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The Factors Influencing Fatigue of Postpartum Mothers

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Abstract

Background: Postpartum mothers are likely to experience physical and psychological changes. A new role as a parent provides new tasks for mothers in baby care. Most postpartum mothers experience fatigue after labor. Postpartum fatigue is affected by the baby and family. This study aims to identify factors associated with postpartum fatigue.

Method: A cross-sectional study was designed. The sample in this research was 102 postpartum mothers who lived with her family in Bantul Yogyakarta. They were taken by using simple random sampling. The data were collected through the Postpartum Fatigue Scale (PFS), infant characteristic questionnaire (ICQ), and social support questionnaire. Factors associated with postpartum fatigue were analyzed using multiple logistic regressions.

Results: Most of the respondents had a moderate level of fatigue (48%). Social support was found significant as the determinant factor of postpartum mother (AOR=4,38, 95% CI 1,709 – 11,256, $p=0,002$).

Conclusion: Respondents with a low social support level showed a significantly higher level of postpartum fatigue than respondents with good social support. It is essential to assist the family in helping mothers in infant care and postpartum care in the postpartum period. The factor associated with postpartum fatigue included infant temperament and family income.

Keywords: postpartum, postpartum fatigue, risk factors

INTRODUCTION

Postpartum mothers experience fatigue in the postpartum period. The data showed that 88,5% of postpartum mothers have fatigue (Kılıç et al., 2015), and 60% of postpartum mothers in Yogyakarta experience fatigue (Saragih et al., 2015). Fatigue is a decreased capacity for mental health and physical due to an imbalance in the utilization and restoration of resources needed to perform an activity (Aaronson et al., 1999). Postpartum fatigue begins after childbirth. The level of postpartum fatigue decreased with a day of postpartum; it is highest in the first month after childbirth and decreases along with the age of the baby (Henderson et al., 2019; lwata et al., 2018). Postpartum fatigue may be a result of the new role

of the mother. Postpartum mothers are reported to have frequent nighttime awakenings and a decrease in sleep efficiency (Wilson, Wynter, et al., 2019). The night-time sleep duration of postpartum mothers was 5 hours, and 48,5% had dissatisfied with sleep quality (lwata et al., 2019). The postpartum with sleep disturbance influenced postpartum fatigue (Henderson et al., 2019).

The fatigue that occurs in postpartum mothers is influenced by various factors. A study by Kusumasari (2018) revealed that primiparous mothers experience higher fatigue than multiparous, besides social support, which also influences the incidence of fatigue in postpartum mothers (Yesilcinar et al., 2017). Mothers with

partners in postnatal care include changing nappies, supporting feeding, helping when the baby cried, bathing, and playing with the baby. All of those aspects were mild fatigue in 1 month postpartum ([Henderson et al., 2019](#)). Social support for infant care and house chores may influence postpartum fatigue. [Chen & Schmidt \(2015\)](#) stated that fatigue is related to the breastfeeding process and the baby's temperament. Mothers who have fussy babies are likely to experience fatigue. A baby with a large dose of crying can influence parents ([Zeifman & St James-Roberts, 2017](#)).

Postpartum fatigue can lead to serious health problems for the mother and her baby. It can affect the mother's physical, psychological, and mental health ([Badr & Zauszniewski, 2017](#)). [Khatun et al. \(2018\)](#) stated that mothers who experience fatigue have a decrease in meeting their babies' needs and responsibilities toward other family members. The postpartum mother with fatigue becomes irritable, decreased ability to care for babies, and satisfaction in their role as mothers ([Giallo et al., 2015](#)). Untreated postpartum fatigue can increase the incidence of postpartum depression ([Wilson, Lee, et al., 2019](#)) and affect breastfeeding self-efficacy ([Fata & Atan, 2018](#)). Therefore, this study aims to determine the prevalence and factors related to postpartum fatigue.

