



Original Article

Adaptive Coping Strategies Positively Correlate with Maternal Knowledge among Low Birth Weight Infants

Eviana Sumarti Tambunan^{1*}, Paulus Malau²

¹Department of Nursing, Politeknik Kesehatan Kemenkes Jakarta III, West Java, Indonesia

²Clinical Nurse Consultant at Royal Prince Alfred Hospital, Missenden Road, Camperdown, New South Wales, Australia

*Corresponding author: eviana.tambunan@gmail.com

ARTICLE INFO

Article History:

Received: 2024-09-05

Published: 2025-03-21

Keywords:

coping strategies;
correlated; low birth
weight infant; mothers'
knowledge.

ABSTRACT

Uncertainty about newborn care can lead to stress and inadequate coping mechanisms in mothers of low-birth-weight (LBW) infants. This study aimed to assess mothers' knowledge of LBW infant care and its relationship with coping mechanisms. The study variables included maternal knowledge of LBW care and coping strategies. The study used a descriptive correlational design, with 90 mothers of LBW infants selected through purposive sampling. Data were collected using a questionnaire consisting of three sections: Coping Strategies Scale, the Maternal Knowledge Score, and demographic information. Statistical analysis was performed descriptively and inferentially using Pearson's correlation test. The results showed significant differences in LBW-care knowledge ($p=0.02$) and coping strategies ($p=0.003$). A significant correlation was found between maternal knowledge and coping strategies ($r=0.242$, $p<0.015$). This conclusion indicates that mothers with greater knowledge have better coping mechanisms. It is recommended that nurses provide proactive and engaging learning opportunities in health education programs on infant care to enhance the confidence and coping strategies of mothers with LBW infants..



©2025 by the authors. Submitted for possible open-access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>)

INTRODUCTION

A baby's birth is a stressful event, and the stress level increases when a low birth weight (LBW) or premature baby is born. ¹ Indonesia was ranked seventh out of ten nations with the highest infant mortality rate (around 25,800 newborns) as a result of low birth weight. ² The prevalence of LBW and premature babies, which are the biggest causes of neonatal death in Indonesia, is 6.1% and 11.1%, respectively. LBW babies (low birth weight <2500 gr) and premature babies (less than 37 weeks of gestation) are the most common causes of death or contribute to 63.5% of neonatal deaths based on Maternal Perinatal Death Notification (MPDN) data from 2019 to 2022. Based on its distribution, the prevalence of LBW ranges from 2.7-8%, whereas that of premature babies ranges between 3.1 - 36.9%.³

Technological advancements in intensive care have improved the survival rate of LBW infants. ⁴ Stressful situations for parents may arise from bright lights, loud noises, frequent monitoring, and medical treatments.⁵ Parenting appears to be affected long-term by barriers in parent-infant connections caused by stressful situations. ⁶ Parents need appropriate assistance

from their surroundings and others to create coping mechanisms that reduce stress and anxiety.⁷ Inguglia et al. (2022) identified several aspects that could enhance a constructive coping approach, including the provision of precise and unambiguous information, and parental involvement in the baby's care.⁸

Literature Review

The hospitalization and delivery of LBW infants and premature newborns can be distressing for parents. substantial progress has been made in the treatment of high-risk infants, supportive care for parents has improved significantly. Many families still view their time in the Neonatal Intensive Care Unit (NICU) as taxing.⁹ Long-term family repercussions of hospitalization and serious illnesses during the neonatal era may be detrimental. Parents of premature babies are considered "premature parents" because their link with the child is weakened and impaired by negative emotions, worry, and uncertainty about the baby's future.¹⁰

According to one study, parents may experience mental distress, including anxiety, sadness, sleep difficulties, and even post-traumatic syndrome, if their infant is admitted to the NICU.¹¹ Anxiety symptoms worsened initially but eventually lessened and became more stable according to parents who had been in distress since their babies were admitted to the NICU.¹² Mothers use coping mechanisms to manage their discomfort. Psychological discomfort is greater among mothers who do not have effective coping mechanisms.¹³ A coping method might be maladaptive, such as abusing alcohol or drugs, or adaptive, such as enlisting other' help. Problems and emotion-focused coping strategy models were first presented by Folkman and Lazarus.¹⁴ The model explains how people might release psychological pain through emotional expression and how they can lower perceived threats by framing their thoughts in a way that facilitates cognitive restructuring.

