



## **DETERMINANT FACTORS OF MATERNAL READINESS IN CARING FOR POST-NICU NEONATES: A SCOPING REVIEW**

**Moh. Ikhzan Mahendra<sup>1\*</sup>, Zubaidah Zubaidah<sup>2</sup>, Megah Andriany<sup>2</sup>**

<sup>1</sup>Master of Nursing Program, Department of Nursing, Faculty of Medicine, Universitas Diponegoro, Jl. Prof. Soedarto, Tembalang, Semarang, Central Java 50275, Indonesia

<sup>2</sup>Department of Nursing, Faculty of Medicine, Universitas Diponegoro, Jl. Prof. Soedarto, Tembalang, Semarang, Central Java 50275, Indonesia

\*[mohikhzan18@gmail.com](mailto:mohikhzan18@gmail.com)

### **ABSTRACT**

Suboptimal maternal readiness to care for post-NICU neonates may increase the risk of readmission, with an incidence of 8.15 cases per 1,000 live births. Previous studies have extensively discussed predictors of discharge readiness among mothers with normal deliveries and healthy infants. However, reviews related to maternal readiness to care for post-NICU infants remain limited. This review aimed to identify the determinants of maternal readiness to care for post-NICU neonates based on the literature. The method used was a scoping review approach comprising five stages, based on the framework of Arksey and O'Malley. Articles were searched through PubMed, Scopus, EBSCO, and ProQuest databases using the keywords "maternal readiness" OR "mother readiness" OR "maternal preparedness" OR "maternal role attainment" OR "parental readiness" AND "neonate" OR "newborn" OR "infant" OR "ill neonate" OR "ill newborn" OR "neonatal illness" OR "neonatal care" AND "determinant" OR "factor" OR "predictor" OR "influencing factor" OR "associated factor" AND "caregiving" OR "maternal care" OR "neonatal nursing" OR "mother care", using the PICO framework and PRISMA. A total of 155 articles were identified, and after screening, 70 met the criterion of publication within the last 10 years. Of these, 62 articles were excluded because they were irrelevant, did not use a quantitative methodology, or were not in the context of NICU care. Therefore, 8 articles published between 2017 and 2026 met the inclusion criteria and were analyzed. The scoping review identified five themes related to the determinants of maternal readiness to care for post-NICU neonates: psychological factors, sociodemographic factors, social and professional support, empowerment interventions, and educational interventions. The review concluded that maternal psychological factors, such as anxiety, stress, mental health, and self-efficacy, were the most prominent aspects because they were most consistently associated with maternal readiness during the transition of care from hospital to home.

**Keywords:** factors; maternal readiness; newborns; post-NICU

### **How to cite (in APA style)**

Mahendra, M. I., Zubaidah, Z., & Andriany, M. (2026). Determinant Factors of Maternal Readiness in Caring for Post-Nicu Neonates: A Scoping Review. *Indonesian Journal of Global Health Research*, 8(5), 407–416. <https://doi.org/10.37287/ijghr.v8i5.2072>.

## **INTRODUCTION**

Infant mortality is a serious health issue. According to the World Health Organization (WHO) in 2022, around 2.3 million newborns died within the first 28 days of life, equivalent to 6,500 deaths per day, accounting for 47% of all deaths among children under the age of five (World Health Organization (WHO), 2024). The Central Java Provincial Health Office reported in 2023 that the Neonatal Mortality Rate (NMR) stood at 5.8 per 1,000 live births in 2022, rising to 5.9 per 1,000 live births in 2023. The main causes were dominated by low birth weight and prematurity (38.44%), asphyxia (24.12%), congenital anomalies (16.30%), infections (5.28%), and other factors (15.56%). (Dinas Kesehatan Provinsi Jawa Tengah, 2024; Jafari et al., 2025). These findings suggest that the rise in morbidity and mortality among newborns may be due to mothers' inadequate preparedness to provide care (Alam et al., 2024; Kebede et al., 2020).

Ongoing complications following discharge are reflected in neonatal readmission rates (Jafari et al., 2025). Infants treated in the NICU who are discharged to their mothers with suboptimal readiness

are at higher risk of readmission, with an incidence rate of 8.15 cases per 1,000 live births (Beard et al., 2025). Mandal (2025) shows that 5,175 neonates (19.6%) required care in the NICU; the readmission rate was recorded at 5.9% of total NICU admissions, with premature babies (31.5%) and high-risk neonates (33.8%) constituting the largest groups experiencing readmission, with a median age at readmission of 17 days. This phenomenon underscores that the success of neonatal care depends not only on care within healthcare facilities, but also on the mother's readiness to provide follow-up care at home.

