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Knowledge About Medical Equipment Attached to Their Children and Coping Strategies Among Mothers During Hospitalization in the NICU at Waled Regional General Hospital, Cirebon Regency

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ABSTRACT

Background & Objective: Transitional conditions and adaptation in neonatal and perinatal is a period that can cause physiological changes and even death. In this condition, the baby needs intensive care in a special room. BBL installed various medical devices during treatment at the NICU. The number of BBL treated at the NICU in January to December 2024 was 226 people and those who experienced deaths were 100 people. This has become a stressor and has changed coping especially for mothers as long as their children experience hospitalization. This study aims to determine the relationship between knowledge about medical devices installed on their children and coping strategies on mothers during hopitalization in Waled Hospital Cirebon District. **Method:** The type of research used is descriptive correlational with prospective approaches. The sampling technique used a total sample of 19 respondents during May to June 2025 at the Waled Hospital in Cirebon. The statistical test used is Spearmen Rank. **Result:** The results obtained r value of 0.686 and p value <∝ means that Ho is rejected, then there is a strong and positive relationship between knowledge of medical devices installed on their children and coping strategies on mothers during hopitalization in Waled Hospital Cirebon Regency (p value = 0.001, ∝ = 0.05 r = 0.686). **Conclusion:** Knowledge of medical equipment installed in their children can be given continuously to mothers through health education and provision of counseling so that maternal coping strategies become adaptive during hospitalization of their children.

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Introduction

The neonatal and perinatal periods are vital times of transition and adaptation in life. During this period, neonates undergo many changes throughout their bodies due to the adaptation of intrauterine physiology to extrauterine physiology. The changes that occur in the anatomy, physiology, and psychology of neonates can cause disorders and even death. By 2030, all countries are striving to reduce the neonatal mortality rate to at least 12 per 1,000 live births (LB) and the under-five mortality rate to 25 per 1,000 LB. In Indonesia's 2023-2028 strategic health development plan, it is stated that in the last 5 years, the Neonatal Mortality Rate (NMR) has remained the same at 19/1000 births, while the Post-Neonatal Mortality Rate (PNMR) has decreased from 15/1000 to 13/1000 live births, and the under-five mortality rate has also decreased from 44/1000 to 40/1000 live births. The causes of death in the perinatal group were intrauterine fetal death (IUFD) at 29.5% and low birth weight (LBW) at 11.2% (Indonesian Ministry of Health, 2023).

Many problems in newborns are related to biochemical and functional disorders or failures caused by prematurity, anatomical abnormalities, and poor conditions in the womb, during delivery, or after birth. Some of the high risks for these infants include LBW, neonatal asphyxia, syndromes, respiratory disorders, jaundice, umbilical cord bleeding, seizures, hypothermia, hyperthermia, hypoglycemia, and neonatal tetanus (Ayu, 2012).

Neonates with impaired life functions and life-threatening conditions must receive special care in the Neonatal Unit. In particular, infants with a birth weight below 1750 grams are at risk for hypothermia, apnea, hypoxemia, sepsis, feeding intolerance, and necrotizing enterocolitis. The smaller the infant, the higher the risk of these conditions (Maisel, 2014).

The NICU is an intensive care unit for premature infants or newborns up to 28 days old who require special treatment and care. These infants are high-risk infants. The causes of respiratory disorders in infants vary greatly, ranging from premature birth, lung infections, to amniotic fluid. These include Respiratory Distress Syndrome (RDS), infection and sepsis or severe infection. RDS in infants is caused by the baby's lungs not being fully developed, so that the organ does not produce enough active substances in the alveoli (surfactant), requiring temporary assistance in the form of a breathing machine. Infections can originate during pregnancy, during the delivery process, or after birth. Sepsis is caused by bacteria and results in serious complications in vital organs (kidneys, lungs, brain) and carries a risk of death (Halamek, 2012).

Care provided to high-risk infants in the NICU is divided into levels I (basic care), II (specialty care), III (specialty care), and IV (subspecialty care). This is based on the level of impairment of bodily functions and basic human needs. In level II, III, and IV care, infants are given special medical equipment such as respiratory aids and electrolyte fluids, cardiorespiratory monitoring devices, which are used to improve health status and life support (AAP, 2012).