According to this paradigm, emotional expressiveness helps people cope with psychological distress and cognitive restructuring helps them frame situations such that they do not feel threatened. Nevertheless, there is a paucity of information regarding the care and adjustment of parents in the NICU and the findings are not entirely definitive. Numerous studies have demonstrated an association between stress and coping mechanisms, whereby inadequate coping leads to increased stress levels. By contrast, Patil (2014) found no evidence of a significant relationship between the degree of stress and coping mechanisms, as measured by the correlation coefficient.¹⁵

Most parents in the NICU view this knowledge gap as a crisis. According to one study, people may require knowledge and communication for various reasons including shock, anticipation, and uncertainty.¹⁶ Parents' information needs are frequently disregarded and unmet, and ignorance can result in stress.¹⁷ Parents needed information and communication regarding LBW infants and their care, which extended until discharge from the hospital, which might reduce the emotional impact of infants' hospitalization.¹⁸

It is the duty of nurses to stay current and to educate patients on various topics. Mothers' knowledge is increased by using a variety of educational techniques, including discussions, self-education, demonstrations, and lectures.¹ These self-education techniques are superior to others because they allow mothers to learn 'at their own speed and emphasize reading.¹⁹ This study aimed to determine the relationship between mothers' knowledge of the care of LBW infants and coping strategies in dealing with issues related to having LBW infants.

METHODS

Design

This study used a cross-sectional approach and was conducted between May and August 2022. This study examined the quality of mothers' coping strategies and their relationship to their knowledge. The study was conducted in the perinatology room of a private hospital and a government hospital in Central Jakarta. Both are type C hospitals with equal services for caring for LBW infants.

Sample

The study population comprised women whose newborns were admitted to the perinatology wards of both the institutions. Women with LBW infants admitted to both hospitals were included in this study. To determine the sample size for this study, a similar study conducted by Klebanov, Brooks-Gunn, and McCormick, 2001 was used as a reference.²⁰ With a standard deviation of 4.71, the mean score for mothers who employed active coping was 20.93. Considering the 10% score growth assumption, a sample size of 87 was required to obtain a power of 80.05. Based on these findings, this study required a minimum of 90 participant. To be eligible for inclusion, LBW infants must be free of congenital abnormalities from all the mothers. The exclusion criteria were having to be hospitalized, declining to participate in the study, or not being able to be seen throughout the data collection period. Purposive sampling was used in this study.

Instrument

The primary data were collected using a questionnaire. The research team developed two specific questionnaires for the study: maternal knowledge of LBW Infant Care and Coping Strategies. The first tool was the Questionnaire of Knowledge in Caring for LBW Infants, a structured questionnaire with closed-ended answers. There were a total of 20 questions. Each correct answer received a grade of one, whereas incorrect responses received a value of zero. A higher score suggested that the mothers had more information. The instrument's validity was tested using expert (pediatrician) judgment. Furthermore, we tested the questionnaire with 30 respondents who met the same criteria as the research. A scalogram analysis was performed and the results were reproducible.

A higher score indicated better knowledge of the mothers. The validity of the instrument was assessed using expert (pediatrician) judgment. Furthermore, we tested the questionnaire with 30 respondents who had criteria similar to those in the research that was conducted. The analysis was performed by scalogram analysis, with a reproducibility coefficient (Kr) of 0.89 and a scalability coefficient (Ks) of 0.78. Complying with the Guttman scale, the instrument was considered valid if $Kr > 0.90$ and $Ks > 60$. The test results suggested that the questionnaire was valid for employment purposes. The reliability of the questionnaire was analyzed using the Kr 20 (Kuder Richardson). The results revealed a value of 0.65, indicating that it was sufficiently reliable for used in this study.