Maternal readiness refers to the physical, psychological, social, and spiritual state that enables a mother to fulfill her maternal role to the fullest; this readiness encompasses a mother's ability to care for, nurture, and respond appropriately to the needs of her newborn baby (Arniti, 2023). In the context of post-NICU neonates, maternal readiness becomes more complex because babies discharged from the NICU often require special care. Mothers are not only expected to be able to provide basic care for their babies, such as breastfeeding, maintaining hygiene, bathing the baby, and keeping the baby warm, but they also need to understand warning signs, abnormal breathing patterns, signs of infection, nutritional adequacy, and health check-up schedules. Mercer explains that maternal readiness also supports the adaptation to the maternal role, so that the transition from woman to mother can take place with confidence, resilience, and the ability to adapt to her new role (Husmillo, 2013). The prevalence of mothers' lack of readiness to care for their newborns remains a significant issue in maternal health. Consequently, a mother's readiness is not only related to her technical ability to care for her baby, but also reflects her emotional readiness, self-confidence, and ability to make decisions when faced with changes in her baby's condition. The prevalence of mothers' lack of readiness to care for their newborns remains a significant issue in maternal health.

The interplay between internal and external factors influences a mother's readiness to care for her baby. Internal factors include the mother's physical and psychological condition, such as her health status (e.g. anemia), age, psychological stability, level of education, knowledge, and spirituality, all of which play a role in her ability to respond to her baby's needs and navigate the transition to motherhood (Attard, 2023; Ketema et al., 2020; Moya et al., 2022; Namutebi et al., 2022; Wall et al., 2024). A mother's physical condition, if she has not yet recovered after giving birth, can affect her ability to provide direct care for her baby. Furthermore, psychological factors such as anxiety, stress, fear, trauma, whilst the baby is being cared for in the NICU, and low self-confidence can hinder a mother in fulfilling her role. The experience of having a baby in the NICU often places emotional strain on the mother due to separation from the baby, uncertainty regarding the baby's health, and exposure to an intensive care environment filled with medical equipment.

External factors include social support and the environmental context, such as support from a husband and family, cultural norms, and health policies and services, which act as protective factors against a mother's lack of readiness to care for her baby (Petalina et al., 2023). Consequently, when these factors are not optimal, a mother's readiness tends to decline, as evidenced by a reduction in her competence, responsiveness, and confidence in caring for her baby (Helenilce, 2021; Pravia & Benny, 2020; Shah et al., 2025). This situation is even more complex for mothers whose babies are being treated in the Neonatal Intensive Care Unit (NICU), as the demanding nature of the care often exacerbates their lack of readiness for motherhood (Jeivanth et al., 2025). The prevalence of mothers being unprepared to care for their newborns remains a significant issue in maternal health. Rara (2024) shows that although 63.3% of mothers demonstrated high readiness, 36.7% remained in the moderate readiness category. This indicates that mothers' readiness to care for their newborns is not yet optimal.

Previous researchers have described the predictors of readiness for discharge in mothers who have had a normal delivery and healthy babies (Maldonado GM et al., 2017). There is still a limited body of research specifically examining mothers' readiness in the context of post-NICU infants or high-

risk neonates. Yet, caring for post-NICU neonates requires more complex skills, emotional readiness, and support than is the case with general postpartum care.

In light of this, this scoping review was conducted to identify and summarise the factors that determine mothers' readiness to care for post-NICU neonates, drawing on the latest scientific literature. Maternal readiness is a multidimensional concept, encompassing knowledge, skills, psychological and emotional readiness, and social support and healthcare services. However, scientific evidence on these factors remains scattered across studies employing diverse approaches, failing to provide a comprehensive picture. Consequently, this scoping review is expected to comprehensively map the determinants of maternal readiness and serve as a foundation for the development of interventions and further research.

## **METHOD**

### **Study Design**

This scoping review uses the methodological framework developed by Arksey and O'Malley, which consists of five main stages (Levac et al., 2010). The first stage involves clearly and objectively identifying the research questions to ensure the study remains focused. The second stage involves a systematic search for relevant articles across various databases. The third stage involves selecting literature that meets the inclusion criteria and extracting data from the selected articles. The fourth stage involves organizing, summarizing, and analyzing the data by grouping findings into relevant themes and categories. The final stage is the systematic and comprehensive reporting of the research results. The data analysis process is carried out by thoroughly reading each article, classifying them into subgroups based on characteristics and types of evidence, and organizing the findings into main themes that correspond to the research questions.

### **Search Strategy**

The literature search was conducted independently through PubMed, Scopus, EBSCO, and ProQuest databases. The search strategy used a combination of keywords with Boolean operators: "maternal readiness" OR "mother readiness" OR "maternal preparedness" OR "maternal role attainment" OR "parental readiness" AND "neonate" OR "newborn" OR "infant" OR "ill neonate" OR "ill newborn" OR "neonatal illness" OR "neonatal care" AND "determinant" OR "factor" OR "predictor" OR "influencing factor" OR "associated factor" AND "caregiving" OR "maternal care" OR "neonatal nursing" OR "mother care". The inclusion criteria were articles focusing on mothers and parents of ill infants admitted to the NICU, studies published within the last ten years from 2017 to 2026, quantitative study designs including cross-sectional, quasi-experimental, prospective cohort, randomized controlled trial, non-randomized controlled trial, and descriptive survey studies, full-text articles, open-access articles, and articles relevant to the research question.