METHODS

This study used a cross-sectional design. The samples' inclusion criteria of this study were 1 – 6 weeks postpartum mothers, healthy, living with husband, and gave birth to a healthy infant. The sample of this study was 102 samples recruited by purposive sampling. The samples were taken around the area of Primary health care Kasihan 1 Bantul. This study used a demographic questionnaire developed by the researcher to collect the characteristics of postpartum mothers, including age, parity, method of labor, feeding, and economic status. The postpartum fatigue used the Indonesian version of the postpartum fatigue scale (PFS) ([Saragih et al., 2015](#)), consisting of 10 question items in the form of a Likert scale from 1 - 4. This questionnaire contained six questions related to mental symptoms and four questions about physical symptoms regarding the intensity of postpartum. The possible score ranged from 10 to 40 with three categories; namely, a total score of 10 – 14 was mild fatigue, 15 – 20 was moderate fatigue,

and 21 – 40 was severe fatigue ([Milligan et al., 1997](#)). Infant temperament was measured using the Indonesian version of the Infant Characteristic Questionnaire (ICQ) ([Astuti et al., 2017](#)) with six questions with a 7 Likert scale. The possible score was 6 to 42; namely, a total score of < 21 was 'not difficult temperament', and ≥ 21 was 'difficult temperament' ([Bates et al., 1979](#)). This instrument was valid and reliable (Cronbach's alpha 0,851) ([Astuti et al., 2017](#)). The social support measurement used a questionnaire developed by the researcher. This questionnaire had four components: emotional support, appreciation support, instrumental support, and information support. The questionnaire had 32 questions and grades using a 4-point scale with a Likert scale. The total score was 32 – 128, and participants were grouped as "low social support" (32 – 64 point), "intermediate social support" (65 – 96 point), and "high social support" (97 - 128). This questionnaire was a validity and reliability test with Cronbach alpha 0,92. This research obtained approval from the Universitas Aisyiyah Yogyakarta Ethics Commission with the number 1417/KEP-UNISA/I/2020. All participants had written consent in the informed consent. Data analysis used chi-square and multiple logistic regression.

RESULTS

The total of postpartum mothers who participated in this study was 102. The result of the study showed that most of the postpartum age characteristic was 20 – 34 years old which was 80,4%. Most of the postpartum mothers were vaginal birth, with a total of 84,3%. 64,7% of them had a family income of more than Rp1.800.000 rupiah. More than half of the participants in this research were multipara (64,7%). Almost all postpartum mothers in this study were given breast only for the baby. 74,5% of postpartum mothers in this research had a baby with a difficult temperament. The result of analysis with chi-square showed that postpartum mothers correlated with family income ($p=0,016$), infant temperament ($p=0,005$), and social support ($p=0,000$) (Table 1).

This study showed that 55 postpartum mothers within 20 – 35 years old had postpartum fatigue. 9% of the postpartum mother with a family income of more than one million eight hundred thousand had fatigue. The postpartum mother that breastfed only to her baby had fatigue (94,1%). Moreover, the 57

postpartum mothers with vaginal birth in this research had fatigue. The postpartum mothers with a not-difficult infant temperament had fatigue (57). 49 postpartum mothers in this study with high social support have fatigue (Table 1). This study showed that 48% of the postpartum mothers had a moderate fatigue scale (Table 2).

The result from logistic regression analysis showed social support as the determinant for postpartum fatigue with the Adjusted Odds Ratio of 4.38 and 95% CI (1.709 – 11.256). The interpretation of the AOR value was that postpartum mothers with low social support had a risk of 4.38 for postpartum fatigue (Table 3).

