



Comparison of Maternal Self-efficacy and Infant Care Behavior Between Mothers with and Without Depression: A Case-Control Study

Fatemeh Karami¹ and Mojgan Mirghafourvand^{2, *}

¹Department of Midwifery, School of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran

²Social Determinants of Health Research Centre, Faculty of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran

*Corresponding author: Social Determinants of Health Research Center, Department of Midwifery, Tabriz University of Medical Sciences, Iran. Email: mirghafourvand@gmail.com

Received 2019 November 26; Revised 2020 November 14; Accepted 2021 August 10.

Abstract

Background: Postpartum depression (PPD) affects various dimensions of women's lives. The present study aimed to compare infant care behavior and maternal self-efficacy between depressed and non-depressed mothers.

Objectives: This case-control study was conducted among 80 (n = 40 per group) postpartum women.

Methods: A socio-demographic characteristics form, Edinburgh Postnatal Depression Scale (EPDS), Maternal Self-efficacy Questionnaire (MSQ), and Infant Care Behavior questionnaire were used for data collection. Independent *t*-test was run for data analysis. The mean score of maternal self-efficacy in the depressed group was 29.3 (3.6), and it was 33.0 (3.3) in the non-depressed group, which was significantly higher in the non-depressed group compared to the depressed group based on independent *t*-test results (adjusted mean difference: -3.7; 95% Confidence Interval: -2.2 to 5.3; $P < 0.001$).

Results: The mean score of infant care behavior was 72.2 (5.2) in the depressed group and 73.0 (9.0) in the non-depressed group, indicating no significant differences between the two groups according to independent *t*-test ($P = 0.627$).

Conclusions: Depressed women were less self-efficient; thus, given the central role of mothers, some strategies should be adopted to minimize mothers' postpartum physical and mental problems and promote their self-efficacy and infant care behaviors.

Keywords: Infant Care Behavior, Maternal Self-efficacy, Postpartum Depression

1. Background

Postpartum depression (PPD) is a kind of major depression with symptoms, including low mood, lack of pleasure, forgetfulness, irritability, sleep disorder, and poor performance, beginning five weeks postpartum (1, 2). Postpartum depression is a multifactorial disorder from different biological, psychological, and sociological aspects (3). It is dangerous for the mother and infant, and it can lead to infanticide (4), impaired growth and health of the baby (5), and even suicide (6). A meta-analysis study in Iran reported the average prevalence of PPD at 28.7% (7). Evidence shows that PPD has been a significant factor affecting maternal self-efficacy (8).

Self-efficacy is one of the significant factors in the successful transition of the mother to the maternal role (9). Maternal self-efficacy plays a major role in the mother's care skills and can lead to better adaptation to the situation (10). Moreover, infant care behaviors are those behaviors that the mother does to care for, rear, and improve the infant's health, such as meeting all the physical needs of

the infant, like feeding, clothing, and bathing, to ensure the baby's health (11).

2. Objectives

Given the consequences of depression and the significant role of the mother as a spouse and infant caregiver, we sought to perform this study to compare maternal self-efficacy and infant care behavior among depressed and non-depressed mothers.

3. Methods

This study was a part of a large case-control study with the code of ethics IR.TBZMED.REC.1398.218, and the results of other parts of the study have been published previously (12). This study was conducted from February 2019 to May 2019 among 80 postpartum women admitted to Tabriz health centers.

The inclusion and exclusion criteria were reported in the previous article (12). For the sampling, the researcher

attended Tabriz health centers and selected primiparous mothers or those with their second deliveries based on their health records. After calling them and giving brief description of the study and its significance, we invited the mothers to visit the relevant health centers on a specified date. After the mothers attended the centers, the researcher gave them more details about the study. If they were willing to participate and met the eligibility criteria, a written informed consent was obtained, and Edinburgh Postnatal Depression Scale (EPDS) was completed. According to obtained scores by the participants, the case and control groups were determined. The two groups were matched based on parity and delivery type. Moreover, other questionnaires, including a socio-demographic characteristics form Infant Care Behavior and Maternal Self-efficacy Questionnaire (MSQ), were completed.