### **Identification and Mapping of the Literature**

Literature selection was conducted using the PRISMA-ScR method. A total of 155 articles were identified, and after screening, 70 articles met the criteria of publication within the last ten years and the predetermined inclusion criteria. Of these 70 articles, 62 were excluded because they were irrelevant, did not use a quantitative methodology, or were not conducted in the context of NICU care. Therefore, the authors analyzed a total of 8 articles. Article analysis was conducted by developing an article analysis matrix consisting of the author's name, year of publication, article title, objective, study population, study design, and research findings.

## **RESULT**

### **Study Selection**

The literature was screened by excluding articles published before 2017, duplicate articles, articles that did not meet the predetermined inclusion criteria, and articles for which the full text was unavailable. A total of 155 articles were identified; following screening, 70 articles were found to

meet the criteria of being published within the last ten years, being international publications, and meeting the predefined inclusion criteria. Of these 70 articles, 62 were deemed irrelevant, did not fit the study design, or were not relevant to NICU care; thus, the total number of articles available for analysis was 8. The article search algorithm is shown in Figure 1. The article analysis matrix is outlined in Table 1.

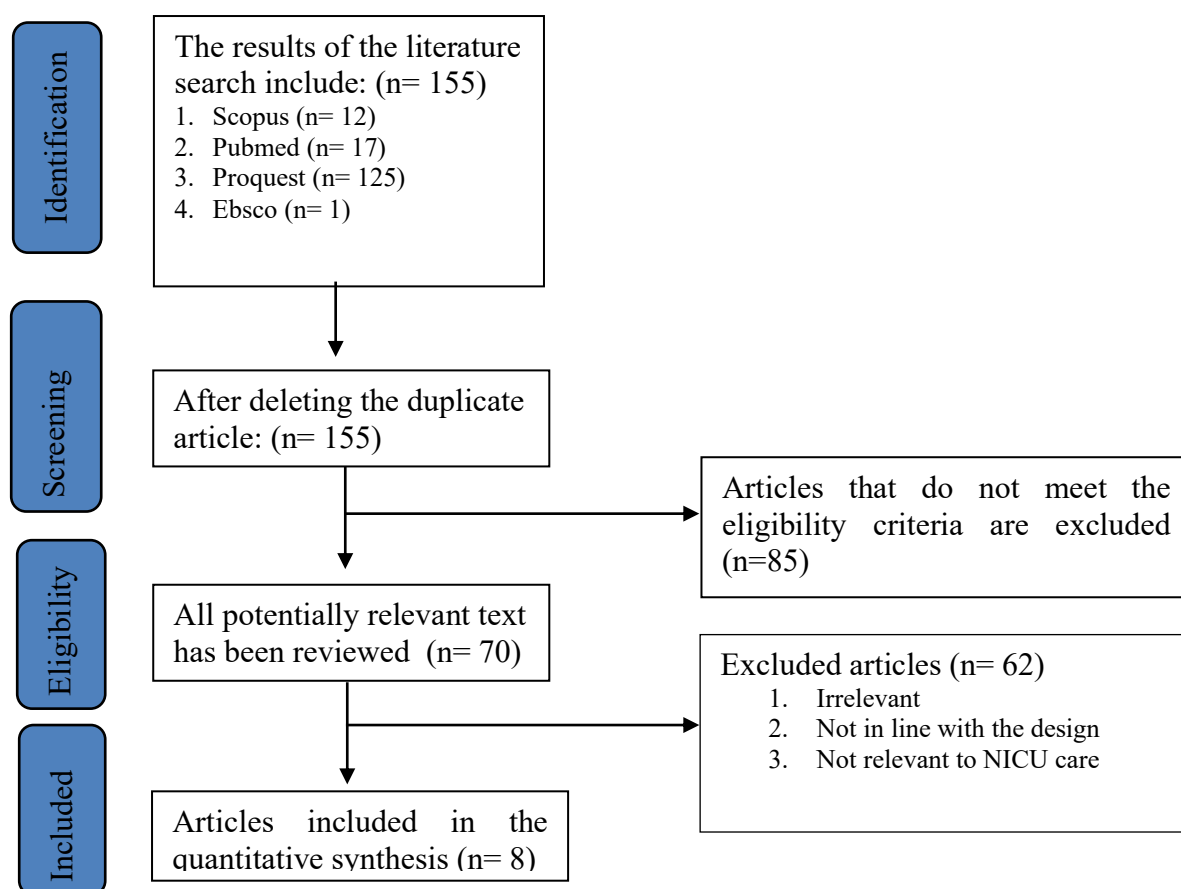


Figure 1. PRISMA-ScR Diagram of the Literature Search and Selection Process for a Literature Review

