



## RESEARCH ARTICLE

Article URL: <https://ojs.poltekkes-malang.ac.id/index.php/HAJ/index>**Exploring Primiparous Mothers' Knowledge about Newborn Care: A Case Study**Eko Sari Wahyuni<sup>1(CA)</sup>, Putri Meilina Rahayu<sup>2</sup>, Lucia Retnowati<sup>3</sup><sup>1,2,3</sup> Department of Nursing, Poltekkes Kemenkes MalangCorrespondence author's email (CA): [ekosariwahyuni@poltekkes-malang.ac.id](mailto:ekosariwahyuni@poltekkes-malang.ac.id)

## ABSTRACT

Maternal knowledge of essential newborn care is a key determinant of neonatal health, particularly among primiparous mothers who often experience limited preparedness and confidence in early caregiving. Understanding how educational interventions influence maternal knowledge and caregiving practices is important for strengthening maternal and neonatal health education. This study aimed to explore primiparous mothers' knowledge of essential newborn care and to examine changes in knowledge and caregiving skills following an educational intervention. A qualitative descriptive case study design was used. Data were collected through in-depth interviews, questionnaires, and direct observations, and analyzed using thematic analysis to identify key themes before and after the intervention. Four themes emerged: knowledge and skills in newborn bathing, umbilical cord care, diaper changing, and awareness of exclusive breastfeeding. Before the intervention, limited knowledge and low confidence were observed across all themes. After the intervention, improvements were evident in knowledge and practical skills, particularly in umbilical cord care, diaper changing, and understanding of exclusive breastfeeding, while confidence in newborn bathing remained limited. Hands-on educational interventions can enhance primiparous mothers' knowledge and caregiving skills, while sustained guidance and family involvement strengthen maternal confidence during early postpartum caregiving period.

Keywords : Educational intervention; essential newborn care; maternal knowledge; primiparous mothers.

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## INTRODUCTION

Mothers' knowledge of newborn care reflects the extent to which they understand and are able to meet their babies' basic needs, maintain their health, and ensure their safety in the early stages of life (1). During the neonatal period (0–28 days), babies undergo important adaptations from the intrauterine to the extrauterine environment, requiring special physical, emotional, and psychological attention. Maternal knowledge plays an important role in supporting this process because it is directly related to the health, well-being, and formation of the bond between mother and baby from an early age (2,3).

Newborn care includes actions taken immediately after delivery, both by health workers and mothers, such as maintaining hygiene, exclusive breastfeeding, and monitoring the baby's condition (4).

Adequate understanding of essential newborn care practices at home, including umbilical cord hygiene, safe bathing, and early recognition of neonatal danger signs, plays a critical role in preventing complications and supporting optimal infant growth and development. At the global level, the World Health Organization and UNICEF emphasize that appropriate home-based newborn care significantly contributes to the reduction of neonatal morbidity and mortality worldwide (5,6). At the national level, Indonesia's maternal and child health policies highlight the importance of maternal involvement in essential newborn care as a key strategy to improve neonatal health outcomes (7). At the regional level, evidence from East Java indicates that proper implementation of basic newborn care at home is associated with lower rates of neonatal infection and early health complications (8). A lack of knowledge and skills in caring for babies can increase the risk of health problems, including infection, hypothermia, and delayed growth and development (9).

In Indonesia, the infant mortality rate remains a significant public health issue. Data shows that approximately 79% of infant deaths occur within the first seven days of life, largely due to mothers' lack of knowledge about newborn care and delays in recognising signs of distress (10). Although global neonatal mortality rates have declined by 44% since 2000, nearly half (47%) of deaths among children under five still occur during the neonatal period, highlighting the importance of improving the quality of newborn care, both in health facilities and at the family level (11).

Several studies show that education level, access to information, and social support are the main factors that influence mothers' knowledge of infant care. Many primiparous mothers, especially in rural areas, still rely on traditional practices without scientific basis and have not received adequate education on newborn care (12,13). Low knowledge and preparedness for parenthood can increase the risk of infant morbidity and mortality (1). Therefore, an in-depth exploration of primiparous mothers' knowledge regarding newborn care is essential to inform the development of effective educational interventions aimed at improving maternal and neonatal health outcomes at the community level.

### METHODS

This study used a qualitative approach with a descriptive case study method that aimed to explore the knowledge of primiparous mothers about newborn care as a form of preparation for parenthood. The study was conducted in the working area of the Sumberpucung Community Health Centre, Malang Regency, on 7–13 April 2025. The research subject consisted of one primiparous mother who met the inclusion criteria, namely willing to participate, having a minimum education of junior high school or equivalent, and being in good health. Data were collected through in-depth interviews, direct observation, questionnaires, and documentation in the form of photographs and videos to reinforce the findings. Interviews were conducted openly and in depth to obtain a comprehensive understanding of the mother's knowledge and experience in caring for newborns, including how to bathe babies, care for the umbilical cord, change nappies, and the importance of exclusive breastfeeding. Observations were

conducted directly during three visits to the participants' homes over the course of a week to observe actual infant care practices.

