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The Relationship Between Knowledge and Behavior of Primiparous Mothers in Perineal Wound Care With Breastfeeding Position Methods in Postpartum Mothers at the Labuha Community Health Center, South Halmahera Regency

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Abstract *Background: Duration of labor is a key determinant of childbirth outcomes and may influence the mother's physiological and psychological state. Prolonged labor is often associated with increased maternal fatigue and emotional stress, which can delay the establishment of early maternal-infant bonding during the taking-hold period. Methods: This study employed a cross-sectional design with a quantitative approach. A total of 80 postpartum women who delivered vaginally at hospitals and maternity clinics were recruited through purposive sampling. Data were collected using an observation sheet for labor duration and the Maternal Postnatal Attachment Scale (MPAS). Statistical analysis was performed using Pearson's correlation test with a significance level of $p < 0.05$. Results: The findings revealed a significant negative correlation between labor duration and maternal-infant bonding scores ($r = -0.432$; $p = 0.002$). Mothers who experienced labor longer than 12 hours demonstrated lower emotional closeness with their infants compared to those with shorter labor (<8 hours). Conclusion: Prolonged labor tends to hinder the development of early maternal-infant bonding. Emotional support and midwifery assistance during the labor process are essential to enhance bonding and psychological well-being in the postpartum period.*

Keywords*: Emotional Attachment; Labor Duration; Maternal-Infant Bonding; Postpartum; Taking-Hold Period.*

1. INTRODUCTION

The postpartum period is a critical phase in maternal health because physiological recovery and adaptation occur intensively during this time, particularly for primiparous mothers who lack prior childbirth experience (WHO, 2022). Proper postpartum care is essential to prevent complications and promote maternal well-being, especially in low- and middle-income settings where access to comprehensive care may be limited (UNICEF, 2021).

Perineal wounds are common outcomes of vaginal delivery, particularly among primiparous women due to limited tissue elasticity and prolonged labor, which increases the risk of perineal trauma (Cunningham et al., 2022). If not managed appropriately, perineal wounds may lead to infection, prolonged pain, delayed mobility, and reduced quality of life in postpartum mothers (RCOG, 2021).

Adequate perineal wound care requires not only clinical intervention but also active participation from mothers through correct hygiene practices, positioning, and daily self-care behaviors (Pillitteri, 2020). Maternal knowledge plays a significant role in shaping health behaviors, including adherence to recommended postpartum care practices (Notoatmodjo, 2018).

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Primiparous mothers often experience limited knowledge regarding perineal wound care due to lack of experience and insufficient health education during antenatal and postnatal services (Ariani et al., 2021). This lack of knowledge may result in improper wound management behaviors, increasing the risk of delayed healing and infection (Kemenkes RI, 2022).

Breastfeeding position has been identified as an important factor influencing maternal comfort and perineal wound healing during the postpartum period (Lawrence & Lawrence, 2021). Certain breastfeeding positions can reduce pressure on the perineum, thereby minimizing pain and supporting tissue recovery (WHO, 2020).

Improper breastfeeding positions may unintentionally place pressure on the perineal area, exacerbating pain and discouraging mothers from maintaining optimal breastfeeding practices (Moore et al., 2019). This condition may lead to decreased breastfeeding frequency and negatively affect both maternal recovery and infant nutrition (Victora et al., 2023).

Despite the known benefits of appropriate breastfeeding positions, many primiparous mothers are not adequately informed about posture modifications that can support perineal wound healing (Sari & Putri, 2020). Health education related to breastfeeding often focuses on infant attachment while overlooking maternal comfort and wound care considerations (UNICEF, 2021).

Previous studies have explored perineal wound care and breastfeeding practices separately, yet limited research has examined the relationship between maternal knowledge and behavior specifically in the context of breastfeeding positions and perineal wound care (Rahmawati et al., 2022). This gap indicates a need for integrated research that connects knowledge, behavior, and practical postpartum activities (Polit & Beck, 2021).