Table 1. Article Search Results

| Extraction Results     |                                                                                                                                                             |                                                                                                                                                          |                                                             |                                               |                                                                                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Author                 | Study Title                                                                                                                                                 | Objective                                                                                                                                                | Participants                                                | Study Design                                  | Results                                                                                                                                                       |
| Valipour et al., 2022  | Predictors of readiness for discharge in mothers of preterm infants: The role of stress, self-efficacy, and perceived social support                        | To determine the predictive roles of stress, self-efficacy, and perceived social support in readiness for discharge among mothers of premature infants.  | 120 mothers of premature infants were admitted to the NICU. | Cross-sectional, descriptive-analytical study | There was a significant relationship between stress, self-efficacy, perceived social support, and readiness for discharge among mothers of premature infants. |
| Mostafaez et al., 2026 | Impact of teach-back-based training on maternal discharge readiness and the readmission of preterm infants admitted to the NICU: a quasi-experimental study | To determine the effect of teach-back-based training on maternal discharge readiness and the readmission rate of premature infants admitted to the NICU. | 66 mothers of premature infants admitted to the NICU        | Quasi-experimental study                      | Teach-back-based training was associated with improved maternal discharge readiness and fewer outpatient visits.                                              |
| Zhang et al., 2025     | Assessing current status and exploring influencing factors and mechanisms of                                                                                | To assess the discharge readiness status of mothers of premature infants and explore the                                                                 | 258 mothers of premature infants were admitted to the       | Cross-sectional study                         | Factors that directly influenced readiness for discharge included gestational age,                                                                            |

| Extraction Results   |                                                                                                                                         |                                                                                                                                                                                                                               |                                                                                                              |                                  |                                                                                                                                                                                                                                                                                                    |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Author               | Study Title                                                                                                                             | Objective                                                                                                                                                                                                                     | Participants                                                                                                 | Study Design                     | Results                                                                                                                                                                                                                                                                                            |
|                      | mothers' discharge readiness for premature infants: A cross-sectional analysis using structural equation modeling                       | influencing factors and their mechanisms using structural equation modeling, to develop a more appropriate discharge preparation plan.                                                                                        | NICU.                                                                                                        |                                  | household income, online learning, bedside learning, anxiety, and the quality of discharge teaching. Anxiety had a negative effect, whereas the other factors had positive effects.                                                                                                                |
| McGowan et al., 2017 | Maternal mental health and neonatal intensive care unit discharge readiness in mothers of preterm infants                               | To evaluate the relationship between maternal mental health disorders (MHDs) and discharge readiness among mothers of infants born prematurely (<37 weeks of gestation).                                                      | 934 mothers of infants born prematurely (<37 weeks of gestation) admitted to the NICU.                       | Cohort prospective               | The findings showed that a history of maternal mental health disorders (MHDs) was a predictor of decreased maternal perceptions of both infant well-being and maternal well-being at the time of hospital discharge.                                                                               |
| Dai et al., 2023     | Application of family-centered empowerment model in primary caregivers of premature infants: A quasi-experimental study                 | To explore the effect of the Family-Centered Empowerment Model (FECM) in reducing anxiety, improving caregiving ability, and increasing discharge readiness among primary caregivers of premature infants.                    | 185 primary caregivers of premature infants admitted to the NICU.                                            | Quasi-experimental study         | After the intervention, the FECM group showed lower anxiety, better caregiving ability, and higher discharge readiness than the non-FECM group. The study concluded that FECM was effective in improving discharge readiness and caregiving ability among primary caregivers of premature infants. |
| Moradi et al., 2018  | The Effect of Empowerment Program on Maternal Discharge Preparation and Neonatal Length of Hospital Stay: A Randomized Controlled Trial | To determine the effect of an empowerment program on maternal discharge readiness and infants' length of hospital stay.                                                                                                       | 60 premature infants and their mothers were admitted to the NICU of a teaching hospital in Kermanshah, Iran. | Randomized controlled trial.     | The empowerment program intervention group had significantly higher maternal discharge readiness scores than the control group ( $p < 0.001$ ).                                                                                                                                                    |
| Zhu et al., 2026     | Psychological outcomes and discharge readiness of parents of preterm infants in China after family integrated care                      | To evaluate the effect of Family Integrated Care (FICare) on discharge readiness among parents of premature infants admitted to the NICU.                                                                                     | 84 families with premature infants with a gestational age of 28–34 weeks were admitted to the NICU.          | Non-randomized controlled study. | Family Integrated Care (FICare) significantly improved discharge readiness among both mothers and fathers at NICU discharge (all $p < 0.001$ ).                                                                                                                                                    |
| Yoon et al., 2019    | Influence of Partnerships with Nurses and Social Support on Readiness for Discharge among Mothers of Premature Infants                  | To investigate nurse partnerships, social support, and readiness for discharge among mothers of premature infants in the neonatal intensive care unit (NICU), and to examine factors associated with readiness for discharge. | 85 mothers of premature infants admitted to the NICU in Seoul, Korea.                                        | Descriptive survey study         | Nurse partnerships and caregiving experience were significantly associated with discharge readiness. Social support was correlated with discharge readiness but was not significant in the regression analysis.                                                                                    |