Another questionnaire was based on the Ways of Coping Questionnaire created by Folkman and Lazarus,²¹ and the Transition Questionnaire developed by Kenner and Lott.²² The researchers modified 30 coping strategy questions from the Ways of Coping Questionnaire and eight stress-related questions from the Transition Questionnaire. The questions were selected after consulting experts in psychology and child-health. A test-retest approach was used to assess the reliability of the questionnaire. The Pearson product-moment assessment revealed 13 invalid questions (r result $< r$ table) that were eliminated.

Valid questions were tested using a reliable approach. Cronbach's alpha was assessed and the questionnaire had a value of 0.72, indicating that it was valid and reliable. The questionnaire had 25 items: five for maternal stress, seven for problem-oriented coping dimensions, and 13 for emotion-oriented dimensions. The scoring system used a five-point Likert scale, ranging from never (code 1) to always (code 5). The overall scores ranged from 25 to 125. Higher coping ratings for positive questions indicated that mothers were more capable of dealing with challenges, whereas negative questions showed the opposite. Higher stress levels indicate more severe stress.

Ethical considerations

This study was approved by the Ethics Commission of Politeknik Kesehatan Kemenkes Jakarta III (certificate number: PKJ3/061/VIII/2022). Respondents were given a summary of the research and a written explanation of the terms of their participation, including that participation was voluntary, withdrawal was possible at any time, there were no penalties for declining to participate, and the participants' privacy was protected. The respondents were informed that the research did not have any negative effects on their babies. Consent for participation was obtained by signing a consent form. To ensure anonymity, the names of the parents and the hospital were

removed from the data collection forms and replaced with numeric codes. Data were stored in a secure location. Only the lead investigator had access to data.

Data collection procedures

Data were collected through interviews, using standardized questionnaires that were prepared and evaluated. The co-researchers interviewed mothers of low-birthweight infants who met the inclusion criteria and agreed to participate in the study. Before collecting the data, the researcher introduced herself, explained the purpose of the study to the participants, and asked them to review and sign an informed consent form when they agreed to participate. After the interview, participants were given a small gift as a sign of gratitude.

Data Analysis

The data were analyzed using SPSS software. Data normality tests were conducted for data distribution, and descriptive and Pearson's correlation coefficient tests were applied.

RESULTS

Participant characteristics

Based on maternal demographic characteristics, approximately two out of five (43.3%) mothers who had LBW infants were aged between 27 and 35 years. Approximately 38.3% of mothers were between 36 and 45 years of age, which is a high-risk age for delivery. Approximately three out of five respondents (57.7%) had completed high school. Seventy percent of the mothers were unemployed, and 76.3 percent had a family income of less than 3.3 million rupiah (USD 244). This revenue fell below Jakarta's regional minimum wages.

According to participant characteristics, only 35% of the respondents who had received information on LBW care had infants hospitalized in the perinatology unit, whereas approximately 65% had never received such information. Almost all the healthcare professionals (90.48%) were nurses. In addition to maternal demographic factors, newborn features were examined. The mean and standard deviations of birth weight were 1968.7 ± 391.41 grams, gestational age were 33.90 ± 39.39 weeks, and length of hospitalization were 4.57 ± 3.70 days.

The relationship between mothers' knowledge about LBW infants care and their coping strategies

Table 1 shows, the means and standard deviations of mothers' knowledge scores and coping strategy scores were 8.75 ± 1.733 and 58.13 ± 6.24 , respectively.

Table 1. Relationship between Mother's Knowledge and Coping Strategy

Variables	Mean $\pm$ Standar Deviation (SD)	Correlation Coefficients (r)	Significance level (p)
Mother's knowledge score	8.75 ± 1.733	0.242	<0.015
Mother's coping strategies score	58.13 ± 6.24		

Based on the results from the Pearson's correlation coefficient calculations, there is a significant statistical association between mothers' knowledge and coping strategies ($p < 0.015$). The significant correlation coefficient of 0.242 indicates that a mother's good knowledge of LBW care is associated with better coping strategies, although the relationship between the two variables is weak.

