

Stress and Coping Strategies among Mothers for Caring Premature Infant at Home

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ABSTRACT

Background: Mothers with premature babies have higher stress levels than mothers with full-term babies and experience barriers to becoming mothers, so mothers need to adjust coping strategies continuously. This research aims to correlate coping strategies and stress among mothers caring for their premature babies at home. **Methods:** The data collected from 188 mothers was analyzed using descriptive and inferential statistics (Spearman test). **Results:** Most respondents are in the moderate stress category (70.2%). The three coping strategies used by mothers, namely praying, getting closer to the baby, and accepting the situation, were mostly in the good category (94.7%, 76.6%, and 68.1%), while coping for seeking support was mostly in the moderate category (60.6%). There was a correlation between coping and maternal stress (coping with prayer: p -value 0.008, coping with attachment: p -value 0.000, coping with accepting situations: p -value 0.000, and coping with seeking information: p -value 0.000). The strongest correlation was the coping strategy with accepting the situation ($r = 0.561$), which means that the better the coping with accepting the situation, the less stress. This study shows a correlation between mothers coping strategies and the stress of caring for premature babies at home. **Conclusion:** Support by health workers is crucial in developing appropriate coping strategies for mothers to reduce maternal stress when caring for premature babies at home.

Keywords: Coping Strategies; Mother; Premature; Stress

INTRODUCTION

Premature births are estimated at 13.4 million in 2020, which means more than one baby is born prematurely in every ten births (WHO, 2023). The prevalence of premature babies in Indonesia is still high, roughly 7–14%; even in some districts, it reaches 16%. This prevalence is more significant than in other developing countries, ranging from 5 to 9%. The prevalence of this premature birth nationally is 11.5%. Globally, prematurity is the leading cause of death in children under five years of age; around 900,000 children died in 2019 due to complications of premature birth (Unicef Indonesia, 2021).

Premature babies are high-risk, with health problems requiring complex care from birth to 3 months after discharge (Meyers *et al.*, 2018). The baby's health status and physical condition are related to maternal stress, which can further damage the relationship between mother and baby (Ionio *et al.*, 2016A; Ionio *et al.*, 2023; Woodward *et al.*, 2014). Mothers with premature babies find it difficult to accept their babies' physiological and psychological conditions when caring for them (Ionio *et al.*, 2016B). Health problems and disease

Received: December 12, 2023 Received in revised form: December 20, 2023 Accepted: December 25, 2023

outcomes can affect a mother's ability to manage her family, work, and social roles, leading to the emergence of psychological issues (Baron, & Ragay, 2020). Mothers will feel insecure, afraid, unprepared, and unable to become skilled mothers to care for their tiny babies; mothers are afraid of harming their babies or making mistakes (González & Espitia, 2014; Jabraeili *et al.*, 2018; Ochandorena-acha *et al.*, 2020).

Mothers with premature babies have higher stress than mothers with full-term babies and experience barriers to becoming mothers, so mothers need to adjust coping strategies continuously (Hamon, Bourdin, & Le Driant, 2023; Tabrizi, Alizadeh, & Radfar, 2017; Zekowitz, Bardin, & Papageorgiou, 2007). On average, the stress of mothers who care for their babies at home is normal daily stress (de Castro Pereira *et al.*, 2019). Coping depends on the person's cognitive behavior, supported by existing resources (Biggs, Brough, & Drummond, 2017). Mothers of premature babies use two coping strategies, namely positive stress reassessment and seeking social support (Arzani *et al.*, 2015; Galeano & Carvajal, 2016). Meanwhile, according to Breivold, the coping strategies used by mothers of premature babies are to get closer to premature babies and believe in God by being grateful for the condition of premature babies, praying for the health and safety of premature babies, and getting closer to God (Breivold *et al.*, 2019; Çaksen, 2022). Research on maternal coping with premature babies shows that 70% of premature babies have coping strategies in the moderate category (Paul *et al.*, 2018).

Health worker interventions are key to enhancing parental interaction by developing coping strategies for preventive interventions in primary, secondary, and tertiary care settings (Khaleghipour *et al.*, 2022; Mahwasane *et al.*, 2023). Nurses need to understand the mother's coping strategies and the factors that affect the mother so that they can understand the mother's condition and help the mother to deal with it effectively (Doupnik *et al.*, 2017; Kaliampos & Roussi, 2017). As a form of support for mothers, nurses can play an effective and supportive role in coping with stress (Çelik, & Altay, 2023; Nolan & Lawrence, 2009). Nurses caring for mothers of low birth weight (LBW) infants need expertise in psychology to support them during extended hospitalization and separation from their newborns (Binti Ab Latif, 2018).