The research procedure began with an introduction, explanation of the research objectives, implementation of a time contract, provision of an informed consent form, and implementation of interviews and observations. Data analysis was conducted thematically by examining the results of interviews, questionnaires, and observations presented in a descriptive narrative form. To ensure data validity, triangulation methods and member checking were used, which involved reconfirming the results of the researcher's interpretation with the participants to ensure that the data obtained was accurate and credible. All research procedures were conducted in accordance with ethical research principles, including voluntary participation, protection of participants' confidentiality, and efforts to minimize potential discomfort during the research process. This study was conducted without formal ethical approval; however, it adhered to established principles of health research ethics.

### RESULT

The findings are presented based on the themes derived from the thematic analysis of in-depth interviews, supported by questionnaire results and observational data. To enhance clarity, each theme is described by contrasting conditions before and after the educational intervention.

#### **Theme 1: Knowledge and Skills in Newborn Bathing**

Before the educational intervention, the participant demonstrated very limited knowledge and skills related to newborn bathing. Interview findings revealed uncertainty and lack of confidence in handling the baby, with caregiving responsibilities largely delegated to family members. This was consistent with observational data from the first and second meetings, where the participant was unable to bathe the newborn independently.

*"I don't really know Miss, because I'm still new to being a parent... I have no idea how to bathe a baby"*

After the educational intervention, the participant showed improved understanding of the correct steps for newborn bathing. Although she still required supervision and expressed limited confidence in handling the baby independently, observational findings from the third meeting indicated increased familiarity with the procedure.

*"I understand how to bathe a baby after you explained and taught me, but I still don't feel confident enough to do it myself"*

#### **Theme 2: Understanding and Practice of Umbilical Cord Care**

Prior to education, the participant had minimal knowledge regarding proper umbilical cord care and relied on her mother-in-law for this task. Questionnaire results indicated that only one out of five

questions related to umbilical cord care was answered correctly, reflecting limited understanding of infection prevention and appropriate care practices.

*“I don't know, Miss. Usually, my mother-in-law cleans my child's umbilical cord. All I know is that it is wrapped in gauze, Miss”*

Observational findings during the first and second meetings confirmed the participant's inability to perform umbilical cord care independently. Following the educational intervention, interview and observation data showed a clear improvement. The participant demonstrated correct knowledge and was able to perform umbilical cord care independently using sterile dry gauze and without inappropriate manipulation.

*“I can now do it myself, which is to cover the umbilical cord with dry sterile gauze and not pull on it once the umbilical cord has dried”*

### **Theme 3: Knowledge and Ability in Diaper Changing**

Before education, the participant's understanding of diaper changing was limited to replacing diapers when they were visibly soiled, without attention to hygiene techniques that prevent infection. This was supported by observational findings on the first day, which showed incorrect diaper-changing practices.

*“When the nappy is full, I change it for a new one... to be honest, I don't know, Miss”*

After the intervention, the participant demonstrated appropriate diaper-changing techniques, including correct cleaning direction to prevent infection. Observational data from the second and third meetings indicated that the participant was able to perform diaper changing independently and correctly.

*“Clean the baby's bottom from front to back to keep faeces away from the genital area”*

### **Theme 4: Awareness of the Importance of Exclusive Breastfeeding**

Before the educational sessions, the participant had a superficial understanding of exclusive breastfeeding and was unable to explain its specific benefits for newborn health.

*“All I know is that breast milk is better than formula milk”*

After education, the participant demonstrated improved awareness of the benefits of exclusive breastfeeding for both the infant and the mother, particularly in relation to immunity and infection prevention. This improvement was consistently observed during the final interview and confirmed through observational evaluation.

*“Exclusive breastfeeding is important because it boosts the baby's immune system and protects against infections such as diarrhoea”*

Observational data collected over one week across three meetings showed a progressive improvement in the participant's knowledge and caregiving abilities. Initially, the participant was unable to perform most newborn care activities independently. By the final meeting, she demonstrated adequate

skills in umbilical cord care and diaper changing, improved understanding of exclusive breastfeeding, and partial independence in newborn bathing, although confidence remained a limiting factor. Overall, the findings indicate a meaningful improvement in both knowledge and practical skills related to newborn care following the educational intervention.

### DISCUSSION

This single-case study explored changes in a primiparous mother's knowledge and skills related to essential newborn care following a structured educational intervention. The discussion is organized according to the themes identified through thematic analysis and explicitly contrasts conditions before and after the intervention to enhance methodological transparency.

#### **Knowledge of Essential Newborn Care Before the Educational Intervention**

Prior to the educational intervention, the participant demonstrated limited knowledge and practical skills across all domains of essential newborn care, including newborn bathing, umbilical cord care, diaper changing, and exclusive breastfeeding. These findings are consistent with previous studies indicating that primiparous mothers often experience uncertainty and inadequate preparedness due to limited experience, restricted access to reliable information, and reliance on family members for infant care (1,14).