Correlation between quantitative variables with mothers' knowledge and coping strategies

Mothers' knowledge of LBW care and infant characteristics were examined using Pearson's correlation coefficient, and the results indicated no statistically significant association ($p > 0.05$) between mothers' knowledge and maternal age, stress level, birth weight, or length of hospitalization. Furthermore, a large negative connection was shown by Pearson's correlation coefficients between mothers' coping methods and their stress levels, indicating that theirs

ability to use coping strategies was lowered by more frequent stressful events. There was also a moderate negative correlation between length of hospitalization and mothers' coping strategies. The longer the baby was hospitalized, the lower the mother's coping ability. Maternal age and birth weight were not significantly correlated with mothers' coping strategies [Table 2].

Table 2. Pearson's Correlation Coefficients between Quantitative Variables with Mother's Knowledge and Coping Strategy

Mother's Characteristic Variables	<i>r</i>	<i>p</i>
Mother's knowledge		
Maternal age	0.033	0.80
Level of stress	-0.136	0.30
Birth weight	-0.108	0.41
Length of hospitalization	-0.111	0.39
Mother's Coping Strategy		
Mother's knowledge		
Maternal age	0.062	0.64
Level of stress	-0.641	0.001*
Birth weight	-0.133	0.31
Length of hospitalization	-0.291	0.024*

**p* value < 0.05

The results of the evaluation of the relation between study population characteristics and mothers' knowledge of LBW infant care, using independent t tests, showed no statistically significant relationship between mothers' knowledge and family income. However, there was a statistically significant connection between the mothers' knowledge and receiving information regarding LBW baby care ($p < 0.03$) [Table 3].

Table 3. The Relationship between Characteristic of Participants with Knowledge and Coping Strategy using Independent T Test

Variables	Mean±SD	<i>t</i>	<i>p</i>
Mother's knowledge			
Family Income		-0.887	0.380
< US\$ 244	8.61±1.92		
≥ US\$ 244	9.00±1.13		
History of LBW Infants		0.334	0.739
Yes	8.91±1.92		
No	8.71±1.80		
Getting information about LBW infants care		0.07	0.02*
Ever	8.91±1.92		
Never	8.71±1.80		
Mother's coping strategy			
Family Income		1.325	0.191
< US\$ 244	56.85±6.43		
≥ US\$ 244	56.27±5.46		
History of LBW Infants		0.739	0.094
Yes	56.55±5.89		
No	56.53±6.38		
Getting information about LBW infants care		-3.683	0.03*
Ever	56.26±6.67		
Never	56.33±3.66		

**p* value < 0,05

This indicates that mothers who had learned about LBW infant care were more informed about LBW care than were other mothers. Furthermore, the results of an independent t- test showed no statistically significant association between mothers' coping strategies and family income or a history of LBW. However, there was a significant association between the mothers' coping

strategies and receiving information about LBW infant care ($p < 0.03$).

No significant differences were observed between the characteristics of the participants, such as education level, employment status, and coping strategy, using the F Test (ANOVA) [Table 4].

Table 4. The Relationship between Characteristic of Participants with Knowledge and Coping Strategy using Anova Test

Variables	Mean±SD	<i>t</i>	<i>p</i>
Mother's knowledge			
Famiy Income		0.414	0.743
Primary School	8.50±2.20		
Junior High School	8.46±1.51		
Senior High School	8.97±1.77		
College/University	8.40±1.52		
Mother's employment status		0.414	0.743
Employed	8.50±2.20		
Self employed	8.46±1.51		
Unemployed	8.97±1.77		
Mother's coping strategy			
Famiy Income		2.376	0.08
Primary School	50.40±0.89		
Junior High School	57.08±5.94		
Senior High School	57.65±6.39		
College/University	54.75±6.12		
Mother's employment status		0.363	0.704
Employed	58.00±5.70		
Self employed	57.75±9.30		
Unemployed	56.33±5.79		

DISCUSSION

Factors Affecting Mothers' Coping Strategies

This study showed that knowledge of LBW care scores was substantially related to coping strategies. The study also found that offering information about infants and hospital care improved the mothers' understanding and coping skills. The study also found that mothers' coping skills decreased when the stress score increased and the infant's hospitalization extended longer. In contrast, there was no correlation between the mothers' knowledge of LBW care and their demographics or the characteristics of their infants. The higher the stress score and the longer the infant's hospitalization period, the lower the mother's coping skills. Conversely, there was no variable from the mothers' demographics and infants' characteristics that correlated with their knowledge of LBW infant care.