Currently, the identification of stress and coping strategies mothers use still focuses a lot on when the baby is in the NICU (Gurgani & Jogi, 2018; Patil, 2014; Paul *et al.*, 2018; Rajalakshmi & Kalavathi, 2017; Sharma, 2019; Tajalli *et al.*, 2022). In contrast, stress and coping strategies for mothers when caring for premature babies at home are still under-researched (de Castro Pereira *et al.*, 2019). Therefore, research on the relationship between coping strategies and maternal stress when caring for premature babies at home can result in a better understanding of the need for continued support, supervision, and care after discharge from the hospital. Given the abovementioned problems, this study aims to assess the correlation of coping strategies with maternal stress when caring for premature babies at home. It needs to be emphasized that this kind of research has never been done in Indonesia before.

METHODOLOGY

Design

This study used a cross-sectional design with an observational approach.

Research Question

Was there any correlation between maternal coping and stress in caring for a premature baby?

Sample

Data collection was carried out from July 2022 to November 2022. The population in this study were mothers who cared for premature babies at home in the Malang area (Malang City, Malang Regency, and Batu City). The sample in this study were mothers of premature babies who met the following inclusion criteria: mothers who cared for premature babies at home for one day to three months, mothers and premature babies were in good health, and premature babies had no congenital diseases. The number of samples in this study

was 188, and the sampling technique used was purposive sampling.

Ethical Consideration

This study was granted ethical clearance by The Ethics Commission of General Hospital Dr. Saiful Anwar Malang, Indonesia with the number 400/227/K.3/102.7/2022 on 12th September 2023.

Data Collection and Procedure

The research process begins with licensing and obtaining ethical clearance. Detailed, informed consent was provided to each respondent without any coercion to participate in the study. The data was collected offline by providing a questionnaire. This study used a paper-based questionnaire. Respondents filled out the questionnaires according to their conditions. For data analysis SPSS was used. The data input process began with editing. Editing refers to checking the completeness of the data in the questionnaire. Furthermore, coding facilitates the score and interpretation of the range value. The missing and error data was checked and analyzed it using univariate and bivariate analysis.

An Instrument for Data Collection

The stress questionnaire uses the parental stress scale (PSS), consisting of 18 questions with a minimum score of 18 and a maximum score of 90 with a five-degree answer (1=strongly disagree, 5=strongly disagree). The coping instrument comes from the results of previous research, which consists of 4 indicators: praying, getting closer to the baby, accepting the situation, and seeking support (Kapti *et al.*, 2022). The coping questionnaire consists of 21 statements filled in by respondents with five-degree answers (1=strongly disagree, 5=strongly disagree). The instruments used in this study have been tested for reliability and validity. The stress questionnaire is declared valid with a value range of r 0.538–0.861, and the coping questionnaire is declared valid with a value range of r 0.459–0.974. The stress questionnaire had a reliability value of 0.860, and the coping questionnaire had a reliability value of 0.966.

Data Analysis

The data were screened for missing items. Total scale scores were computed for measures of maternal stress and coping. The stress score of each indicator is categorized as follows: The total score of the assessment is then divided by a percentage and classified into low: $\leq 55\%$, moderate: $56-\leq 75\%$, and high: $76-100\%$. Score indicators of coping consist of praying, getting closer to the baby, accepting the situation, and seeking support. The score of each indicator is categorized as follows: The total score of the assessment is then divided by a percentage and classified into low: $\leq 55\%$, moderate: $56-\leq 75\%$ and good: $76-100\%$. Descriptive statistics (frequency and percentage) were computed to describe the maternal and premature baby characteristics, coping and its subscale (praying, getting closer to the baby, accepting the situation, and seeking support), and stress. The Spearman correlation coefficient test was used to find a correlation between maternal and premature baby characteristics, coping, and stress with a significance of alpha 0.05.

