



ARTICLE RESEARCH

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**Correlation Between the Health Belief Model on Early Mobilization Behavior during the Postpartum Period in Jember Regency**

<sup>C</sup>Nurul Aini<sup>1</sup>, Ika Sulistiyawati<sup>2</sup>

<sup>1,2</sup>Program Studi DIII Kebidanan, Akademi Kebidanan Jember

Email Corresponding Author(<sup>C</sup>): [aininurul600@gmail.co](mailto:aininurul600@gmail.co)

[aininurul600@gmail.com](mailto:aininurul600@gmail.com)<sup>1</sup>, [andikagbb@gmail.com](mailto:andikagbb@gmail.com)<sup>2</sup>

ABSTRACT

Maternal mortality is still a major public health problem. Every day, about 810 women around the world die from complications related to pregnancy, childbirth, and puerperium. Jember Regency has the highest number of maternal deaths in East Java in 2021, namely 115 deaths, of which 61 (53%) occurred during the puerperium. This study aims to determine the relationship between the health belief model and early mobilization behaviour during the postpartum period in Jember District. The health belief model consists of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. Research with a cross-sectional design was conducted on 123 postpartum mothers in the Jember Regency. A multistage random sampling technique was used for sampling from the population. Data were collected through questionnaires and observation checklists of mobilization behaviour, then analyzed by descriptive data analysis and Spearman correlation test. The results of the descriptive data analysis showed that 86.2% of postpartum mothers were aged 20-35 years, and 40.7% had a high school level of education. In comparison, the results of the Spearman correlation test showed perceived susceptibility ( $p=0.000$ ,  $\rho = 0.346$ ), perceived severity ( $p=0.001$ ,  $\rho = 0.309$ ), perceived benefits ( $p=0.000$ ,  $\rho = 0.450$ ), and perceived barriers ( $p=0.000$ ,  $\rho = -0.428$ ). It can be concluded that perceptions of susceptibility, severity, and benefits have a positive relationship with early mobilization behaviour, while perceived barriers have a negative relationship. It is necessary to strengthen community and family empowerment efforts by increasing the role of cadres and families in providing motivation and support to postpartum mothers to carry out early mobilization to prevent complications during the postpartum period and to accelerate recovery in postpartum mothers after giving birth.

Keywords: Early mobilization; postpartum mothers; perceived

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**Address :**

Jl. Urip Sumohardjo Km. 5 (Campus II UMI)  
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**Email :**

[jurnalwoh.fkm@umi.ac.id](mailto:jurnalwoh.fkm@umi.ac.id)

**Phone :**

+62 82188474722

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## INTRODUCTION

Maternal mortality continues to be a significant public health issue.<sup>1</sup> Every day, 810 women around the world die from causes related to pregnancy, childbirth, or within 42 days after delivery (the postpartum period).<sup>2</sup> According to the 2021 WHO health statistics report, the global maternal mortality rate was 211 per 100,000 live births, whereas in Indonesia, it stood at 177 per 100,000 live births.<sup>3</sup> Notably, 52% of these deaths occur during the postpartum period.<sup>4</sup> The deaths were caused by complications such as postpartum hemorrhage, hypertensive disorders, and postpartum infections.<sup>5</sup> In 2021, Jember Regency had the highest number of maternal deaths in East Java, totaling 115 deaths. Of these, 61 (53%) occurred during the postpartum period.<sup>6</sup> This high mortality rate indicates that the health status of mothers in Jember Regency requires urgent attention. Research conducted by Ahmed S. and Fullerton J. in 2019 demonstrated that providing optimal care and attention to mothers during the postpartum period can help prevent maternal deaths.<sup>7</sup>

The postpartum period refers to the time following childbirth, lasting up to 42 days.<sup>8</sup> During this time, mothers go through various physiological and psychological changes.<sup>9</sup> This period is associated with potential complications, including postpartum hemorrhage, deep vein thrombosis, pulmonary embolism, puerperal infection, and issues related to breastfeeding.<sup>10</sup>

Early mobilization is essential during the postpartum phase, as it promotes the restoration of muscle function and facilitates a quicker, optimal recovery.<sup>11</sup> Engaging in early mobilization can strengthen muscle tone, improve the function of the digestive and urinary tracts, prevent thrombosis, aid in the discharge of lochia, accelerate uterine involution, alleviate pain, and reduce swelling commonly experienced in the legs.<sup>12,13</sup>