Premature babies and those with birth defects frequently put parents in an imbalance, resulting in stress, as evidenced by the findings of this study, in which parents' stress scores were inflated. Parents, particularly mothers, require both personal skills and support from their surroundings to develop coping strategies to reduce stress and anxiety.¹² The most commonly used coping approach may offer insights into how parents can deal with this problem. In a critical situations, a family may be unable to use all available resources due to a lack of trust, solidarity, and communication among family members.²³ Families with LBW infants responded uniquely and individually to a questionnaire. Common reactions include anxiety, guilt, fear, hatred, and rage.

One study found that parents' feelings of stress initially increased but then decreased and became steadier over time. However, the mother needed to learn how to adapt to the situation as soon as possible. In such cases, the intervention should focus on assisting the mother in recognizing and implementing appropriate coping techniques.²⁴ The family must be involved in coping development to promote the mother's confidence in caring for her child.²⁵ Constructive

coping may help prepare the mother for her role in the family. A previous study reported a positive correlation between parental and family roles, with both roles gradually improving over time.²⁶

The study findings also indicated a correlation between infants in the hospital and mothers' coping strategies. Stress levels are aggravated when infants are hospitalized.¹⁵ Based on the study results, the longer the infant's hospitalization period, the lower was the mother's coping skills. A lengthy hospital stay may generate medical or psychosocial complications, including higher family expenses for hospital care and the risk of infection. The longer an infant is admitted to the intensive care unit, the higher the parents' stress level.²⁷ The Creating Opportunities for Parent Empowerment (COPE) Program, developed by Melnyk et al. (2006) reported that involving families from early hospitalization may shorten the length of stay of LBW infants' stay. The group of infants provided with the COPE program had a shorter length of stay in the NICU than those who were not provided with the program. This indicates that a shorter infant's length of stay promotes a mother's adaptation and role enactment as a parent.²⁸

Acquiring knowledge on care of the LBW infant and improvement of mothers' coping strategies

The results of this study showed that nurses in the perinatology unit might improve their coping skills and stress levels by educating them on the care of LBW infants. Mothers would like to obtain clear, fair, and comprehensive information to properly understand the circumstances surrounding their newborns. Mothers' knowledge may be increased by constant and consistent information sharing regarding the baby's condition and treatment. This could make the mother an active caregiver, particularly regarding the infant's health, treatment, and adjustment to the new baby.²⁶

Participants who received information about the baby's treatment had a higher average score for knowledge and coping than those who were not provided with information. The results showed that stress was minimized when nurses were willing to assist and explain the baby's condition and treatment. In addition to prognosis, providing instruction on LBW infants care will improve mothers' coping skills and motivate them to participate in early care. This may help reduce the feelings of loss of control and confidence in caring for children. ²⁹ Based on the study results, the provision of information about LBW infant care by nurses in the intensive care unit was significantly correlated with improved knowledge. Mothers' knowledge is a part of the adaptation process and coping. ¹⁶

Obtaining information about the baby and its treatment would promote the mothers' knowledge and coping skills. This study also demonstrated similar results, in that mothers' coping improved as their knowledge improved. ³⁰ This finding corresponds with a study conducted by Melnyk et al, who implemented the COPE program for parents whose babies were admitted to the NICU. Parents in the COPE program group were provided with information and behavioral activities regarding the appearance and behavioral characteristics of premature infants and the best parenting method. The program, which had been implemented from the infants' admission up to their discharge, revealed that parents' coping improved along with their knowledge of the babies' condition, both during hospitalization and after discharge.²⁸

Parents realized that coping was easier to develop at the hospital when they needed to know the baby's development and care methods. ³⁰ Feelings of shock and uncertainty regarding an infant's condition were described as reasons for parents' need for information and communication ³¹. The need for information originates from the need for control over a situation, which promotes an active search for information. Developing mothers' coping techniques and autonomous infant care expertise are critical for baby growth. Mothers should be confident and capable of providing care, particularly when the infant is discharged.