## **DISCUSSION**

### **Psychological Factors**

Psychological factors are one of the key determinants of readiness for discharge among mothers with sick newborns admitted to the NICU. These factors include stress, self-efficacy, anxiety, and the mother's mental health (McGowan EC et al., 2017; Valipour S et al., 2022; Zhang L et al., 2025). A mother's psychological state whilst her baby is receiving intensive care can affect her ability to understand information, make decisions, build self-confidence, and prepare herself to care for her baby after discharge. Care in the NICU is often a stressful experience, as the mother must cope with her baby's unstable condition, the unfamiliar intensive care environment, the use of medical equipment, and limited direct interaction with the baby. This situation can cause emotional stress that affects the mother's readiness to face the transition from hospital to home.

Stress is a psychological factor that hurts readiness for discharge among mothers with sick babies. The higher the level of stress experienced by the mother during her stay in the NICU, the lower her readiness to take her baby home and care for them at home. This stress is primarily related to the baby's condition and appearance, the atmosphere in the NICU, and changes in the mother's role during the period of hospitalization (Valipour S et al., 2022). Mothers may feel helpless because the hands-on caregiving role they would normally perform is restricted due to the baby's condition and medical procedures. Furthermore, uncertainty regarding the baby's prognosis can intensify a mother's fears and worries. If stress is not managed effectively, mothers may find it difficult to take in educational information, lack confidence in carrying out care, and feel unprepared when the baby is discharged.

Self-efficacy is positively correlated with readiness for discharge; consequently, mothers who are more confident in their ability to care for their babies tend to be better prepared for discharge (Valipour S et al., 2022). Self-efficacy is a key factor because readiness for discharge is determined not only by knowledge but also by the mother's belief that she is capable of applying care skills independently at home. Mothers with high self-efficacy tend to ask questions more actively, are more confident in participating in infant care practices whilst in the NICU, and are better equipped to cope with challenges after discharge. Conversely, mothers with low self-efficacy may feel uncertain, fear making mistakes, and rely entirely on healthcare staff or other family members.

Consequently, anxiety hurts readiness to return home (Zhang L et al., 2025). Anxiety may arise because mothers feel worried about their baby's condition, fear they will be unable to recognize warning signs, or feel they lack the necessary skills to provide care. Furthermore, mothers with a history of mental health issues tend to feel less emotionally prepared and less confident about caring for their baby after returning home (McGowan EC et al., 2017). Overall, these three studies confirm that psychological stress during care can be a significant barrier to the transition from hospital to home. Therefore, psychological support, counseling, enhancing self-efficacy, and the gradual involvement of the mother in the baby's care need to be integral parts of post-NICU neonatal discharge preparation programs.

### **Socio-demographic factors**

Socio-demographic and clinical factors are key determinants of a mother's readiness to be discharged from neonatal care; these include gestational age, household income, and family support, as reflected in the 'expected support' dimension (Zhang L et al., 2025). Socio-demographic factors indicate a family's capacity to meet the infant's care needs following discharge. In post-NICU neonates, the mother's readiness is influenced not only by the infant's clinical condition, but also by the family's ability to provide the resources, support, and a safe environment necessary to support care at home. Gestational age has a significant positive influence on the mother's readiness for discharge; thus, the lower the baby's gestational age, the greater the complexity of care the mother must face after returning home. Furthermore, household income has a positive influence on

readiness for discharge, as better economic conditions enable families to meet post-discharge care needs, access more adequate support resources, and reduce the mother's psychological stress (Zhang L et al., 2025). Families with sufficient income are more likely to have access to transport for health check-ups, nutritional needs, baby supplies, and specialist healthcare services. Conversely, financial constraints can place an additional burden on mothers, as they must prepare for their baby's care while also facing concerns about costs, access to services, and other household needs.

Family characteristics also contribute to readiness to go home, as evidenced by the high scores on the 'expected support' dimension; thus, intergenerational support and the involvement of other family members can boost the mother's confidence in caring for her newborn at home (Zhang L et al., 2025). Such support may take the form of practical help with caring for the baby, accompaniment to check-ups, emotional support, and assistance with decision-making. Thus, socio-demographic factors indicate that a mother's readiness to go home is determined not only by the baby's clinical condition but also by the family's social and economic capacity to support the transition from hospital to home care.