DISCUSSIONS

Table 1 reported that most of the postpartum mothers' age is 20 – 35 years old. It confirmed the previous study showing that the risky age of maternal to childbirth ranged from 20 – 30 years old ([Bellieni, 2016](#)). When women are pregnant over 40 years old, they are likely to increase their risk of preeclampsia ([Having a Baby After Age 35, n.d.](#)). Therefore, there is a statistically significant association between postpartum fatigue and family income, infant temperament, and social support. It is correlated with other findings that individual, couple, and community-level interventions in the case to give enlisting support might be valuable components for reducing the complications after birth, such as postpartum fatigue ([Gudayu & Araya, 2019](#)).

This study showed that 48% of the postpartum mothers had a moderate fatigue scale. It aligns with another study that postpartum mothers have postpartum fatigue ([Giallo et al., 2015](#); [Khatun et al., 2018](#); [Kılıç et al., 2015](#); [Saragih et al., 2015](#)). Postpartum mothers have fatigue in the first six months, and the level of fatigue will decrease along with the increase of the baby's age ([Iwata et al., 2018](#)). Research by [Henderson et al. \(2019\)](#) showed that the level of postpartum mothers was highest on day one after delivery. Fatigue occurs due to change in new roles; mothers frequently wake up at night at the first two months of postpartum. They had a sleep duration of 6,29 hours with a mean of 2 – ½ sleep episodes and under 1-hour sleep during

the day ([Creti et al., 2017](#)). Postpartum mothers often wake up at night to carry out new activities. Mothers wake up within an average of 3 times at night. During maternal nocturnal awakening, they carry out infant feeding (49%), general infant care (18,5), and infant diaper changing (12%) ([Insana et al., 2014](#)).

On the contrary, this research showed that the association between age and postpartum fatigue was negative. Although maternal age had not been previously recognized as one of the risk factors for postpartum fatigue ([Henderson et al., 2019](#); [Molina-García et al., 2019](#)), older women are more likely to be at risk for postpartum fatigue because they may have more difficulties or take longer to recover from pregnancy and delivery ([Badr & Zauszniewski, 2017](#)). The postpartum mother with age more than 35-year-old experience more severe fatigue ([Senol et al., 2019](#)).

This study showed that mothers aged less than 20 years had mild fatigue because the mother obtained good family support. Mothers with a good partner and family support for six weeks postpartum can reduce postpartum fatigue ([Huang et al., 2013](#)). The research by [Henderson et al. \(2019\)](#) strengthened that low education and low socioeconomic status were previously considered more vital risk factors, as described in our findings. Moreover, this research also showed that parity, feeding method, birth method, and postpartum fatigue were not statistically significant factors (Table 1). In this case, Henderson's research is not in line with this study that multiparous women were at a significantly reduced risk of postpartum fatigue. This research has not reported associations between mixed feeding and postpartum fatigue ([Henderson et al., 2019](#)).

This study is in line with other research ([Iwata et al., 2018](#); [Yesilcinar et al., 2017](#)), showing that social support satisfaction had significance with postpartum fatigue. The social support for postpartum mothers includes emotional, informational, instrumental aspects, and appreciation. The social support that came from partners, family, spouse, and friends could increase the mother's skill in baby caring ([Erbaba & Pinar, 2020](#)). Instrumental support like postnatal care from a partner decreased postpartum fatigue. Thus,

the women with high social support had a lower risk of postpartum fatigue ([Henderson et al., 2019](#)). Moreover, the financial support was highly significant of social support ([Aytac & Yazici, 2020](#)). The postpartum mother believes that support should be provided without asking. They stated that instrumental support is essential to their physical and emotional recovery ([Negron et al., 2013](#)).

CONCLUSIONS

The postpartum mothers in this study had a moderate level of postpartum fatigue (48%). Factors affecting postpartum fatigue included family income, infant temperament, and social support. Health professionals should provide education about infant temperament and involve the family in infant care in the early postpartum period.

AUTHOR CONTRIBUTION

YA contributed to the conception of the work, analysis, and interpretation of the data, revising the draft, approving the final version of the manuscript, and agreed for all aspects of the work.