The study results indicated that better knowledge of LBW care possessed by mothers would improve their coping strategies. The factors that promoted mothers' knowledge were the provision of information on LBW infants' conditions and education on LBW infants' care.

Nurse Implications

Seeking information to gain knowledge is one of parents' coping strategies for feeling

involved in the care of their baby.³¹ One Study reported that parents stated their need for support from health professionals, especially related to the information required to provide care for their newborns, and nurses were preferred as the best source of information to notify them about critical changes in a baby's condition. However, several studies have shown that parents' needs for information and knowledge is not satisfied throughout their newborns' hospitalization.³² Mothers who are unable to obtain appropriate information about their babies' condition may experience delayed bonding process with their children. Nurses are in a unique position to assist these mothers because they care not only for the infant but also for parents in distress. The ultimate source of mother satisfaction is the support provided by the healthcare team.

Another study revealed that all mothers considered all items of nursing care for their babies significant. However, there was a substantial difference in the average score for recognizing the need for nursing support versus acquiring nurse support. This finding indicates that parents require specific help from nurses, notably in terms of supportive communication and education rather than emotional support. Appropriate nursing care may help increase parent-infant interactions when an LBW infant is hospitalized.

Limitations

The study dimensions were limited to mothers' knowledge and coping strategies after their infants were admitted to the perinatology unit. The results could not be generalized because of the small sample size and research area. Purposive sampling does not yield a representative sample. Randomization was not possible because of the small number of participants.

CONCLUSION

There was a significant correlation between the knowledge acquired by mothers during infants' hospitalization in the perinatology ward and their coping strategies. The association between knowledge and coping strategies revealed a positive pattern, implying that the mothers' coping skills improved as their knowledge increased. Nurses play a critical role in improving mothers' coping abilities through education. Nurses should provide mothers and family members with the opportunity to learn about caring for LBW infants in perinatology wards. Development of mothers' coping skills and independent infant care expertise is critical for their babies' growth. Women should be confident and competent in caring for their infants, particularly when they are discharged.

Acknowledgments

The authors would like to thank the Ministry of Health of the Republic of Indonesia through Politeknik Kesehatan Kemenkes Jakarta III, for funding this research.

Statement of conflict of interest

There is no conflict of interest among researchers in this study.

REFERENCES

1. Boykova M. Transition from hospital to home in parents of preterm infants. *J Perinat Neonatal Nurs.* 2016;30(4):327–48. Available from: <https://pubmed.ncbi.nlm.nih.gov/27776032/>
2. UNICEF. Low birthweight [Internet]. 2023. Available from: <https://data.unicef.org/topic/nutrition/low-birthweight/>
3. Kementerian Kesehatan RI. Survei Kesehatan Indonesia Tahun 2023 [Internet]. 2024. Available from: <https://www.badankebijakan.kemkes.go.id/laporan-tematik-ski/>
4. Gupta M, Pursley DM, Smith VC. Preparing for discharge from the neonatal intensive care unit. *Pediatrics.* 2019;143(6). <https://doi.org/10.1542/peds.2018-2915>
5. Yeh AM, Song AY, Vanderbilt DL, Gong C, Friedlich PS, Williams R, et al. The association of care transitions measure-15 score and outcomes after discharge from the NICU. *BMC*