Mothers' ignorance about the condition or care of their infants while they are in intensive care causes anxiety that can affect the coping of mothers and infants. Individual efforts to cope with anxious or stressful situations are referred to as coping mechanisms or coping strategies (Halamek, 2012). Lazarus and Folkman in Nurbaiti

(2014) add that effective coping is coping that helps a person tolerate and accept stressful situations and not worry about pressures that cannot be controlled.

The NICU at Waled Regional General Hospital is a referral hospital in East West Java with a capacity of 10 beds (incubators). The number of patients treated from January to December 2024 was 226. There has been an annual increase in the length of stay, ranging from 3 to 30 days. The mortality rate of patients treated in the NICU at Waled Regional General Hospital from January to December 2024 reached 100 patients. The patients who died included cases of low birth weight, prematurity, asphyxia, sepsis, and congenital abnormalities (Waled Regional General Hospital Medical Records, 2024).

To maintain the peace and comfort of babies being treated in the NICU at Waled Regional General Hospital, visits are only allowed during visiting hours, visitors must not speak loudly, and must leave the treatment room immediately when visiting hours are over. Visiting hours are from 11:00 AM to 12:00 PM and from 5:00 PM to 6:00 PM. Only the parents of babies being treated in the NICU at Waled Regional General Hospital are permitted to visit (NICU, Waled Regional General Hospital).

Coping mechanisms are processes whereby individuals attempt to deal with and control the stress caused by problems they are facing by making cognitive and behavioral changes in order to feel secure. Parents, especially mothers, will demonstrate coping mechanisms when problems arise with their babies. For example, they may start to feel guilty for giving birth to a baby with low birth weight. Then the guilt will develop into feelings of fear, anxiety, stress, and depression because in the end the baby will be treated in the NICU room where their attention will always be focused on the condition of their baby being treated in the NICU room. So that mothers will begin to learn about the care of their babies in the NICU and the rules of the NICU room (Wong, 2009).

The results of a study by Pratiwi (2014) entitled Coping Behaviors in Mothers with Children with Down Syndrome state that the coping behaviors used by mothers vary. Coping behaviors that may arise are adaptive and maladaptive. Mothers who have maladaptive coping behaviors can change to adaptive behaviors due to social support from family and friends. This support enables mothers to understand their child's Down syndrome condition and motivates them to be enthusiastic.

Another study by Prasa (2013) on stress and coping in parents with mentally retarded children found that the coping strategies of the research subjects had two sources: internal and external. The coping strategies used included problem-solving planning, positive assessment, distancing, self-control, seeking social support, and accepting responsibility.

Another study by Aini (2012) showed that the majority of respondents had adaptive coping mechanisms (85%), while 15% had maladaptive coping mechanisms. The suggestion in Aini's (2012) study is that nurses are expected to be able to help and support mothers with LBW babies who are being treated in the NICU to recognize and use adaptive coping mechanisms.

Based on several theories, journal reviews, and the above phenomena, the researcher was interested in conducting a study on the issue of mothers' knowledge related to coping strategies in mothers whose children are being treated in the intensive care unit (NICU).

Objective

The purpose of this study was to determine and analyze the relationship between mothers' knowledge levels and the coping strategies they used while caring for their babies in the Neonatal Intensive Care Unit (NICU) at Waled Regional General Hospital, as well as to describe how mothers' knowledge can affect their ability to cope with stress, anxiety, and adjust to the intensive care conditions of their babies.

Method

The type of research used in this study is descriptive correlational with a cross-sectional design. The variables in this study consist of two variables, namely independent variables, which are variables that influence or cause change, and dependent variables, which are variables that are influenced or result from change. The independent variables in this study are mothers' knowledge and coping mechanisms. The sampling technique used in this study was total sampling of 19 respondents during May to June 2025 at the NICU of Waled Regional General Hospital in Cirebon Regency.