NAI contributed to the revision of the draft manuscript and approval of the manuscript before submission.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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REFERENCES

- Aaronson, L. S., Teel, C. S., Cassmeyer, V., Neuberger, G. B., Pallikkathayil, L., Pierce, J., Press, A. N., Williams, P. D., & Wingate, A. (1999). Defining and Measuring Fatigue. *Image: The Journal of Nursing Scholarship*, 31(1), 45–50. <https://doi.org/10.1111/j.1547-5069.1999.tb00420.x>
- Astuti, Y., Rachmawati, I. N., & Rahma, H. (2017). The Correlation Between Infant

Temperament and Sleep Quality of Postpartum Mother in Primary Health Care Prambanan and Jogonalan Klaten Indonesia. *Advanced Science Letters*, 23(12), 12571–12574.

<https://doi.org/10.1166/asl.2017.10819>

Aytac, S. H., & Yazici, S. (2020). *The Effect of Social Support on Pregnancy and Postpartum Depression*. 13(1), 746.

Badr, H. A., & Zauszniewski, J. A. (2017). Meta-analysis of the predictive factors of postpartum fatigue. *Applied Nursing Research*, 36, 122–127.

<https://doi.org/10.1016/j.apnr.2017.06.010>

Bakker, M., van der Beek, A. J., Hendriksen, I. J. M., Bruinvels, D. J., & van Poppel, M. N. M. (2014). Predictive factors of postpartum fatigue: A prospective cohort study among working women. *Journal of Psychosomatic Research*, 77(5), 385–390.

<https://doi.org/10.1016/j.jpsychores.2014.08.013>

Bates, J. E., Freeland, C. A. B., & Lounsbury, M. L. (1979). Measurement of Infant Difficultness. *Child Development*, 50(3), 794–803. JSTOR.

<https://doi.org/10.2307/1128946>

Bellieni, C. (2016). The Best Age for Pregnancy and Undue Pressures. *Journal of Family & Reproductive Health*, 10(3), 104–107.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5241353/>

Chen, X., & Schmidt, L. (2015). Temperament and Personality. In *Social-emotional and personality development. Handbook of child psychology and developmental science* (Vol. 3, pp. 152–200).

<https://doi.org/10.1002/9781118963418.childpsy305>

Creti, L., Libman, E., Rizzo, D., Fichten, C. S., Bailes, S., Tran, D.-L., & Zekowitz, P. (2017). Sleep in the Postpartum: Characteristics of First-Time, Healthy Mothers. *Sleep Disorders*, 2017, 1–10.

<https://doi.org/10.1155/2017/8520358>

Erbaba, H., & Pinar, G. (2020). Association of perceived social support and maternal adaptation with postpartum depression in mothers of infants hospitalized in neonatal