6. Aagaard H, Uhrenfeldt L, Ludvigsen MS, Fegran L. Parents' experiences of transition when their infants are discharged from the Neonatal Intensive Care Unit: a systematic review protocol. *JBIC Database Syst Rev Implement Reports* [Internet]. 2015 Nov 13;13(10):1–7. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7780380/pdf/12887_2020_Article_2463.pdf
7. Tambunan E, Pratomo H, Hadi EN, Rustina Y. Mothers' Coping Strategies in Preparing for the Discharge of Low Birth Weight Infants from a Perinatology Ward. *Aust J Basic Appl Sci*. 2017;11(15):54–63. Available from: [https://www.ajbasweb.com/old/ajbas/2017/December-suppl1/54-63\(8\).pdf](https://www.ajbasweb.com/old/ajbas/2017/December-suppl1/54-63(8).pdf)
8. Inguglia C, Costa S, Inguglia S, Cuzzocrea F, Liga F. The role of parental control and coping strategies on adolescents' problem behaviors. *Curr Psychol*. 2022 Mar 1;41(3):1287–300. Available from: https://iris.unipa.it/bitstream/10447/420715/2/12144_2020_648_OnlinePDF.pdf
9. Gaffari M, Abdelghafar N, Sawanal A, Lutfi HM, Qubaisi MA AL, Rifai HAT, et al. Going Home Safely. A Family Centered Approach. *BMJ Paediatr Open* [Internet]. 2021;5(Suppl 1):A21–2. Available from: https://bmjpaedsopen.bmj.com/content/5/Suppl_1/A21.3
10. Worrall S, Silverio SA, Fallon VM. The Relationship between Prematurity and Maternal Mental Health during The First Postpartum Year. *J Neonatal Nurs* [Internet]. 2023;29:511–8. Available from: <https://www.sciencedirect.com/science/article/pii/S135518412200206X>
11. de Souza L, de Queiroz V, Andrade S, César E, de Melo V, Oliveira S. Anxiety and Depression in Mother of Newborns in Intensive Care Units. *Rev Gauch Enferm*. 2021;42:1–15.
12. Astuti ES, Nursalam N, Devy SR, Etika R. Knowledge, Family Support and Self-Reliance Capital when Caring for Low Birth Weight Babies. *J Ners*. 2019;14(1):10–5. Available from: <https://e-journal.unair.ac.id/JNERS/article/view/12734>
13. Lacceta G, Chiara M Di, Nardo MC de, Terrin G. Symptom of Post Traumatic Stress Disorder in Parents of Preterm Newborns: A systematic Review of Interventions and Prevention Strategies. *Front Psychiatr*. 2023;1–11. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC10032332/pdf/fpsy-14-998995.pdf>
14. Herman JL, Tetrick LE. Problem-focused versus emotion-focused coping strategies and repatriation adjustment. *Hum Resour Manage* [Internet]. 2009 Jan;48(1):69–88. Available from: <http://doi.wiley.com/10.1002/hrm.20267>
15. Patil S. Level of Stress and Coping Strategies Seen Among Parents of Neonates. *Int J Sci Res* [Internet]. 2014;3(4):579–85. Available from: <https://www.ijsr.net/archive/v3i4/MDIwMTMxNTEy.pdf>
16. Williams KG, Patel KT, Stausmire JM, Bridges C, Mathis MW, Barkin JL. The neonatal intensive care unit: Environmental stressors and supports. *Int J Environ Res Public Health*. 2018;15(1). Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC5800159/pdf/ijerph-15-00060.pdf>
17. Tambunan E, Pratomo H, Hadi EN, Rustina Y. Mothers' Coping Strategies in Preparing for the Discharge of Low Birth Weight Infants from a Perinatology Ward. *Aust J Basic Appl Sci*. 2017;11(15):1–10. Available from: [https://www.ajbasweb.com/old/ajbas/2017/December-suppl1/54-63\(8\).pdf](https://www.ajbasweb.com/old/ajbas/2017/December-suppl1/54-63(8).pdf)
18. Baysoy N, Kavuncuoglu S, Ramoglu MG, Aldemir EY, Payasli M. Follow Up of Low Birth Weight Preterm Infants After Hospital Discharge Incidence and Reasons for Rehospitalization. *J Trop Pediatr* [Internet]. 2021;00:1–11. Available from: <https://pubmed.ncbi.nlm.nih.gov/34059915/>
19. Rincón Uribe FA, Godinho RC de S, Machado MAS, Oliveira KR da SG, Neira Espejo CA, de Sousa NCV, et al. Health knowledge, health behaviors and attitudes during pandemic emergencies: A systematic review. *PLoS One*. 2021;16(9):e0256731. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC8423234/pdf/pone.0256731.pdf>