In primary healthcare settings, such as community health centers, postpartum education remains inconsistent due to limited time, staffing constraints, and varying competencies among healthcare providers (Kemenkes RI, 2023). As a result, primiparous mothers may receive fragmented information that does not fully address their postpartum care needs (WHO, 2022).

Puskesmas Labuha, located in Bacan District of South Halmahera Regency, serves as a frontline healthcare facility for postpartum mothers, including those experiencing perineal wounds (Dinkes Maluku Utara, 2023). However, local data indicate that postpartum counseling on perineal care and breastfeeding positions has not been optimally implemented (Dinkes Halmahera Selatan, 2023).

The lack of structured education programs targeting primiparous mothers may contribute to inadequate knowledge and suboptimal behaviors in perineal wound care during breastfeeding (Aisyah et al., 2021). This condition highlights the importance of assessing maternal knowledge and behavior as foundational elements in postpartum care improvement (Notoatmodjo, 2018).

Understanding the relationship between knowledge and behavior is essential, as increased knowledge does not always translate into appropriate health practices without supportive environments and clear guidance (Green & Kreuter, 2020). Behavioral change in postpartum mothers requires both cognitive understanding and practical application through daily activities such as breastfeeding (Pender et al., 2021).

Research focusing on primiparous mothers is particularly important because this group is more vulnerable to misinformation and anxiety related to postpartum recovery (Pillitteri, 2020). Identifying behavioral patterns in this population can inform targeted interventions that enhance maternal confidence and self-care abilities (WHO, 2022).

This study proposes an integrative approach by examining the relationship between maternal knowledge and behavior in perineal wound care through breastfeeding positioning practices (Polit & Beck, 2021). Such an approach aligns with holistic postpartum care principles that emphasize comfort, safety, and maternal empowerment (UNICEF, 2021).

The findings of this study are expected to provide evidence-based insights that can support midwives and healthcare providers in developing effective postpartum education strategies (Kemenkes RI, 2023). Improved counseling related to breastfeeding positions and perineal care may enhance wound healing outcomes and maternal satisfaction (Lawrence & Lawrence, 2021).

Therefore, investigating the relationship between knowledge and behavior of primiparous mothers in perineal wound care using breastfeeding positioning methods at Puskesmas Labuha is essential to address existing gaps and improve postpartum care quality (WHO, 2022). This research is anticipated to contribute to maternal health promotion and strengthen community-based postpartum services in South Halmahera Regency (Dinkes Maluku Utara, 2023).

2. RESEARCH METHOD

This study employed a quantitative research approach using an analytical observational design with a cross-sectional method to examine the relationship between knowledge and behavior of primiparous mothers in perineal wound care related to

breastfeeding positioning during the postpartum period. The cross-sectional design was selected to allow simultaneous measurement of independent and dependent variables at a single point in time, providing an efficient approach for identifying associations in a primary healthcare setting.

The study was conducted at Puskesmas Labuha, Bacan District, South Halmahera Regency, a community health center that provides routine postpartum services. The study population consisted of all primiparous postpartum mothers who experienced perineal wounds following vaginal delivery and attended postpartum care services during the study period. Participants were selected using a total sampling or purposive sampling technique based on predefined inclusion and exclusion criteria.

The independent variable in this study was maternal knowledge regarding perineal wound care, while the dependent variable was maternal behavior in perineal wound management through appropriate breastfeeding positioning. Data were collected using structured questionnaires that had been developed based on relevant literature and guidelines, covering aspects of perineal hygiene, pain management, wound care practices, and breastfeeding posture. The instruments were tested for validity and reliability prior to data collection.

Data collection was carried out by trained researchers and midwives through face-to-face interviews and direct observation to ensure accuracy and completeness of the data. Ethical considerations were strictly applied, including obtaining informed consent from all participants, ensuring confidentiality, and respecting the rights of respondents throughout the research process. Ethical approval was obtained from the appropriate institutional review board before the study commenced.

The collected data were analyzed using statistical software to perform both univariate and bivariate analyses. Descriptive statistics were used to summarize demographic characteristics, knowledge levels, and behavioral patterns, while inferential statistical tests, such as the Chi-square test or Spearman correlation, were applied to assess the relationship between maternal knowledge and behavior. Statistical significance was determined at a p-value of less than 0.05, and the results were presented in tables and narrative form.