- intensive care units. *Journal of Neonatal Nursing*.
<https://doi.org/10.1016/j.inn.2020.11.005>
- Fata, S., & Atan, S. U. (2018). The relationship between fatigue and breastfeeding self-efficacy. *Nigerian Journal of Clinical Practice*, 21(11), 1408.
<https://www.nicponline.com/text.asp?2018/21/11/1408/245182>
- Giallo, R., Seymour, M., Dunning, M., Cooklin, A., Loutzenhiser, L., & McAuslan, P. (2015). Factors associated with the course of maternal fatigue across the early postpartum period. *Journal of Reproductive and Infant Psychology*, 33(5), 528–544.
<https://doi.org/10.1080/02646838.2015.1021769>
- Gudayu, T. W., & Araya, B. M. (2019). Outcomes among Mothers Who Gave Birth in the Health Facility: Does Birth Preparedness and Complication Readiness Have a Role? *Obstetrics and Gynecology International*, 2019, 1–6.
<https://doi.org/10.1155/2019/5147853>
- Having a Baby After Age 35: How Aging Affects Fertility and Pregnancy*. (n.d.). Retrieved April 16, 2021, from
<https://www.acog.org/en/womens-health/faqs/having-a-baby-after-age-35-how-aging-affects-fertility-and-pregnancy>
- Henderson, J., Alderdice, F., & Redshaw, M. (2019). Factors associated with maternal postpartum fatigue: An observational study. *BMJ Open*, 9(7), e025927.
<http://dx.doi.org/10.1136/bmjopen-2018-025927>
- Huang, I.-C., Anderson, M., Gandhi, P., Tuli, S., Krull, K., Lai, J.-S., et al. (2013). The Relationships Between Fatigue, Quality of Life, and Family Impact Among Children With Special Health Care Needs. *Journal of Pediatric Psychology*, 38(7), 722–731.
<https://doi.org/10.1093/jpepsy/jst016>
- Insana, S. P., Garfield, C. F., & Montgomery-Downs, H. E. (2014). A Mixed-Method Examination of Maternal and Paternal Nocturnal Caregiving. *Journal of Pediatric Health Care*, 28(4), 313–321.
<https://doi.org/10.1016/j.pedhc.2013.07.016>
- Iwata, H., Mori, E., Sakajo, A., Aoki, K., Maehara, K., & Tamakoshi, K. (2018). Course of maternal fatigue and its associated factors during the first 6 months postpartum: A prospective cohort study. *Nursing Open*, 5(2), 186–196.
<https://doi.org/10.1002/nop2.130>
- Iwata, S., Kinoshita, M., Fujita, F., Tsuda, K., Unno, M., Horinouchi, T., et al. (2019). Peripartum depression and infant care, sleep and growth. *Scientific Reports*, 9.
<https://doi.org/10.1038/s41598-019-46563-4>
- Khatun, F., Lee, T. W., Rani, E., Biswash, G., Raha, P., & Kim, S. (2018). The Relationships among Postpartum Fatigue, Depressive Mood, Self-care Agency, and Self-care Action of First-time Mothers in Bangladesh. *Korean Journal of Women Health Nursing*, 24(1), 49–57.
<https://doi.org/2018.24.1.49>
- Kim, M.-E., & Hur, M.-H. (2014). Sleep Quality, Fatigue, and Postpartum Depression of Mother at Six Months after Delivery. *Korean Journal of Women Health Nursing*, 20(4), 266.
<https://doi.org/10.4069/kjwhn.2014.20.4.266>
- Kılıç, M., Özorhan, E. Y., Apay, S., Çapık, A., Ağapınar, S., & Özkan, H. (2015). *Comparison of Fatigue Levels of Postpartum Women According to the Birth Method*. Undefined.
<http://www.internationaljournalofcaringsciences.org/docs/15-Original-Apay.pdf>
- Kusumasari, R. V. (2018). Kelelahan Postpartum Antara Ibu Primipara dan Multipara di Wilayah Kerja Puskesmas Piyungan Kabupaten Bantul: Comparative Study. *Health Sciences and Pharmacy Journal*, 2(1), 16.
<https://doi.org/10.32504/hspj.v2i1.23>
- Milligan, R. A., Parks, P. L., Kitzman, H., & Lenz, E. R. (1997). Measuring women's fatigue during the postpartum period. *Journal of Nursing Measurement*, 5(1), 3–16.
<https://pubmed.ncbi.nlm.nih.gov/9505466/>
- Molina-García, L., Hidalgo-Ruiz, M., Arredondo-López, B., Colomino-Ceprián, S., Delgado-Rodríguez, M., et al. (2019). Maternal Age and Pregnancy, Childbirth and the Puerperium: Obstetric Results. *Journal of*

