INFANTS CHARACTERISTICS ON POST-PARTUM MOTHERS EFFICACY IN CARING FOR INFANTS WITH LOW BIRTH WEIGHT

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ABSTRACT

Background: Low birth weight (LBW) babies are babies born weighing less than 2500 grams. LBW babies are vulnerable and require special care at the hospital and home. To perform optimal care, it is necessary to have good self-efficacy from the mother which can be influenced by the characteristics of the baby. This study aimed to analyze the relationship between baby characteristics on post-partum mother efficacy.
Subjects and Method: This was a cross-sectional study conducted at General Hospital in East Java from January to March 2020. A total of 24 post-partum mothers were selected for this study. The dependent variables was post-partum mothers efficacy. The independent variable were baby characteristic (baby age, baby weight, medical diagnosis of baby, and medical device). The data were collected by a set of questionnairre and analyzed by Spearman correlation.
Results: Post-partum efficacy was correlated with baby weight (r= 0.47; p= 0.018), the use of medical device (r= -0.44; p= 0.018), and it was statistically significant. Baby age >10 days (r= -0.28; p= 0.177), medical diagnosis of baby (r= -0.01; p= 0.964) were correlated with post-partum eeficacy, but it was statistically non significant.
Conclusion: Post-partum mother efficacy has correlations with baby weight, the use of medical device, baby age, and medical diagnosis. However, some of the correlations were statistically non significant.

Keywords: baby characteristics, low birth weight, caring, self-efficacy, post-partum mothers.

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BACKGROUND

The prevalence of LBW in the world is estimated that 15-20% of the total births, or > 20 million new births per year are babies with low birth weight (LBW). The proportion of LBW infants in children aged 0-59 months is 6.2%. East Java occupies the 11th position with the highest number of LBW in Indonesia (Riskesdas, 2018). Hartiningrum (2018) states that the incidence of LBW in East Java from 2012-2015 was 2.8% of the total number of 2,971,951 live births.

LBW babies are 20 times more likely to die than babies with normal weight (UNICEF & WHO, 2004). There is a need for prevention strategies and increased care for LBW babies because of the risk of accompanying health problems. LBW babies need special attention and intensive care both in the hospital and at home to help promote optimal development for babies (Tarigan et al., 2012).

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Research by Suyami et al. (2014) states that the mother's self-efficacy in caring for LBW babies is still low at 68.2%. If the mother is not confident in taking care of her baby, it will have an impact on the ineffectiveness of home care. According to Suyami (2013), mothers will have high self-efficacy with the following characteristics: age 20 years, highly educated, have experience caring for LBW and have children >1.

Many studies have analyzed whether there is a relationship between maternal characteristics and a mother's self-efficacy, but there are still no studies related to infant characteristics such as infant age, baby's birth weight, medical diagnoses, and medical aids attached to the baby. This description underlies the need to research whether there is a relationship between the characteristics of the baby on the self-efficacy of the mother in caring for LBW babies at home so that the relationship can be known. This study aimed to analyze the relationship between baby characteristics and a mother's self-efficacy in caring for an LBW baby at home.

SUBJECTS AND METHOD

1. Study Design

A cross-sectional study was conducted at perinatology unit of a state hospital in East Java, Indonesia from Agustus to Oktober 2022.

2. Population and Sample

The population of this study were postpartum mothers who had premature babies. We involved postpartum mothers with the following inclusion criteria: 1) postpartum mothers with low birth weight babies (<2500 grams), 2) mothers' ability to read and write in stable health conditions; and 3) willing to participate in this research. Exclusion criteria included 1) postnatal mothers who had low birth weight babies with any congenital abnormalities; 2) readmission of mother and baby to the hospital for any reason.

3. Study Variables

The independent variables were infant characteristics (age, body weight, medical diagnosis). The dependent variable was the post-partum mothers efficacy.

4. Definition Operational of Variables

The baby's age is the age according to the date of birth until the data is collected, while the birth weight is the weight the baby has at birth.

Medical diagnosis is a medical diagnosis that is owned by babies when babies are treated in hospitals and medical devices are medical aids that support baby care in hospitals.

5. Study Instruments

Data were collected using a questionnaire: Perceived Maternal Parenting Self Efficacy (PMP-SE) for measuring the post-partum mother's efficacy. The questionnaires have been tested for validity and reliability.

6. Data Analysis

Data were analyzed using spearman's rho correlation test. Moreover, descriptive statistics were used to describe the frequency, mean and standard deviations. In all the tests, the significance level of p less than 0.05.

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RESULTS

1. Sample Characteristics

Table 1 showed the frequency distribution of the characteristics of LBW infants was identified that the infants age was >10 days (62.5%), and the infants birth weight was 1500-2500 grams (54.2%), the medical diagnosis of respiratory diseases accompanying the LBW infants (41.7%) and 2 medical aids attached to the baby while in the hospital (54.2%).