Postpartum recovery tends to be faster when mothers mobilize properly and correctly.<sup>8</sup> Research conducted by Roheman, Seventina H, Mustopa, Masrifah, and Wike shows that early ambulation can significantly reduce pain in postpartum mothers.<sup>12</sup> Other studies indicate that the sooner a postpartum mother begins to mobilize, the quicker she can eliminate urine. Conversely, a delay in mobilization is associated with a longer time to first urine elimination.<sup>14</sup> Additionally, Paul and Narayan highlight that early mobilization during the postpartum period can prevent many complications, enhance gastric motility, improve respiratory function, reduce the risk of thrombophlebitis, and increase physical strength during recovery.<sup>15</sup>

Previous research in Jember Regency revealed that 7 out of 36 postpartum mothers (19%) did not perform early mobilization properly.<sup>16</sup> This issue is influenced by factors such as attitudes, perceptions, beliefs, and motivation regarding early mobilization among postpartum mothers.<sup>17,18</sup> According to prior studies, mothers who hold a negative perception of mobilization during the postpartum period are 3.75 times more likely to neglect proper early mobilization compared to those with a positive perception.<sup>18</sup> His neglect can adversely affect the uterine involution process.<sup>19</sup> Research conducted by Cholifah N. and Siswanti H. in 2021 indicated that early mobilization can accelerate the uterine involution process by a factor of 5.25 times.<sup>13</sup>

The Health Belief Model framework suggests that a person's behavior is influenced by their perceptions of susceptibility, severity, benefits, and barriers.<sup>20</sup> Research indicates a significant connection between the Health Belief Model and behavioral activities (mobilization) in adults.<sup>21</sup> A qualitative study conducted by Berhimpong, Ratu, and Pertiwi involved six informants and utilized in-depth interview techniques along with direct observations. The findings revealed that perceptions of susceptibility, severity, benefits, and barriers significantly impact activity behavior at the Bahu Manado Health Center.<sup>22</sup> Additional studies also demonstrate that education based on the Health Belief Model positively influences postpartum maternal behavior.<sup>23,24</sup>

To reduce complications during the postpartum period, the government has established a schedule for postpartum care visits. These visits are set for four specific times: 6 hours after delivery to Days 2 (KF1), Days 3 to 7 (KF2), Days 8 to 28 (KF3), and Days 29 to 42 (KF4). Continuous postpartum visits are essential for providing care, early detection of potential issues, and monitoring the mother's progress throughout the postpartum period. During these visits, postpartum mothers will undergo health examinations and receive counseling regarding mobilization and physical activity following childbirth.<sup>26</sup>

The perception of postpartum mothers significantly influences their early mobilization behavior, affecting the speed of their recovery during this time. Researchers are particularly interested in analyzing the relationship between health belief models and early mobilization behavior in postpartum mothers in Jember Regency. While studies on factors influencing mobilization have been conducted both in Indonesia and internationally, this research specifically examines mobilization behavior through the lens of the health belief model.

## METHOD

This study utilized a cross-sectional design and took place in Jember Regency during August 2022. Jember Regency was selected as the research location due to having the highest number of maternal deaths in East Java in 2021, totaling 115 deaths (0.33%), with 61 of these being postpartum maternal deaths, constituting 53% of the total. This shows an increase in the proportion of postpartum maternal deaths from 2020, which was 49%, reflecting a rise of 4%.<sup>6,27</sup>

This study's subjects were postpartum mothers within 1 to 42 days after giving birth. In 2021, there were 32,290 postpartum mothers, averaging 619 postpartum mothers per week. The sampling technique employed in this study was multistage random sampling, which allows researchers to conduct sampling in stages. In the first stage, a random selection of Puskesmas (Community Health Centers) was performed, followed by a random sample selection based on the proportion of postpartum mothers at each selected Puskesmas. A minimum of 13 Community Health Centers was required for this study, totaling a sample size of 123 postpartum mothers.

The research data were collected directly from respondents, also known as primary data. The health belief model includes variables such as perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, all of which were measured using a questionnaire. The early

mobilization variable was assessed using a mobilization observation checklist for postpartum mothers, which evaluated mobilization ability at three time intervals: before 6 hours, between 6-24 hours, and from 1 to 5 days postpartum. Implementing early mobilization within the first 6 hours postpartum is crucial for accelerating recovery and preventing complications like excessive bleeding.

To ensure the reliability and validity of the research instruments, we conducted instrument validity testing through correlation analysis and reliability testing using Cronbach's alpha. Descriptive data analysis was executed to gather information on the characteristics of respondents, including maternal age and education level. Additionally, a Pearson correlation test was performed to examine the relationship between the health belief model and early mobilization behavior of postpartum mothers. If the data did not meet the normality assumption, a Spearman correlation test was employed. The decision-making criteria established a significance level of  $p < 0.05$ , indicating that an influence between variables was considered significant at the  $\alpha$  level of 5%.