RESULTS

Maternal and infant characteristics of respondents' data are shown in Table 1. This study included 188 mothers who had premature babies at home as participants. The dominant respondent age categories were 17–35 years, with as many as 77.6%, and 1.1% of respondents were aged 12–16 years. High school graduates, with 40.4%, dominated respondents' education level. Most of the respondents were not working (72.3%). Respondents in this study predominantly had SC delivery methods (76.6%), low economic status (67.6%), and lived in rural areas (52.7%). Most of the birth weight was in the 1.6–2.5 category, namely 77.1%, with moderate prematurity being the most common, namely 87.2%. The demographic variables of mothers and babies that have a relationship with stress are the mother's occupation, the mother's place of residence, and the birth weight of premature babies.

Table 1: Maternal and Infant Demographics

Mother Factors	Category	Frequency(n=188)	%	P Value with Stress
Mother Age	12-16	2	1.1	0.915
	17-25	73	38.8	
	26-35	73	38.8	
	36-45	40	21.3	
	Total	188	100.0	
Mother Education	Elementary School	24	12.8	0.165
	Middle School	54	28.7	
	High School	76	40.4	
	Vocational	12	6.4	
	Bachelor	22	11.7	
	Total	188	100.0	
Job	Working	52	27.7	0.023
	Not Working	136	72.3	
	Total	188	100.0	
Delivery Method	Normal	44	23.4	-0.076
	C-section	144	76.6	
	Total	188	100.0	
Economy Status	High	61	32.4	0.301
	Low	127	67.6	
	Total	188	100.0	
Living Place	Rural	99	52.7	0.000
	City	89	47.3	
	Total	188	100.0	
New Born Baby	<1000 gram	4	2.1	0.000
	1000-1.500 gram	16	8.5	
	1.600-2.500 grams	145	77.1	
	>2.5 gram	23	12.2	
Prematurity	Very Preterm	20	10.6	0.385
	Moderate Preterm	164	87.2	
	Borderline Preterm	4	2.1	

The maternal stress data of respondents is shown in Table 2. Most respondents were in the moderate stress category (70.2%), and none were in the high-stress category. As for the mother's coping, the data of the respondents is shown in Table 3. The mothers' coping, namely being able to get closer to the baby and accepting the situation, was in the good category by 94.7%, 76.6%, and 68.1% consecutively, and no respondents were in the low coping category. Coping is looking for support; most respondents were in the moderate category by 60.6%, and some still fall into the low category by 5.6%.

Table 2: Stress Variable

Variables	Category	Frequency (n=188)	%
Stress	Low	56	29.8
	Moderate	132	70.2
	Total	188	100.0

Table 3: Coping Variable

Variables	Category	Frequency (n=188)	%
Pray	Moderate	10	5.3
	Good	178	94.7
	Total	188	100.0
Attachment	Moderate	44	23.4
	Good	144	76.6
	Total	188	100.0
Acceptance	Moderate	60	31.9
	Good	128	68.1
	Total	188	100.0
Seeking Support	Low	11	5.9
	Moderate	114	60.6
	Good	63	33.5
	Total	188	100.0

Table 4: Correlation between Maternal Stress and Coping

Maternal Coping Strategies	Maternal Stress	
	R	P Value
Pray	-0.555**	0.000
Attachment	-0.529**	0.000
Acceptance	-0.561**	0.000
Seeking Support	-0.271**	0.000

In this study, based on table 4, it was found that there was a correlation between stress and the mother's coping (coping for praying: *p*-value 0.008, coping for attachment: *p*-value 0.000, coping for acceptance: *p*-value 0.000, and coping for seeking support: *p*-value 0.000). The strongest correlation was coping with acceptance (*r* = 0.561), meaning that the better the coping, the less stress.

DISCUSSION

Based on PSS, the stressor for mothers who care for premature babies at home is that caring for premature babies requires a lot of energy and time. Premature babies require more complex care than normal-born babies. The appearance and behavior of premature babies that become stressors for mothers are the tiny looks of the baby and the baby who looks helpless and weak. Another stressor is financial needs that are not small because premature babies require a lot of money because of continuous and special care. The mandatory costs include control in the hospital, baby milk to supplement breast milk, and baby equipment such as diapers.