### **Social and Professional Support**

Social and professional support are key components in preparing mothers with sick newborns for discharge, as the transition from the NICU to home requires not only knowledge but also access to emotional, informational, and practical support. Mothers with post-NICU babies often face concerns regarding their ability to care for their babies independently. Therefore, support from family, the social environment, and healthcare professionals can serve as a source of reinforcement, helping mothers feel more prepared and confident. Perceived social support is positively associated with readiness for discharge and is a strong predictor, with family support being the most dominant dimension (Valipour S et al., 2022). Family support can help mothers reduce the emotional and physical burden of caring for their baby. The involvement of a husband, parents, parents-in-law, or other family members can provide a sense of security for the mother, as she does not feel she is facing the responsibility of care alone. Meanwhile, social support has a positive correlation with readiness to go home; it is therefore understandable that mothers who feel supported by their family and wider community tend to be better prepared to care for their baby at home (Yoon S et al., 2019).

In addition to social support, professional support through partnerships with nurses and caregiving experience also play a key role in improving readiness for discharge. Partnerships with nurses have a significant impact on readiness for discharge, suggesting that collaborative relationships, good communication, and the mother's involvement in care whilst in the NICU can strengthen her readiness before discharge (Yoon S et al., 2019). Nurses play a strategic role as they are the healthcare professionals who interact most frequently with mothers whilst their babies are in care. Through effective communication, nurses can help mothers understand their babies' conditions, provide education, teach care skills, and offer feedback on their practices. This confirms that mothers with prior childcare experience demonstrate greater readiness for discharge than those without such experience; thus, practical experience can be regarded as a vital asset in building self-confidence and adaptability. Consequently, this discussion underscores that discharge preparation interventions should emphasize strengthening the mother–nurse partnership whilst providing learning opportunities that closely mirror real-life childcare experiences.

### **Empowerment Interventions**

Empowerment interventions in post-NICU neonatal care demonstrate that the active involvement of parents through a family-centered care approach can improve readiness for discharge whilst strengthening the parenting role. The empowerment approach positions parents not merely as recipients of information, but as active participants in the baby's care process. Through this

approach, mothers and families are given the opportunity to learn, practice, discuss, and be directly involved in care, thereby gradually improving their parenting skills. Family Integrated Care (FICare) significantly improves the readiness of mothers and fathers for discharge, as parents are involved in structured training, hands-on care practice, lactation support, and peer support during their stay in the NICU (Zhu Y et al., 2026). These findings suggest that when parents are not merely recipients of information but become part of the care team, their skills in feeding, hygiene, care practices, and understanding of their baby's condition improve, enabling a smoother and more confident transition from hospital to home. Parental involvement in care can also strengthen the emotional bond with the baby, reduce anxiety, and enhance a sense of ownership of the parenting role.

Through the Family-Centered Empowerment Model (FECM), which has been proven effective in reducing anxiety among primary carers and improving their caregiving skills, and the readiness of post-NICU neonates for discharge. This program emphasizes problem identification, targeted education, group discussions, skills training, feedback, and post-discharge follow-up, thereby providing carers with a more personalized and practical learning experience than standard education (Dai K et al., 2023). Thus, these two studies confirm that empowerment interventions, whether in the form of FICare or FECM, work by strengthening parental involvement, enhancing self-efficacy, and building caregiving skills—all of which form a vital foundation for families with post-NICU neonates' readiness to return home.

### **Educational Intervention**

Educational interventions are a key component in improving the readiness of mothers and their post-NICU neonates for discharge, particularly when delivered in an interactive, structured manner and centered on the mother's needs. Effective education aims not only to convey information but also to ensure that mothers understand, can recall, and can apply that information in real-life situations. For post-NICU neonates, educational needs become more complex, as mothers need to understand their baby's condition, warning signs, feeding, hygiene, temperature monitoring, follow-up appointments, and actions to take should the baby's condition change. Teach-back-based training significantly improves mothers' readiness for discharge compared to routine education, as this method allows nurses to verify the mother's understanding through the repetition of information in her own words, the clarification of misconceptions, and the reinforcement of practical skills before discharge (Mostafanezhad M et al., 2026). These findings suggest that education that not only conveys information but also ensures that mothers understand and can apply it is more effective in preparing for the transition of care for sick newborns from the NICU to the home. The teach-back method also helps healthcare professionals identify which parts of the information the mothers have not yet understood, so that the education can be tailored to their needs.

Discharge education is the most significant educational factor influencing mothers' readiness for discharge, with bedside and online learning also contributing positively. Bedside learning helps mothers understand care skills first-hand whilst improving the quality of discharge education and reducing anxiety, whereas online learning provides a more flexible and continuous learning opportunity (Zhang L et al., 2025). This discussion therefore demonstrates that effective educational interventions for families of post-NICU neonates need to be designed in a multimodal manner, combining teach-back, high-quality discharge education, bedside learning, and online learning support, so that mothers' readiness for discharge can be optimally enhanced.

