

Original Research Article

Factors Related To Maternal Eating Behavior during Postpartum: The Health Belief Model

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Abstract: Background: Postpartum is a critical transition period for a woman. Every day 810 women around the world die from causes related to pregnancy and childbirth, which 52% of them dying during the postpartum period. These deaths occur due to complications such as postpartum bleeding, hypertension disorders, and infection. **Purpose:** This study aims to determine the factors related to maternal eating behavior during postpartum in Jember Regency, East Java, Indonesia. Based on the Health Belief Model (HBM) conceptual framework, those factors are perceived susceptibility, perceived severity, perceived benefit, and perceived barrier. **Methodology:** This was an observational analytic study using a cross-sectional design. The population in this study was 2750 postpartum mothers and the sample size examined 123 postpartum mothers as respondents it was conducted by Multistage Random Sampling. Respondents were given informed consent before conducting research for Ethical Considerations. All variable was obtained using a questionnaire. A multiple logistic regression test was conducted to determine the influence dimensions of HBM on maternal eating behavior during postpartum. **Findings:** Based on the result of this study Perceived Susceptibility ($p=0,00$) and Perceived Benefit ($p=0,000$) have significant correlation with maternal eating behavior. Then perceived Severity ($p=0,983$) and Perceived Barrier ($p=0,616$) do not correlate with maternal eating behavior among postpartum in Jember Regency Indonesia **Conclusion:** This study concludes that the greater perceived susceptibility and perceived benefits will influence postpartum mothers to have healthy eating behavior. We recommend increasing nutrition education as well as collaboration with other sectors.

Keywords: Postpartum, Eating Behavior, Health, Belief, Model.

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1. INTRODUCTION

Postpartum is a critical transition period for a woman, both physiologically, emotionally, and socially (WHO 1998). Every day 810 women around the world die from causes related to pregnancy and childbirth, which 52% of them dying during the postpartum period (Tikkanen *et al.*, 2020; WHO 2019). These deaths occur due to complications such as postpartum bleeding, hypertension disorders, and infection (Say *et al.*, 2014). Maternal mortality in Indonesia increased from 4,627 to 7,389 in 2021 and it was related to obstetric and non-obstetric postpartum complications (Gonzalo- Carballes *et al.*, 2020; Kemenkes RI. 2022).

The postpartum or puerperium starts after the delivery of the placenta and ends when the reproductive organs change and return to a non-pregnant state. It usually takes about 6 weeks or 42 days after delivery

(Wahyuni 2018; WHO 1998). Balanced and complete intake of nutrition must be met during this period (R. S. N. Rahmawati, Suwoyo, and Putri 2019). In addition, optimal food consumption during postpartum can adequately support breastfeeding and reduce postnatal weight retention (Jusoh and Ismail 2022).

Nutrients are the substances required and essential for the body's metabolism (Diamond 2021). Nutritional needs during the puerperium increase by 25% due to the healing process after childbirth and breastfeeding (Eka Putri, Ramie, and Maria 2022). However, there are still myths and dietary restrictions among the people in Jember Regency. It is known that these food taboos can affect the quality of food consumption during pregnancy and postpartum (Aini and Zahariah 2022; Vidayati, Wilaya, and Mailah 2019). This occurred due to the knowledge, beliefs, and

culture of their parents (Fadhillah 2018). Inadequate dietary intake during postpartum is directly related to malnutrition, diminished immune function, and susceptibility to diseases (Bao *et al.*, 2010; Black *et al.*, 2013; Sebeta *et al.*, 2022). Lack of maternal dietary intake is also related to low weight-for-height z-score and low weight-for-age z-score in children (Ansari, Jain, and Bhatia 2020; M. Huang *et al.*, 2018).

Health Belief Model (HBM) is the main framework and theoretical model that is applied and developed to explain health behavior (Kim and Kim 2020). The HBM dimensional consists of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Janz and Becker 1984). The application of HBM in nutrition education and postnatal care is known to have a positive impact on changes and improving knowledge, attitude, and health behavior (Hazavehie *et al.*, 2018; Keshani *et al.*, 2019; Naghashpour *et al.*, 2014; Paryab, Ghanjal, and Tavakkoli 2018). This study aims to determine the factors related to maternal eating behavior during postpartum in Jember Regency, East Java, Indonesia. Based on the health belief model conceptual framework, those factors are perceived susceptibility, perceived severity, perceived benefit, and perceived barrier.

2. METHODS

This research was an observational analytic study using a cross-sectional design. The population in this study was 2750 postpartum mothers. The sample size is calculated based on the proportion of complete

postpartum visits in Jember Regency in 2021 which is 93.3%. The recommended minimum sample size is 93 people. However, this study examined 123 postpartum mothers as respondents and it was conducted by Multistage Random Sampling. Respondents were given informed consent before conducting research for Ethical Considerations.

The HBM dimension was obtained using a questionnaire, then eating behavior was observed with a food frequency checklist. This checklist contains 10 food groups based on Minimum Dietary Diversity for Women of Reproductive Age (FAO 2021). Descriptive data analysis was used to get information about the description of maternal eating behavior during postpartum. A simple logistic regression test was conducted to determine the independent potential variable. Then a multiple logistic regression test was conducted to determine the influence dimensions of HBM on maternal eating behavior during postpartum.