This study showed that most respondents, roughly 70.2%, had stress in the moderate category. This result is supported by previous studies where 51.6% of mothers experienced low mental health (Abimana *et al.*, 2020), and the majority, 55% of mothers, had moderate stress levels (Sharma, 2019). The condition of the baby influences the level of stress. Mothers who have sick babies experience high stress. Higher stress is also experienced by mothers who have premature babies with low gestational age and low birth weight (Miles *et al.*, 2005). This supports the results of this study, where most of the maternal stress is in the moderate category because mothers have babies of gestational age. Most are in moderate prematurity, with a birth weight between 1,600 and 2,500 grams.

Maternal coping in this study was divided into four subscales: praying, getting closer to the baby, accepting the situation, and seeking support. In each subscale, most of the responses are in the classification of good coping strategies. The results of this study differ from previous studies, which stated that most mothers are in the moderate coping category (Gurgani & Jogi, 2018; Patil, 2014; Paul *et al.*, 2018; Sharma, 2019), and there is one study that gives the result that most respondents have poor coping strategies (Rajalakshmi &

Kalavathi, 2017). The results of this study can be explained as follows: the results of this study are mostly maternal stress in the moderate category, so the coping strategies of praying, getting closer to the baby, accepting the situation, and seeking support are in the good category. This is supported by research results stating that people with high stress use emotion-based coping strategies, while those with low stress levels use planned problem-solving coping strategies (Tajalli *et al.*, 2022).

The stress of mothers who care for premature babies at home is correlated with birth weight, place of living, and the mother's job. These results follow previous research where low birth weight is associated with maternal stress (Schappin *et al.*, 2013). The severity of the premature condition was found to correlate with the stress score because mothers see the appearance and behavior of premature babies as different from babies born normally (Malliarou *et al.*, 2021). The smaller the baby's weight at birth also affects the health and development of the baby in the future, so it becomes a fear and burden that may affect the mother's stress. The second variable related to stress is where the mother lives. The risk of mental health problems was found to be higher in individuals who are in rural areas (Ginja *et al.*, 2020). Living in a rural area, you will experience limited resources and support and a stressful life (Miles *et al.*, 2005). Preterm birth rates are higher in rural areas, and there is inadequate access to specialist health services and support (Wakely, Rae, & Keatinge, 2015). Limited resources, support, access, and health services will cause stress when mothers care for premature babies at home and live in rural areas. The last variable that is correlated is the mother's job. These results follow research from Bener in 2013 but are not following de Castro Pereira's research in 2019 (Bener, 2013; de Castro Pereira *et al.*, 2019). Working mothers have to start preparing the baby and get support from other people to leave the child at home. With the various limitations and problems of premature babies, it will be more difficult to prepare everything, which causes stress for mothers.

There is a correlation between coping and stress, supported by previous research, which states there is a correlation between coping and maternal stress (Malliarou *et al.*, 2021; Rajalakshmi & Kalavathi, 2017; Sharma, 2019). Mothers of premature babies show that they experience obstacles to becoming mothers, so they need appropriate coping strategies to overcome this situation (Tabrizi, Alizadeh, & Radfar, 2017). Coping can help mothers reduce stress so they can show maternal behavior, namely good caring abilities (Rossman *et al.*, 2017). Using efficient coping will regulate emotions, reduce the adverse effects of stress due to premature birth, and increase the ability to interact with the baby and the physical and mental health of the mother (Karbandi *et al.*, 2018). Understanding the coping mechanisms used by mothers of premature babies is the cornerstone of choosing the best approach for mothers to build effective health worker and patient relationships. Identifying the patient's stress level and coping mechanisms is important because patients who adopt maladaptive coping are more likely to perceive health workers as disengaged and less supportive (Emad, & Algorani, 2021).

CONCLUSION

Mothers' coping strategies in this study were mostly in the category of good coping strategies, while the stress experienced by mothers when caring for premature babies at home was mostly in the moderate category. This study shows a correlation between coping strategies and the stress of mothers who care for premature babies at home. Mothers need to get support from health workers as an important element in efforts to develop mothers' coping strategies to reduce maternal stress. Health workers need to provide psychological intervention, which has not been optimally given to mothers with premature babies in Indonesia.

Conflict of Interest

The authors declare that they have no competing interests.

ACKNOWLEDGEMENT

The authors gratefully acknowledge those who participated in this study and also thank the Research Institutes and Community Service (BPPM) Faculty of Health Science, Universitas Brawijaya. They deeply appreciate everyone for helping with this study.

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