Results

Mothers' knowledge about medical equipment attached to their children at Waled Regional General Hospital, Cirebon Regency

TABLE 1. Frequency distribution of respondents based on mothers' knowledge about medical equipment attached to their children at Waled Regional General Hospital, Cirebon Regency (n=19)

Independent Variables	Frequency	Percentage (%)
Maternal Knowledge		
Good	4	21,1
Fair	12	63,2
Poor	3	15,8
Total	19	100

Based on Table 1, the results show that 4 respondents (21.1%) had good knowledge, 12 respondents (63.2%) had sufficient knowledge, and 3 respondents (15.8%) had poor knowledge.

Mothers' coping strategies in the NICU at Waled Regional General Hospital, Cirebon

TABLE 2. Frequency Distribution of Respondents Based on Mothers' Coping Strategies in the Neonatal Intensive Care Unit (NICU) of Waled Regional General Hospital, Cirebon Regency (n=19)

Independent Variables	Frequency	Percentage (%)
Mothers' Coping Strategies		
Adaptive	10	52,6
Maladaptive	9	47,4
Total	19	100

Table 2 shows that 10 respondents (52.6%) had adaptive coping strategies and 9 respondents (47.4%) had maladaptive coping strategies.

Relationship between mothers' knowledge about medical equipment attached to their children and coping strategies in the NICU at Waled Regional General Hospital, Cirebon

TABLE 3. Relationship between mothers' knowledge about medical equipment attached to their children and coping strategies (n=19)

Variables	R	P Value
The relationship between mothers' knowledge and coping strategies	0,686	0,001

Based on Table 3, the p-value was 0.001 (at α = 0.05), meaning that Ho was rejected or Ha was accepted, indicating that there was a significant relationship between mothers' knowledge about the medical equipment attached to their children and their coping strategies in the Neonatal Intensive Care Unit (NICU) of Waled Regional General Hospital, Cirebon Regency. In addition, the correlation coefficient value of 0.686 indicates that the two variables have a strong and positive relationship. This means that the higher the mother's knowledge about the medical equipment attached to her child, the more adaptive the mother's coping strategy will be.

Discussion

The results of the analysis show that 31.6% of respondents had sufficient knowledge to use the same adaptive coping strategy. This is higher than the other strategies. The results of the statistical test using Spearman Rank yielded a p value = 0.001 (at α = 0.05), meaning that Ho was rejected or Ha was accepted, indicating that there was a significant relationship between mothers' knowledge about the health condition of their children undergoing intensive care and their coping strategies in the Neonatal Intensive Care Unit (NICU) of Waled Regional General Hospital, Cirebon Regency.

The relationship between the two variables exists because one of the factors that influence coping strategies is a person's knowledge. Notoadmodjo (2011) states that knowledge is the result of knowing and perceiving a particular object. Perception occurs through the five human senses, namely sight, touch, and taste.

The correlation coefficient value of 0.686 indicates that the two variables have a strong and positive relationship. This means that the higher the mother's knowledge about her child's health condition undergoing intensive care, the more adaptive the mother's coping strategy will be. The results of this study are in line with Pangastuti's (2010) study, which obtained results using the chi-square test $p \leq \alpha = 0.05$. The results of the study show that there is a relationship between knowledge and coping strategies in primiparous mothers in responding to pain before childbirth.

Apart from knowledge, other factors that influence the use of coping strategies include personal characteristics, available resources, and previous coping patterns (Christensen & Kenney, 2009).

This is similar to the results of Martha's (2012) study, which examined the relationship between stress levels and coping strategies in medical clinic interns, finding that there is a relationship between perceived stress and the coping strategies used. With a p-value of 0.001 (α = 0.05). This means that the higher the stress level, the lower the coping strategies among students. The results of the study found that medical students at the Faculty of Medicine, University of Riau, who experienced mild and moderate stress tended to use emotional-focused coping to deal with problems, enabling them to regulate their emotional responses to stressors and reduce stress levels. Meanwhile, those experiencing severe stress tend to use problem-focused coping in dealing with their problems by doubling their efforts and also seeking information or support from others.