3. RESULTS AND DISCUSSION

Postpartum unhealthy eating behavior is defined as less than 5 of the following food groups: 1). Grains, white roots, tubers, and plantains, 2). Eggs, 3). Pulses (beans, peas, and lentils), 4).dark green leafy vegetables, 5). Nuts and seeds, 6). Other vitamin A-rich fruits and vegetables, 7). Milk and milk products, 8). Other vegetables, 9). Meat, poultry,y and fish, and 10).Other fruits. Eating behavior was assessed by observing the frequency of consuming these food groups for one week during postpartum.

Table 1: Maternal Eating Behavior

Variable	Frequency	Percent
Unhealthy Eating Behavior	46	37.4
Healthy Eating Behavior	77	62.6
Total	123	100

The results of the descriptive analysis are in Table 1. Shows that there were still 37.4% of postpartum mothers who had unhealthy eating behavior. There is a change in eating behavior after delivery in women (Ali Elneim 2014). Postpartum mothers tend to disregard their healthy eating behavior because caring for the baby is a priority during the puerperal period (Bhanbhro *et al.*, 2020). Poor diet quality during postpartum is a risk factor for maternal and child health outcomes (Jacka *et al.*, 2013).

Economic factors, access to food, food taboo influenced by culture, and inadequate nutritional information can affect dietary patterns and maternal nutrition (Bhanbhro *et al.*, 2020). Low consumption of dairy products, various fruits, vegetables, nuts, and iron sources increases the risks of micronutrient deficiencies

(Bhanbhro *et al.*, 2020). Micronutrients (iron, folic acid, and vitamin B12) and vitamin D deficiency were found to be associated with anemia also increased fatigue (Woude 2015).

Simple logistic regression tests in Table 2.show that all variables had a p-value < 0.25. This means that all of these variables are the potential for multivariate testing.

Table 2: Bivariate Data Analysis

Variable	p-value
Perceived Susceptibility	0,000
Perceived Severity	0,000
Perceived Benefit	0,000
Perceived Barrier	0,094

Table 3: Multivariate Data Analysis

Hypothesis	Variable	P-value	Exp. (B)
H1	Perceived Susceptibility	0,001	1.516
H2	Perceived Severity	0,931	0.983
H3	Perceived Benefit	0,000	2.437
H4	Perceived Barrier	0,616	0.947

This study found that perceived susceptibility (p -value= 0.001) and perceived benefit (p -value=0,000) significantly correlated with maternal eating behavior during postpartum. Perceived susceptibility is an individual's subjective belief to feel vulnerable to getting some health problems if they have unhealthy eating behavior. This finding supports the previous study, which explains that there is a significant relationship between perceived susceptibility to vegetables and fruit consumption (Soltani *et al.*, 2016). A high perception of vulnerability tends to make individuals take relevant actions to minimize the risk of disease contracting. Conversely, those who think they have a low risk of disease will have low perceived susceptibility (Kim and Kim 2020). An estimate of perceived susceptibility can motivate one to take action to reduce risk. They feel at risk for health problems (vaginal pain, anemia, fever, and bleeding), emotional disturbances, breast engorgement, and low milk supply during postpartum. It gives them the motivation to take action through healthy eating behaviors.

The HBM framework builds through the belief in the benefits obtained through preventive efforts (Kurniawati and Sulistyowati 2014). It also depends on their belief in the effectiveness of the various health effort to reduce the risk of disease (Fitriani *et al.*, 2022). The results of this study show that they believe that the benefit of healthy eating behavior can improve their health, increase their breast milk supply also prevent vaginal infection. Higher intakes of cereals, eggs, and red meat are known to correlate with higher protein and energy content in breast milk (Huang and Hu 2020). While snakehead fish, zinc, eggs, red guava, catfish, pineapple, and honey are known to be effective for perineal wound recovery (Sebayang and Ritonga 2021). The results of previous studies showed that there was a significant relationship between maternal intake nutrition with perineal wound recovery (Rahmawati and Triatmaja 2017; Wijayanti, Widyasih, and Wahyuningsih 2013).

The perceived barrier is defined as an Individual assessment of the barriers encountered to performing the recommended health behaviors, such as financial, physical, and psychosocial barriers. Perceived barriers have an important role in determining a person's behavior (Ismayadi, Adawiyah, and Aji 2021). Perceived severity is the individual's belief that if they have a disease, there will be severe consequences (disability and illness)(Saputra *et al.*, 2021). Perceived severity arises because of an evaluation of activities including clinical and medical consequences so it is

necessary to take preventive measures (Fitriani *et al.*, 2022). However, the results of this study show that there is no correlation between perceived severity and perceived barrier to maternal eating behavior. In general, the benefits of action are more decisive than the barriers. When individuals feel the aspect of great benefit despite having many barriers, then they will tend to continue the behavior (Ismayadi, Adawiyah, and Aji 2021).

4. CONCLUSION

This study concludes that the greater perceived susceptibility and perceived benefits will influence postpartum mothers to have healthy eating behavior. In addition, some postpartum mothers in Jember still have unhealthy eating behavior. There is a need for intervention from health workers related to providing information about the benefits of nutrition and how to prevent complications during the puerperium. We also recommend increasing nutrition education as well as collaboration with other sectors.

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