Table 1. Distribution of LBW Babies Characteristics

Characteristics	Categories	Frequency (n)	Percentage (%)
Baby Age	≤2 day	4	16.7
	3-10 days	5	20.8
	>10 days	15	62.5
Baby Weight	<1000 (g)	2	8.30
	1000-1500 (g)	9	37.5
	1500-2500 (g)	13	54.2
Baby Medical Diagnosis	Aterm, Preterm, Hiperbilirubin	8	33.3
	Respiratory Disorder	10	41.7
	Sepsis	3	12.5
	Heart Disorder	3	12.5
Medical Device	1 device	8	33.3
	2 devices	13	54.2
	>2 devices	3	12.5

2. Bivariate Analysis

Table 2 showed the result of Spearman correlation test, it can be seen that post-partum efficacy was correlated with baby weight (r= 0.47; p= 0.018), the use of medical device (r= -0.44; p= 0.018), and it was statistically significant. Baby age >10 days (r= -0.28; p= 0.177), medical diagnosis of baby (r= -0.01; p= 0.964) were correlated with post-partum efficacy, but it was statistically non significant.

DISCUSSION

Self-efficacy is an individual's belief that he will succeed in mastering the skills needed to complete certain tasks (Ramadhani, 2011). Perception of self-efficacy will determine how a person thinks, feels, and behaves, that self-confidence will lead to success, and doubts about self-efficacy will result in defeat and failure. However, what is more, important is how individuals actively use their self-efficacy abilities to influence how they should act.

The results of statistical analysis of the characteristics of the baby and the mother's self-efficacy in caring for LBW at home showed that the characteristics that had a significant relationship were the baby's birth weight and the medical aids attached to the baby. Astria et al. (2016) explained that babies with birth weights between 1500 until 2499 grams had a higher survival rate. This can reduce the mother's anxiety so that her self-efficacy increases. A body weight that is close to the adequate weight of 2500 grams will further shorten the hospital stay and can be immediately discharged. This is in line with the theory from the Indonesian Ministry of Health. (2008)

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which explains that one of the indicators that a baby can be sent home is if the baby's weight increases by at least 15 grams/kg/day.

Table 2. Relationship between Mother and Baby Characteristics on Mother's Self-Efficacy

Variables	Self-Efficacy						r	p
	Low		Moderate		High			
	n	%	n	%	n	%		
Baby Age								
<3 day	0	0	0	0	4	16.7		
3-10 days	0	0	0	0	5	20.8	-0.28	0.177
>10 days	0	0	3	12.5	12	50		
Baby weight								
<1000 (gr)	0	0	1	4.2	1	4.2		
1000-1500 (gr)	0	0	2	8.3	7	29.2	0.47	0.018
1500-2500 (gr)	0	0	0	0	13	54.2		
Baby Medical Diagnosis								
Aterm, Preterm, Hiperbilirubin	0	0	1	4.2	7	29.2		
Respiratory Disorder	0	0	1	4.2	9	37.5	-0.01	0.964
Sepsis	0	0	1	4.2	2	8.3		
Heart Disorder	0	0	0	0	3	12.5		
Medical Device								
1 device	0	0	0	0	8	33.3		
2 devices	0	0	1	4.2	12	50	-0.44	0.018
>2 devices	0	0	2	8.3	1	4.2		

Before LBW reaches sufficient weight and the baby's condition is stable, the baby will require intensive care. In intensive care, medical aids are sometimes needed according to indications (Bebasari et al., 2017). Assistive devices such as CPAP or mechanical ventilation are used to maintain life and help the growth and development of premature or low birth weight infants who have respiratory problems (Emiliyawati et al., 2017). In addition, LBW babies are also at high risk of experiencing hypothermia which can have a fatal effect on the baby's life. The treatment given to avoid hypothermia is carried out the treatment in an incubator. This incubator treatment is usually carried out for a period of one week to one month (Rosha et al., 2018). In addition to the two tools above, the use of oxygen and feeding tubes is used by the majority of LBW. Intensive care undertaken by LBW with various medical aids will cause anxiety in the mother. This condition can increase maternal anxiety so that the mother's self-efficacy decreases.

In the relationship between the characteristics of the baby and the mother's self-efficacy, it was found that the baby's birth weight and the medical aids attached to the baby had a significant relationship with self-efficacy whereas between the baby's birth weight and the mother's self-efficacy had a unidirectional relationship, while between medical aids and Mother's self-efficacy has a non-unidirectional relationship.

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AUTHOR CONTRIBUTION

Rinik Eko Kapti and Yuni Sufyanti Arief contributed substantially to the concept and work design. Mira Triharini and Shifa Resti Sahara conducted data analysis, data interpretation, and drafting of the manuscript. Rinik Eko Kapti and Yuni Sufyanti Arief revised it critically for the important intellectual content and final approval of the version to be published.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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