Conclusion

Most respondents had sufficient knowledge, namely 12 respondents (63.2%). Most respondents had adaptive coping strategies, namely 10 respondents (52%). There is a relationship between mothers' knowledge about the medical equipment attached to their children undergoing intensive care and mothers' coping strategies in the NICU of Waled Cirebon Regional General Hospital, with a p-value of 0.001 (at α = 0.05).

Recommendations

For nurses: Nurses in the NICU of Waled Cirebon Regional General Hospital are expected to pay attention to the psychological aspects of mothers so that they can improve their coping strategies.

For hospitals: It is recommended to provide optimal health education to mothers and families whose children are receiving intensive care.

For education: This study found a relationship between mothers' knowledge and coping strategies, so nursing education needs to provide learning so that students will know and understand how to improve coping strategies in mothers or families whose children are receiving intensive care.

For respondents: Respondents are advised to increase their knowledge so that they can develop adaptive coping strategies.

For other researchers: Further research is recommended using the same variables with a larger number of respondents. In addition, the relationship between knowledge and the level of anxiety in mothers can be further investigated.

References

Aini, Faturrahma. 2012. Koping Ibu Post Partum Dengan Kelahiran Bayi BBLR di RSUP Haji Adam Malik Medan. Medan: Universitas Sumatra Utara.

Kesehatan B. Laporan Hasil Riset Kesehatan Dasar (Riskesdas) Indonesia Tahun 2013.

Magnawiyah, Mayang Setyo. 2014. Strategi Koping Orang Tua Pada Anak Yang Menderita Sindrom Down Di Sekolah Luar Biasa Negeri 1 Jakarta Lebak Bulus Jakarta. Skripsi (tidak diterbitkan). Universitas Islam Negeri (UIN) Syarif Hidayatullah)

Maisels MJ. Jaundice. Dalam: Avery GB. Flecher MA, Mac Donald MG. 2014. Penyunting. Neonatology & management of the newborn. Edisi ke 5. Baltimore: Lippincot William & Wilkins.

Mu'tadin, Z. 2002. Pengantar Pendidikan dan Ilmu Perilaku Kesehatan. Yogyakarta. Andi Offset

Murwani, Arita. 2007. Asuhan Keperawatan Keluarga Konsep dan Aplikasi Kasus. Jogjakarta: Mitra Cendikia Press.

Notoatmodjo S. 2012. Metodologi penelitian kesehatan. Jakarta: Rineka Cipta.

Pratiwi, M dan Juliani P. 2014. Perilaku Koping pada Ibu yang Memiliki Anak Down Syndrome. Surakarta: Fakultas Psikologi Universitas Muhammadiyah

Rahayu, Eni. 2010. Koping ibu terhadap bayi bblr (berat badan lahir rendah) yang menjalani perawatan intensif di ruang nicu (neonatal ntensive care unit). Skripsi (tidak dterbitkan) Universitas Diponegoro

Rini, Irma Detia. 2012. Gambaran Tingkat Pengetahuan Ibu Tentang Perkembangan Bicara Dan Bahasa Serta Stimulasinya Pada Anak Usia Dini Di Rw 09 Kelurahan Tugu Depok. Skripsi (tidak diterbitkan). Universitas Indonesia

Setiadi. (2008). Konsep Proses Keperawatan Keluarga(edisi 1). Yogyakarta: Penerbit Graha Ilmu.

Setyowati, Sri. dkk. 2008. Asuhan Keperawatan Keluarga, konsep dan aplikasi kasus;editor Handoko Riwidikdo. Jogjakarta: Mitra cendikia

Smeltzer, Suzanne C. dan Bare, Brenda G. 2002. Buku Ajar Keperawatan Medikal Bedah Brunner dan Suddarth (Ed.8, Vol. 1,2), Alih bahasa oleh Agung Waluyo...(dkk). EGC. Jakarta.

Taylor, S.E., Peplau, L.A., dan Sears, D.O. 2009. Psikologi Sosial. Edisi Keduabelas. Alih Bahasa: Tri Wibowo, B.S. Jakarta: Kencana Prenada Media Group

Wong, Donna L. 2009. Buku Ajar Keperawatan Pediatrik. Jakarta: EGC