The participant's dependence on her mother-in-law reflects the influence of social and cultural factors in shaping caregiving practices. According to Bourdieu's concept of social and cultural capital, individuals with limited educational resources and restricted access to health information may experience barriers in acquiring practical caregiving knowledge, thereby increasing dependence on others (15). This condition may place newborns at risk when caregiving practices are not aligned with evidence-based recommendations.

In addition, limited maternal knowledge prior to education may contribute to delayed recognition of neonatal danger signs, which is a critical factor in early neonatal morbidity and mortality. Several studies have shown that insufficient understanding of newborn care among first-time mothers is associated with delayed care-seeking behavior and suboptimal home-based practices during the neonatal period (16,17). This situation increases the vulnerability of newborns, particularly during the first week of life, when the risk of complications is highest.

Furthermore, the lack of confidence observed in the participant before the intervention highlights the psychological dimension of maternal readiness. Primiparous mothers often experience anxiety and self-doubt when caring for their newborns, which may further limit their engagement in caregiving activities and reinforce reliance on other family members (1). Without adequate guidance and reassurance from health professionals, this condition may hinder the development of maternal autonomy and delay the acquisition of essential caregiving skills necessary for optimal newborn health outcomes.

### **Changes in Knowledge and Skills After the Educational Intervention**

Following the educational intervention, a marked improvement was observed in the participant's understanding and ability to perform essential newborn care practices. The most notable improvements were found in umbilical cord care and diaper changing, where the participant demonstrated the ability to perform these tasks independently and correctly. These findings align with evidence that structured, hands-on education significantly enhances maternal competence and confidence in newborn care (18,19). Although knowledge regarding newborn bathing improved, the participant continued to express limited confidence in handling the infant independently. This suggests that while knowledge acquisition can occur rapidly, the development of self-efficacy may require prolonged practice and sustained support. Similar findings have been reported in studies showing that repeated guidance and family involvement are essential to strengthen maternal confidence among first-time mothers (1).

Increased awareness of the importance of exclusive breastfeeding after education highlights the effectiveness of targeted counseling in correcting misconceptions. Adequate knowledge of exclusive breastfeeding has been consistently associated with improved infant immunity, reduced infection risk, and better developmental outcomes (6,18).

The observed improvement in practical skills suggests that experiential learning and direct demonstration play a critical role in enhancing maternal capacity for newborn care. Educational approaches that combine verbal explanation with hands-on practice allow mothers to translate theoretical knowledge into actionable skills, thereby facilitating skill retention and practical application in daily caregiving. This finding supports previous research indicating that participatory education methods are more effective than passive information delivery in improving maternal caregiving behaviors (18).

However, the persistence of limited confidence in newborn bathing underscores the importance of continuous support beyond initial educational sessions. Confidence-building in primiparous mothers may be influenced not only by knowledge and skill acquisition but also by emotional reassurance, positive feedback, and repeated opportunities for supervised practice. Studies have shown that follow-up education and family-supported caregiving environments are essential in reinforcing maternal self-efficacy and promoting sustained behavioral change in newborn care practices (20).

### **Implications for Maternal Health Education**

The findings demonstrate that short-term, structured educational interventions delivered through repeated sessions can substantially improve primiparous mothers' knowledge and caregiving skills. This supports previous research indicating that maternal education is a critical strategy in preventing neonatal morbidity and promoting healthy early-life practices (21). Health education programs at the primary care level, particularly those conducted through community health centers, should emphasize practical demonstrations and direct observation to reinforce learning outcomes.

Incorporating family members into educational sessions may further enhance support and facilitate sustainable behavior change.

### Transferability of Findings

Given the single-case design, the findings are not intended for statistical generalization. However, transferability may be considered in contexts with similar characteristics, such as primiparous mothers, limited prior caregiving experience, and reliance on family support within primary healthcare settings. The intervention model used in this study is low-cost, feasible, and adaptable, making it potentially applicable in other community-based maternal health programs with comparable conditions. Clear documentation of the participant's context and the intervention process allows readers and practitioners to assess the relevance of these findings for their own settings, thereby supporting transferability as a qualitative quality criterion.

## CONCLUSION

This single-case study contributes to the scientific literature by providing qualitative evidence on how educational interventions in essential newborn care influence the learning process, meaning-making, and caregiving readiness of primiparous mothers. Using a thematic analysis approach, the findings demonstrate that hands-on educational strategies not only enhance technical understanding but also play an important role in shaping maternal confidence and autonomy during the early postpartum period. The primary contribution of this study lies in its detailed exploration of the mechanisms underlying changes in maternal knowledge and skills following educational intervention, which are often insufficiently captured in quantitative research. The findings highlight that improvements in knowledge do not necessarily translate immediately into full self-confidence, underscoring the importance of sustained support and family involvement in maternal health education programs.

Although based on a single-case design, this study offers context-specific insights that are relevant for the development of educational interventions in primary healthcare settings. These findings may inform the design of more responsive and supportive maternal education programs and encourage further qualitative research to strengthen the evidence base for newborn care education among primiparous mothers.

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