## RESULTS

Table 1 presents a description of the respondents' characteristics, including their mothers' ages and education levels. The data indicates that the majority of respondents are between the ages of 20 and 35 years, accounting for 86.2% of the sample. Additionally, the most common highest level of education attained by the respondents is high school graduation, comprising 40.7% of the responses.

Table 1. General Description of Respondents

Characteristics	Descriptive	Distribution	
		Frequency	Percentage (%)
Age of a Postpartum Mother	< 20 Years	4	3.3
	20-35 Years	106	86.2
	> 35 Years	13	10.6
	Total	123	100
Education Levels	Not graduated from elementary school.	2	1.6
	Elementary school	20	16.3
	Junior high school	26	21.1
	Senior high school	50	40.7
	College	25	20.3
	Total	123	100

The Kolmogorov-Smirnov normality test results indicated the data did not meet normality assumptions; therefore, the analysis was conducted using the Spearman correlation test. The findings from the bivariate data analysis are presented in Table 2 below.

Table 2. Bivariate analysis results

Hypotesis	Variable	Correlation Coefficient ( $\rho$ )	p-value
H1	Perceived Susceptibility	0.346	0.000*
H2	Perceived Severity	0.309	0.001*
H3	Perceived Benefits	0.450	0.000*
H4	Perceived Barriers	-0.428	0.000*

Table 2 illustrates the results of the hypothesis test regarding all health belief variables, which include perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. The significance value for these variables is 0.00, which is less than the threshold of 0.05. This indicates a correlation between mothers' susceptibility, perceived severity, perceived benefits, and perceived barriers and their early mobilization behavior during the postpartum period.

The correlation coefficients for the perceived susceptibility variable ( $\rho = 0.346$ ) and perceived severity ( $\rho = 0.309$ ) indicate a positive relationship. This suggests that as mothers perceive higher levels of susceptibility and severity during the postpartum period, their early mobilization behavior improves. Since the absolute values of  $\rho$  fall within the range of 0.30 to 0.39, this indicates a "low" relationship. Thus, we can conclude that there is a positive but low correlation between the perceived susceptibility and perceived severity of the behavior of early mobilization.

The correlation coefficient values indicate important relationships between perceived benefits and perceived obstacles regarding early mobilization behavior. The value for perceived benefits ( $\rho = 0.450$ ) is positive, suggesting that as mothers recognize greater benefits of mobilization, their behavior towards early mobilization improves. In contrast, the perceived barriers ( $\rho = -0.428$ ) had a negative value, suggesting that as mothers recognize more barriers, their behavior regarding early mobilization declines.

The absolute values of both correlation coefficients fall within the range of 0.40 to 0.49, which indicates a "quite strong" relationship. Therefore, we can conclude that the perception of benefits has a positive and quite strong relationship with early mobilization behavior, whereas the perception of obstacles has a negative and quite strong relationship with it.

The correlation coefficient value ( $\rho$ ) of the variable of perceived benefits ( $\rho = 0.450$ ) shows a positive value, while the perception of obstacles ( $\rho = 0.428$ ) shows a negative value. That means that the greater the benefits of mobilization felt by the mother, the perception will be followed by better early mobilization behavior. Meanwhile, the greater the barriers felt by the mother, the perception will be followed by worse early mobilization behavior. The absolute value of  $\rho$  is between 0.40-0.49, which means a "quite strong" relationship. Based on the coefficient value, it can be interpreted that the perception of benefits has a positive and quite strong relationship with early mobilization behavior. The perception of obstacles has a negative and quite strong relationship with early mobilization behavior.

## DISCUSSION

This study found a significant positive relationship between the perception of susceptibility ( $p = 0.000$ ) and the perception of severity ( $p = 0.001$ ) with early mobilization behavior. The findings regarding perceived susceptibility align with the research conducted by Seungmi, Deulle, and Jiyeon in 2020, which indicated that individuals who feel a higher sense of susceptibility are more likely to engage in certain behaviors, such as breastfeeding during the postpartum period.<sup>29</sup> Additionally, this study reinforces the conclusions of Parsa P, Masoumi Z, Parsa N, and Parsa B, who in 2015 found that postpartum mothers who breastfeed perceive a greater severity of infant health conditions compared to

those who do not breastfeed.<sup>30</sup> Perceived susceptibility and severity are both related to an individual's beliefs about the seriousness and risk associated with various medical conditions. When a person believes they are at a high risk, they are more likely to adopt specific health behaviors.<sup>31</sup> Several health theories suggest that perceived susceptibility and severity can create psychosocial constructs that enhance motivational strength to engage in disease prevention behaviors.<sup>32</sup> Therefore, it can be inferred that a mother's perception of the severity of health conditions during the postpartum period, along with her recognition of the potential risks or dangers that may arise within 42 days post-delivery, serves as a trigger for her motivation to engage in early mobilization.