20. Klebanov PK, Brooks-Gunn J, McCormick MC. Maternal coping strategies and emotional distress: Results of an early intervention program for low birth weight young children. *Dev Psychol.* 2001;37(5):654–67. Available from: <https://psycnet.apa.org/record/2001-11105-009>
21. Folkman S, Lazarus RS. *Manual for the Ways of Coping Questionnaire*. Research E. California: Consulting Psychologists Press; 1988.
22. Boykova M, Kenner C. Transition from hospital to home for parents of preterm infants. *J Perinat Neonatal Nurs.* 2012;26(1):81–7. Available from: <https://pubmed.ncbi.nlm.nih.gov/22293645/>
23. Hudson K. Coping Complexity Model: Coping Stressors, Coping Influencing Factors, and Coping Responses. *Psychology.* 2016;07(03):300–9. Available from: https://www.scirp.org/pdf/PSYCH_2016031615111106.pdf
24. Sih DA, Bimerew M, Modeste RRM. Coping strategies of mothers with preterm babies admitted in a public hospital in Cape Town. *Curationis.* 2019;1–8. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC6779964/pdf/CUR-42-1872.pdf>
25. Wacharasin C, Phaktoop M, Sananreangsak S. A family empowerment program for families having children with thalassemia, Thailand. *Nurs Heal Sci.* 2015 Sep 1;17(3):387–94. <https://onlinelibrary.wiley.com/doi/10.1111/nhs.12201>
26. Kapti RE, Arief YS, Triharini M, Saidah Q, Azizah N, Supriati L. Maternal Coping Strategies for Premature Infant: A Systematic Review. *Kesmas.* 2022;17(1):74–80. Available from: <https://scholarhub.ui.ac.id/cgi/viewcontent.cgi?article=1986&context=kesmas>
27. Malliarou M, Karadonta A, Mitroulas S, Paralikas T, Kotrotsiou S, Athanasios N, et al. Preterm Parents' Stress and Coping Strategies in a Neonatal Intensive Care Unit in a University Hospital of Central Greece. *Mater Sociomed.* 2021;33(4):244–9. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC8812370/pdf/MSM-33-244.pdf>
28. Melnyk BM, Feinstein NF, Alpert-Gillis L, Fairbanks E, Crean HF, Sinkin R a, et al. Reducing premature infants' length of stay and improving parents' mental health outcomes with the Creating Opportunities for Parent Empowerment (COPE) neonatal intensive care unit program: a randomized, controlled trial. *Pediatrics.* 2006;118(5):e1414–27. Available from: <https://publications.aap.org/pediatrics/article-abstract/118/5/e1414/69924/Reducing-Premature-Infants-Length-of-Stay-and?redirectedFrom=PDF>
29. Silveira RC, Valentini NC, O'Shea TM, Mendes EW, Froes G, Cauduro L, et al. Parent-Guided Developmental Intervention for Infants With Very Low Birth Weight: A Randomized Clinical Trial. *JAMA Netw open.* 2024;7(7):e2421896. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11255911/>
30. Utami R, Ugrasena IDG, Ernawati, Arief YS, Santy WH. Effectiveness of relevant interventions with readiness for discharge in transitional care of low birth weight infants: a systematic review. *Bali Med J.* 2023;12(2):1320–9. Available from: <https://balimedicaljournal.ejournals.ca/index.php/bmj/article/view/4314/2727>
31. Tambunan E, Pratomo H, Hadi EN, Rustina Y. Knowledge of low birth weight care as a source of coping strategies for mothers: Cross sectional study in perinatology WARD'S. *J Neonatal Nurs* [Internet]. 2020;(January):1–5. Available from: <https://doi.org/10.1016/j.jnn.2020.01.003>
32. Maleki M, Mardani A, Harding C, Basirinezhad MH, Vaismoradi M. Nurses' strategies to provide emotional and practical support to the mothers of preterm infants in the neonatal intensive care unit: A systematic review and meta-analysis. *Women's Heal.* 2022;18. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9234836/pdf/10.1177_17455057221104674.pdf