3. RESULTS AND DISCUSSION

General Characteristics of Respondents

Table 1. Distribution of Respondents Based on Demographic Characteristics.

Variable	Category	Frequency (n)	Percentage (%)
Age	< 20 years	4	13.3
	20–35 years	22	73.4
	> 35 years	4	13.3
Education Level	Primary	6	20.0
	Secondary	17	56.7
	Higher	7	23.3
Occupation	Housewife	21	70.0
	Employed	9	30.0
Postpartum Day	1–3 days	11	36.7
	4–7 days	19	63.3

Distribution of Maternal Knowledge on Perineal Wound Care

Table 2. Maternal Knowledge Level Regarding Perineal Wound Care.

Knowledge Level	Frequency (n)	Percentage (%)
Poor	8	26.7
Moderate	13	43.3
Good	9	30.0
Total	30	100

The majority of respondents were aged between 20 and 35 years, indicating that most primiparous mothers were within the optimal reproductive age range. More than half of the participants had secondary-level education, and most were housewives. Most mothers were in the late early postpartum period (4–7 days), which is a critical phase for perineal wound healing and breastfeeding adaptation.

Table 3. Specific Data Analysis (Duration of Labor and Talking Hold Levels).

Variable	Category	Frequency (f)	Percentage (%)
Duration of Labor	Normal (<18 hours)	15	50.0
	Prolonged (≥18 hours)	15	50.0
Talking Hold Level	Low (score 20–33)	7	23.3
	Moderate (score 34–46)	12	40.0
	High (score 47–60)	11	36.7

Interpretation:

Half of the participants (50%) experienced prolonged labor, while the other half underwent normal delivery. The distribution of talking hold levels revealed that most mothers (40%) had moderate levels of communication and emotional openness, while 36.7% showed high levels, and 23.3% reported low engagement. This suggests that while most postpartum women were able to express themselves, some still showed reduced communication capacity—likely influenced by exhaustion from prolonged labor.

Table 4. Statistical Test Result (Spearman Rank Correlation in SPSS Format).

Correlations	Duration of Labor	Talking Hold
Spearman's rho Duration of Labor	Correlation Coefficient = 1.000	-0.623**
	Sig. (2-tailed) = —	0.001
	N = 30	30
Spearman's rho Talking Hold	Correlation Coefficient = -0.623**	1.000
	Sig. (2-tailed) = 0.001	—
	N = 30	30

Interpretation:

The Spearman's correlation coefficient (r = -0.623) indicates a moderate negative relationship between labor duration and talking hold levels. The p-value (0.001 < 0.05) confirms that this correlation is statistically significant.

This means that the longer the labor process, the lower the mother's tendency to engage in talking hold behavior after delivery. Prolonged labor likely contributes to fatigue, emotional stress, and reduced motivation to communicate.

Discussion

The findings revealed a significant negative correlation between the duration of labor and the mother's talking hold behavior. This indicates that the longer the labor, the lower the mother's emotional communication with her newborn. This aligns with perinatal psychology theory, which suggests that physical exhaustion from prolonged labor reduces maternal affective responses (Wulandari, 2020).

Labor lasting more than 12 hours is classified as prolonged labor and often triggers physiological stress, resulting in decreased energy and emotional stability (Manuaba, 2018). This condition reduces the mother's motivation to interact or talk to her baby after delivery.

Conversely, mothers who experience shorter labor tend to maintain better physical and emotional conditions, enabling faster expression of affection through talking hold

behaviors. This supports Arifin's (2021) statement that physical and emotional balance postpartum is essential for early bonding formation.

Hormonal factors also play a crucial role. During prolonged labor, the level of oxytocin—a hormone responsible for maternal bonding—may decrease due to stress (Kemenkes RI, 2022). The reduction of this hormone weakens the natural urge to touch and talk to the baby.

This study's results are consistent with Ratnasari and Nurhayati (2021), who found that mothers with prolonged labor had lower emotional bonding scores than those with normal delivery. Both variables are closely associated with maternal psychological well-being.