The perceived benefits refer to the advantages or positive consequences that arise from certain actions.<sup>33</sup> This study found a significant positive relationship ( $p = 0.000$ ) between the perception of benefits and early mobilization behavior. This finding aligns with the results of a study by Anggraeni FD and Putriningrum E in 2021, which indicated that the perception of benefits influences the behavior of postpartum mothers regarding exclusive breastfeeding.<sup>34</sup> Additionally, research by Zar'in AU and Arovah NI in 2021 also demonstrated a correlation between perceived benefits and an individual's active behavior.<sup>21</sup> When people understand the benefits of certain behaviors, it can positively impact both themselves and those around them, increasing the likelihood that they will make beneficial changes in their behavior.<sup>34</sup> Therefore, it is clear that mothers who recognize the benefits of early mobilization—such as preventing complications during the postpartum period and promoting the recovery of their reproductive and overall health—are more inclined to engage in early mobilization practices.

Postpartum recovery after childbirth can be improved by increasing physical activity, also known as mobilization. However, women encounter significant barriers that prevent them from prioritizing this activity. After giving birth, many mothers focus primarily on breastfeeding and ensuring their baby's well-being.<sup>35</sup> Analysis shows that the perception of these barriers negatively impacts early mobilization behavior. The more barriers a mother perceives, the more challenging it becomes for her to engage in early mobilization, and vice versa. This aligns with previous research indicating a negative relationship between perceived barriers and confidence in participating in physical activity after childbirth.<sup>36</sup> The obstacles experienced by mothers are often influenced by cultural beliefs that suggest new mothers should limit their movement. According to a study by Rahayu, Mudatsir, and Hasballah, local customs play a significant role in shaping postpartum care behaviors, as each region has its own traditions that affect mothers' recovery practices.<sup>37</sup>

Looking at the description of the characteristics of the respondents, most of them have a high school education level. The level of education can be the main determinant of knowledge about a disease and how to prevent it. So, the higher the level of education, the better the knowledge about disease prevention efforts will be.<sup>38</sup> The results of the study by Nooriani N, Mohammadi V, Feizi A, Shahnazi H, Askari G, Ramezanzade E in 2019 and the study by Naghashpour M, Shakerinejad G, Lourizadeh MR, Hajinajaf S, Jarvandi F in 2014 showed that the group given health information or knowledge was

known to affect the perception of susceptibility, perception of severity, perception of benefits, and perception of barriers, which were better compared to the control group.<sup>39,40</sup>

Overall, this study proves that perception of susceptibility, perception of severity, perception of benefits, and perception of barriers have a significant correlation with early mobilization behavior in postpartum mothers. Seeing this phenomenon, postpartum mothers need support from family, officers, and the community to carry out early mobilization. The support given to postpartum mothers is known to increase motivation to carry out early mobilization, thus allowing postpartum mothers to benefit from increased physical activity after giving birth.<sup>36,41</sup> Postpartum mothers who receive support from family and staff have a 1,029 times greater chance of successfully performing early mobilization than those who do not receive such support.<sup>42</sup>

Postpartum mothers in Jember Regency have contact with health workers at least 4 times. Visits are made at health facilities such as hospitals, health centers, auxiliary health centers, village health posts, or health posts, as well as independent doctors and midwives to get treatment and therapy according to postpartum needs. In addition, during the visit, the mother will get information and counseling related to early mobilization and activities, and light postpartum gymnastics carried out in the first week of postpartum. A good level of education and information from health workers can likely influence the knowledge of respondents, thereby increasing the perception of susceptibility, perception of severity, and perception of benefits. However, customs and culture can increase the obstacles for postpartum mothers in carrying out early mobilization. Based on the description, the greater the perception of susceptibility, severity, and benefits, the greater the impact on better mobilization behavior. However, the greater the perception of obstacles felt by the mother, the more difficult it is to carry out early mobilization.

### **CONCLUSIONS AND RECOMMENDATIONS**

Based on the results of the study, it is known that the health belief model has a significant correlation with mobilization behavior, consisting of perception of vulnerability with  $p$ -value = 0.000, perception of severity with  $p$ -value = 0.001, and perception of benefits has a positive relationship with early mobilization behavior in postpartum mothers in Jember Regency. When the perception of obstacles with  $p$ -value = 0.000 has a negative relationship with early mobilization behavior in postpartum mothers. There needs to be a strengthening of community and family empowerment efforts through increasing the role of cadres and families in providing motivation and support to postpartum mothers to carry out early mobilization so that it can prevent complications during the postpartum period and accelerate recovery in postpartum mothers after giving birth.

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