- Clinical Medicine*, 8(5), 672.
<https://doi.org/10.3390/icm8050672>
- Negron, R., Martin, A., Almog, M., Balbierz, A., & Howell, E. A. (2013). Social Support During the Postpartum Period: Mothers' Views on Needs, Expectations, and Mobilization of Support. *Maternal and Child Health Journal*, 17(4), 616–623.
<https://doi.org/10.1007/s10995-012-1037-4>
- Saragih, B., Hapsari, E. D., & DW, S. (2015). Hubungan kelelahan dengan postpartum blues pada ibu postpartum pasca gempa di wilayah puskesmas Jetis Kabupaten Bantul [Universitas Gadjah Mada].
http://etd.repository.ugm.ac.id/home/detail_pencarian/86536
- Senol, D. K., Yurdakul, M., & Ozkan, S. A. (2019). The effect of maternal fatigue on breastfeeding. *Nigerian Journal of Clinical Practice*, 22(12), 1662.
https://doi.org/10.4103/njcp.njcp_576_18
- Wilson, N., Lee, J. J., & Bei, B. (2019). Postpartum fatigue and depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, 246, 224–233.
<https://doi.org/10.1016/j.jad.2018.12.032>
- Wilson, N., Wynter, K., Anderson, C., Rajaratnam, S. M. W., Fisher, J., & Bei, B. (2019). Postpartum fatigue, daytime sleepiness, and psychomotor vigilance are modifiable through a brief residential early parenting program. *Sleep Medicine*, 59, 33–41.
<https://doi.org/10.1016/j.sleep.2019.01.012>
- Yesilcinar, I., Yavan, T., Karasahin, K. E., & Yenen, M. C. (2017). The identification of the relationship between the perceived social support, fatigue levels and maternal attachment during the postpartum period. *The Journal of Maternal-Fetal & Neonatal Medicine*, 30(10), 1213–1220.
<https://doi.org/10.1080/14767058.2016.1209649>
- Zeifman, D. M., & St James-Roberts, I. (2017). Parenting the Crying Infant. *Current Opinion in Psychology*, 15, 149–154.
<https://doi.org/10.1016/j.copsy.2017.02.009>

Table 1. The Characteristics of the Respondents and factors influencing the postpartum fatigue

Variable	All n=102 (%)	Fatigue n=68 (%)	Non-Fatigue n=34 (%)	P-value
Age				
< 20 years	1(1)	0 (0)	1 (2,9)	0.362
20 – 35 years	82 (80.4)	55 (80,9)	27 (79,4)	
>35 years	19 (18.6)	13 (19,1)	6 (17,6)	
Family income				
< Rp1.800.000	36 (35.3)	30 (44,1)	6 (17,6)	0.016
≥ Rp1.800.000	66 (64.7)	38 (55,9)	28 (82,4)	
Parity				
Primipara	35 (34.3)	20 (29,4)	15 (44,1)	0.210
Multipara	67 (15.7)	48 (70,6)	19 (55,9)	
Feeding method				
Breastfeeding only	97 (95.1)	64 (94,1)	33 (97,1)	0.662
Combined	5 (4.9)	4 (5,9)	1 (2,9)	
Birth method				
Vaginal birth	86 (84.3)	57 (83,8)	29 (85,3)	1.000
Caesarean Section	16 (15.7)	11 (16,2)	5 (14,7)	
Infant Temperament				
Difficult	76 (74.5)	11 (16,2)	15 (44,1)	0.005
Not difficult	26 (25.5)	57 (83,8)	19 (55,9)	
Social support				
Intermediate	42 (41.2)	19 (27,9)	23 (67,6)	0.000
High	60 (58.8)	49 (72,1)	11 (32,4)	

Table 2. The prevalence of postpartum fatigue

Level of Fatigue	n	%
Mild	34	33.3%
Moderate	49	48.0%
Severe	19	18.6%

Table 3. Logistic regression analysis for selected factors for postpartum fatigue in Yogyakarta

Variable	OR (CI 95%)	P-value
Family income	0.364 (0.126 – 1.056)	0.063
Infant temperament	3.064 (1.073 – 8.750)	0.036
Social support	4.386 (1.709 – 11.256)	0.002