### **CONCLUSION**

The key determinant of a mother's readiness to care for a post-NICU neonate is her psychological state, which includes anxiety, stress, mental health, and self-efficacy, as these factors are most consistently associated with her level of readiness during the transition from hospital to home care. Furthermore, maternal readiness is also influenced by other themes, namely education and

empowerment, social support and partnership with healthcare professionals, and clinical and sociodemographic factors. Overall, these findings indicate that a mother's readiness to care for a post-NICU neonate is a multidimensional construct shaped by the interaction of internal and external factors, with psychological factors being the most prominent; consequently, this should be a primary focus in planning comprehensive, structured, and family-centered discharge preparation interventions.

## REFERENCES

- Alam, M. S., Jaya, W. H., & Iqbal, M. (2024). Relationship between maternal age and the incidence of preterm birth in hospitals. *An Idea Health Journal*, 4(1), 39. 428-Article Text-2412-1-10-20241024.pdf
- Angela R, Novayelinda R, & Indriati G. (2024). Enhancing readiness for discharge through effective teaching : a study on low birth weight mothers in NICU. *Viva Medika*, 17(03), 568–577. <https://doi.org/10.35960/vm.v17i3.1755>
- Arniti, N. I. (2023). Application of Ramona t. mercer's theory "achieving the mother's role - becoming a mother" in post-partum mothers. *Nursing Arts*, 17(2), 1978–6298. <https://jurnal.poltekkes-sorong.id/index.php/NA/article/view/10/9>
- Attard, J. (2023). Spirituality and spiritual care in the transition to motherhood. In *Perspectives on Midwifery and Parenthood* (pp. 181–192). [https://doi.org/10.1007/978-3-031-17285-4\\_14](https://doi.org/10.1007/978-3-031-17285-4_14)
- Beard, L. A., Ceballos, K. C., Staton, K. L., Conner, K. A., Math, C. M., Moore, M. K., Weikel, B. W., & Barry, J. S. (2025). Reducing NICU discharge care-related failures by improving discharge safety. *Pediatrics*, 156(2). <https://doi.org/10.1542/peds.2024-066305>
- Dai K, Fan X, Shi H, Xiong X, Ding L, Yu Y, Yu G, & S, W. (2023). Application of family-centered empowerment model in primary caregivers of premature infants: a quasi-experimental study. *Frontiers in Pediatrics*, 11(1137188), 1–9. <https://doi.org/10.3389/fped.2023.1137188>
- Dinas Kesehatan Provinsi Jawa Tengah. (2024). Buku profil kesehatan provinsi Jawa Tengah tahun 2023. Badan pusat statistik Provinsi Jawa Tengah. [https://dinkesjatengprov.go.id/v2018/dokumen/1Profil\\_Kesehatan\\_2023/files/downloads/Profil\\_Kesehatan\\_Jawa\\_Tengah\\_2023.pdf](https://dinkesjatengprov.go.id/v2018/dokumen/1Profil_Kesehatan_2023/files/downloads/Profil_Kesehatan_Jawa_Tengah_2023.pdf)
- Helenilce, E. (2021). Neonatal complications of prematurity. In *Perinatology: Evidence-Based Best Practices in Perinatal Medicine* (pp. 1133–1150). [https://doi.org/10.1007/978-3-030-83434-0\\_58](https://doi.org/10.1007/978-3-030-83434-0_58)
- Husmillo, M. (2013). Maternal role attainment theory. *International Journal of Childbirth Education*, 28, 46+. <https://link.gale.com/apps/doc/A334177953/HRCA?u=anon~110769fe&am>
- Jafari, N., Maleki, A., Ghaffari, A., & Talebi, M. (2025). Causes and associated factors of neonatal readmission at ayatollah mousavi hospital, zanzan (2020-2023). *Journal of Mazandaran University of Medical Sciences*, 35, 186–190.
- Jeivanth, S. B., Baskar, S., Fareed, M., Kumar, K. S., Mostafa, O. E., Bawazir, A., & AlQumaizi, K. I. (2025). Role of hematological parameters in the early detection of clinical cases for septicemia among neonates: a hospital-based study from chennai, india. *PLoS ONE*, 20(3 March), 1–17. <https://doi.org/10.1371/journal.pone.0318802>
- Kebede, A. A., Cherkos, E. A., & Taye, E. B. (2020). Mother's knowledge of neonatal danger signs and health-seeking practices and associated factors in debretabor, northwest Ethiopia: a community-based cross-sectional study. *Research and Reports in Neonatology*, Volume 10, 47–58. <https://doi.org/10.2147/rrn.s257768>
- Ketema, D. B., Leshargie, C. T., Kibret, G. D., Assemie, M. A., Petrucka, P., & Ayalew, A. (2020). Effects of maternal education on birth preparedness and complication readiness among ethiopian pregnant women: a systematic review and meta-analysis. *BMC Pregnancy and Childbirth*, 20(1). <https://doi.org/10.1186/s12884-020-2812-7>
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science*, 5(1), 1–9. <https://doi.org/10.1186/1748-5908-5-69>

