this shortage of staff and related administrative issues have been reported by Yue,[18] as obstacles to family preparation.

As a result, not all parents leave the hospital with the same information from the OKMC program. Some parents leave with a clear understanding of basic baby care. In contrast, others are unfamiliar with concepts such as chronological age and corrected age, which are important for monitoring the development of premature infants. Chang,[32] considers ongoing education for staff and parents in an OKMC necessary, as it will provide a better link with prenatal care services. In addition to factors such as lack of time, space, and personnel, there are implications of transitioning to an outpatient setting, where parents must now independently manage access to health services. This involves "many confusing administrative tasks for parents," a statement that Yue,[33] and Chang,[32] make, which aligns with comments from some caregivers. They report that access to these healthcare spaces is delayed due to referrals to different providers for the same patient, the need for authorizations, and extensive administrative protocols, where they even must stand in long lines with the baby to complete these procedures.

The pandemic was another factor that caused interruptions in follow-up and further reduced the already limited educational spaces. This situation left parents with a feeling of abandonment or disinterest in the program due to the existing gap from inadequate management of communication channels, particularly the telephone, which parents identified as an ineffective channel. The absence of a mechanism to track families after discharge affects the babies and their family's follow-up and access to health services. According to Hamline et al.,[34] ensuring this follow-up promotes effective discharge and improves parent satisfaction.

As mentioned, there is no standard preparation for parents before discharge in the NICU in this hospital. Gehl et al.[35] argue that it is necessary and should be evaluated to ensure good preparation before the baby comes home.

About the caregiver, having a premature baby is an event that brings traumatic characteristics and whose consequences are reflected in the emotional burden on parents, leading to posttraumatic stress. Beck and Harrison,[36] in a mixed research synthesis of thirty studies, mentioned that the risk of posttraumatic stress in mothers ranges between 14 and 79%. According to O'Donovan and Nixon,[37] hospital discharge brings feelings of joy that somewhat alleviate the burdens but also awakens new fears in caregivers as they have to detach from the "secure network" provided by the hospital, leading to experiences of anxiety, depression, or mental health alterations that, have been identified as a consequence of experiencing posttraumatic stress.[23]

The physical exhaustion of parents is a factor mentioned by several interviewees, describing it as a situation that is more intense in the early months due to constant monitoring of the baby's alarm signs. Parents spare no effort and prioritize the baby's needs over their own, as evidenced by their accounts of extending wakefulness or reducing rest hours when feeding the baby in the early morning or checking that the baby is breathing while asleep. Similarly, Marthinsen et al.[38] assert that being a mother of a premature infant is associated with stress, anxiety, depression, and a risk of poor health-related quality of life.

The absence of complete well-being becomes a limitation for the parent learning to care for their baby. On one hand, physical exhaustion leads to decreased concentration and information retention. On the other hand, Tyng et al.[39] note that mental health disturbances, such as depression, can lead to magnification of negative information, minimization of positive information, and exaggeration of guilt for failures and mistakes. If a person experiences anxiety, they may have difficulty paying attention or become easily distracted, which in either scenario can significantly reduce learning efficiency.

Health literacy is an almost necessary ability to cope with vast information. Bröder et al.[40] classify this ability into passive (received from health providers) and active (sought by the individual in non-clinical contexts), which, in the case of parents, comes from friends, family, books, and the internet. The absence of this ability can be due to a lack of criteria to validate information and difficulty in identifying errors, biases, or inconsistencies.

The facilitators identified by this group of parent’s center on clear communication from nurses, support for learning processes through educational materials, and establishing support networks among parents. These factors create a conducive environment for parents and enhance their educational process.

Conversely, the barriers are associated with doctors' use of technical language, limited accessibility to health services, organizational infrastructure deficiencies, inadequate communication channels, and caregivers' high physical and emotional burdens. All these factors significantly impact and impede the educational processes for parents of premature infants during the follow-up phase of the Kangaroo Mother Care (KMC) program.

CONCLUSIONS

These findings emphasize the need for a more cohesive and structured approach to the KMC program's educational component. Enhancing communication strategies, addressing organizational deficiencies, and supporting caregivers' mental health can improve program effectiveness. The program can empower parents, improve caregiving practices, and ultimately enhance health outcomes for preterm infants by addressing these areas.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest.

AUTHOR CONTRIBUTIONS

JAQP participated in conceptualization and study design, data collection, thematic analysis, literature review, writing, and final approval of the manuscript.
AAPG participated in conceptualization and study design, data collection, thematic analysis, literature review, writing, and final approval of the manuscript.
JAYO participated in data collection, writing, and final approval of the manuscript.

DGVZ participated in data collection, writing, and final approval of the manuscript.
NLH participated in the study design, writing, and final approval of the manuscript.
CAOH participated in thematic analysis, writing, and final approval of the manuscript.

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