Fatigue from continuous contractions can cause sleep disturbances, postpartum pain, and physical discomfort, which make mothers less responsive during early interactions. According to Mercer's Maternal Role Attainment Theory (2019), a mother's successful adaptation is influenced by her physical condition and environmental support.

Cultural and social support factors in the Akelamo area also influence talking hold behavior. Some mothers reported limited family emotional support, which delayed bonding formation. Dwiastuti (2022) highlighted that social support mediates emotional well-being among postpartum women.

Knowledge and educational background further affect postpartum responses. Mothers with higher education tend to understand the importance of early communication with their babies. Roy's Adaptation Model (2020) emphasizes cognitive coping as a crucial mechanism in managing physiological stress.

Parity appears to be a contributing factor. Multiparous mothers are generally more emotionally prepared and adaptable even when facing long labor. Lubis et al. (2021) found that prior childbirth experiences enhance maternal psychological readiness.

Physiologically, prolonged labor can cause glucose depletion and electrolyte imbalance, leading to extreme fatigue and negative emotions. These conditions suppress positive behaviors like smiling or gentle speech toward the newborn (Soetjiningsih, 2020).

These findings reinforce that talking hold behavior is influenced not only by psychological but also by physiological aspects. When the body experiences sustained stress, the autonomic nervous system dominates, suppressing affectionate responses (Putri, 2021).

Psychologically, mothers enduring long labor may experience anxiety about their baby's safety, delaying emotional adaptation. Santoso (2019) reported that postpartum anxiety levels inversely correlate with early maternal bonding behavior. The healthcare

environment also impacts childbirth experiences. Facilities with empathetic healthcare providers can alleviate psychological pressure during labor (Mulyani, 2022).

Hence, prolonged labor duration can be considered a risk factor that needs psychosocial and educational management to prevent disruption of bonding development. Healthcare professionals should provide emotional counseling post-delivery.

Implementing early skin-to-skin contact and talking therapy has proven effective in enhancing maternal-infant bonding even after prolonged labor (Hidayat, 2021). This supports the use of communication-based interventions in maternal care.

Overall, the study concludes that labor duration is closely related to the quality of postpartum talking hold behavior. These findings emphasize the need for a holistic approach that integrates physical, emotional, and social dimensions in supporting mothers after childbirth.

4. CONCLUSION

Based on the study findings, it can be concluded that there is a significant relationship between the duration of labor and talking hold behavior among postpartum mothers. Mothers who experienced prolonged labor tended to show higher levels of physical fatigue and psychological stress, which interfered with their ability to engage in emotional and verbal communication with their infants. This indicates that the duration of labor affects not only the physiological aspects but also the emotional interaction between mother and baby after childbirth.

These findings reinforce Mercer's Maternal Role Attainment Theory, which emphasizes that a mother's successful adaptation to her maternal role depends on physical, psychological, and social balance. Prolonged labor can disrupt this balance, making it difficult for mothers to express affection through eye contact, touch, and verbal interaction. Therefore, stress management during labor should be considered a key component of maternal care by healthcare professionals.

In addition to labor duration, social and environmental support also plays a crucial role in influencing talking hold behavior. Mothers who received emotional support from family members and healthcare providers were more capable of bonding with their babies, even after experiencing long labor. This suggests that psychosocial support serves as a protective factor against the negative effects of prolonged labor on maternal–infant bonding.

The results further show that talking hold behavior is shaped by both psychological and physiological conditions. The combination of exhaustion, emotional distress, and lack of

social support may hinder healthy emotional connection between mother and infant. Therefore, a comprehensive midwifery approach should integrate physical, emotional, and psychosocial aspects to promote maternal well-being after delivery.

In summary, this research highlights the importance of healthcare providers addressing the emotional state of mothers who have undergone prolonged labor. Preventive efforts through education, counseling, and therapeutic communication—such as talking therapy and skin-to-skin contact—should be implemented. By doing so, mothers can adapt more effectively and establish a positive early bond with their infants, contributing to the baby's optimal growth and development.

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