- Maldonado GM, Connelly CM, & Bush RA. (2017). Predictors of readiness for hospital discharge after birth: building evidence for practice. *Worldviews on Evidence-Based Nursing*, 14(2), 118–127. <https://doi.org/10.1111/wvn.12208>
- Mandal D, M. A. (2025). Clinical profile of neonates getting readmitted to neonatal intensive care unit (NICU) after discharge from hospital. *Indian Journal of Pediatrics*, 92(11), 1188–1193. <https://doi.org/10.1007/s12098-024-05236-5>
- McGowan EC, Du N, Hawes K, Tucker R, O'Donnell M, & Vohr B. (2017). Maternal mental health and neonatal intensive care unit discharge readiness in mothers of preterm infants. *The Journal of Pediatrics*, 184, 68–74. <https://doi.org/10.1016/j.jpeds.2017.01.052>
- Mostafanezhad M, Valizadeh F, Karami K, & Mohammadi R. (2026). Impact of teach-back-based training on maternal discharge readiness and the readmission of preterm infants admitted to the NICU: a quasi-experimental study. *BMC Health Services Research*, 26(1), 156. <https://doi.org/https://doi.org/10.1186/s12913-025-13926-9>
- Moya, E., Phiri, N., Choko, A. T., Mwangi, M. N., & Phiri, K. S. (2022). Effect of postpartum anaemia on maternal health-related quality of life: a systematic review and meta-analysis. *BMC Public Health*, 22(1), 1–10. <https://doi.org/10.1186/s12889-022-12710-2>
- Namutebi, M., Kabahinda, D., Mbalinda, S. N., Nabunya, R., Nanfuka, D. G., Kabiri, L., Ngabirano, T. D., & Muwanguzi, P. A. (2022). Teenage first-time mothers' perceptions about their health care needs in the immediate and early postpartum period in uganda. *BMC Pregnancy and Childbirth*, 22(1), 1–10. <https://doi.org/10.1186/s12884-022-05062-7>
- Petralina, B., Amiruddin, R., Wahiduddin, Irwandy, Mallongi, A., Salmah, U., Suriah, & Martha, E. (2023). Analysis of the influence of internal and external factors on empowered pregnant women through the behavior of pregnant women in early detection of pregnancy complications. *Pharmacognosy Journal*, 15(6), 1029–1035. <https://doi.org/10.5530/pj.2023.15.189>
- Pravia, C. I., & Benny, M. (2020). Long-term consequences of prematurity. *Cleveland Clinic Journal of Medicine*, 87(12), 759–767. <https://doi.org/10.3949/ccjm.87a.19108>
- Shah, M., Sakr, M., & Balasundaram, P. (2025). Neonatal therapeutic hypothermia. *StatPearls*. <https://pubmed.ncbi.nlm.nih.gov/33620791/>
- Valipour S, Estebarsari F, Nasiri M, & Vasli P. (2022). Predictors of readiness for discharge in mothers of preterm infants: the role of stress, self-efficacy and perceived social support. *Asian Pacific Journal of Reproduction*, 11(November), 269–275. <https://doi.org/10.4103/2305-0500.356845>
- Wall, K. M., Penner, F., Dell, J., Lowell, A., Potenza, M. N., Mayes, L. C., & Rutherford, H. J. V. (2024). Maternal psychological risk and the neural correlates of infant face processing: a latent profile analysis. *Developmental Psychobiology*, 66(1). <https://doi.org/10.1002/dev.22445>
- World Health Organization (WHO). (2024). Newborn mortality rate. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/newborn-mortality>
- Yoon S, Park J, Lee H, & Min A. (2019). Influence of partnerships with nurses and social support on readiness for discharge among mothers of premature infants. *CHNR*, 25(4), 417–424. <https://www.e-chnr.org/journal/view.php?doi=10.4094/chnr.2019.25.4.417>
- Zhang L, He J, Zhou Y, Li J, Qiu J, & Li X. (2025). Assessing current status and exploring influencing factors and mechanisms of mothers' discharge readiness for premature infants: a cross-sectional analysis using structural equation modeling. *International Journal of Nursing Studies Advances*, 9(100372), 1–11. <https://doi.org/10.1016/j.ijnsa.2025.100372>
- Zhu Y, Jiang Y, Hong F, Song L, & Yang X. (2026). Psychological outcomes and discharge readiness of parents of preterm infants in China after family integrated care. *Frontiers in Pediatrics*, 14(1653759), 1–11. <https://doi.org/10.3389/fped.2026.1653759>