Edinburgh Postnatal Depression Scale contains 10 multiple-choice questions, and each question is assigned a score of zero to three. The overall score ranges from 0 to 30. Obtaining a score of 12 or higher is a sign of possible depression. Montazeri et al. (2007) (13) validated the questionnaire in Iran. Maternal Self-efficacy Questionnaire has ten items, nine of which are related to maternal activities, and one is a general item. Each item has four options rated based on a Likert scale. The psychometric study of the questionnaire was conducted by Mirghafourvand et al. (2016) (14) in Iran. The Infant Care Behavior questionnaire was developed by Jamalivand et al. (15). It has 22 items and is scored based on a Likert scale ranging from always (score 4) to never (score 1), with scores ranging from 22 to 88. The validity and reliability of the questionnaire were confirmed.

The sample size was calculated at 38 participants in each group according to the study by Jamalivand et al. (15) using G-Power software. Data was analyzed in SPSS version 24. Independent *t*-test was used to compare maternal self-efficacy infant and care behavior scores in depressed and non-depressed mothers.

4. Results and Discussion

There were no significant differences in socio-demographic data between the case and control groups. The socio-demographic characteristics of the participants have been reported in another article (12).

Mean (SD) maternal self-efficacy score was 29.3 (3.6) in the depressed group and 33.0 (3.3) in the non-depressed, which was significantly higher in the non-depressed group compared to the depressed ($P < 0.001$). The mean score (SD) of infant care behavior was 72.2 (5.2) in the depressed group and 73.0 (9.0) in non-depressed, indicating no significant difference between the groups ($P = 0.627$; Table 1).

In the present study, compared to depressed mothers, maternal self-efficacy was higher in non-depressed mothers. The study by Yaman et al. (2011) showed that low maternal self-efficacy was associated with maternal stress and depression (16). The study by Abdollahi et al. (2014) (5). among 2 - 12 weeks postpartum mothers exhibited that the increase in maternal self-efficacy was associated with a reduced risk of PPD. A study has reported decreased self-efficacy, self-confidence, self-esteem, and sense of self-worth, and increased guilt were related to depression (17), which is consistent with the results of the present study.

In this study, no significant difference was observed between the two group in terms of infant care behavior. In a cross-sectional study, Fathi et al. (2015) showed that there were no significant relationships between PPD and infant care (18). In a longitudinal study by Teti and Gelfand (1991), the results showed that mothers with high self-efficacy were successful in caring for their infants despite having PPD (9). The findings of the above studies were consistent with the present results. Women with postpartum depression may feel obliged to provide physical care for their infants despite the experience of negative thoughts (19).

Among the strengths of the study was using validated postpartum screening tools. Among the limitations of the study was conducting it in urban areas; thus, it is recommended to replicate this study in rural regions.

Acknowledgments

This paper was part of a research grant approved by the Ethics Committee of Tabriz University of Medical Sciences. Hereby, we would like to thank all the participants in this project.

Footnotes

Authors' Contribution: MM conceptualized the idea for this study, assisted with interpreting the data, and analyzed the data. FK collected the data. MM supervised field data collection activities and revised the manuscript for proper intellectual content. FK prepared the first draft of the manuscript. All authors read and approved the final manuscript.

Conflict of Interests: The authors declare no conflicts of interest. Financial support was provided by the Deputy of Research of Tabriz University of Medical Sciences.

Ethical Approval: The study was approved under the code (IR.TBZMED.REC.1398.218) in the ethics committee of Tabriz University of Medical Sciences. Financial support was provided by the deputy of research of Tabriz University of Medical Sciences.

Funding/Support: Not declared by authors.

Table 1. Comparison of Maternal Self-efficacy and Infant Care Behaviors in the Study Groups

Variables	Depressed (N = 40) Mean (SD)	Non Depressed (N = 40) Mean (SD)	Mean Difference (95% Confidence Interval)	P-Value ^a
Maternal self-efficacy (score range: 10 to 40)	29.3 (3.6)	33.0 (3.3)	-3.7 (-5.3 to -2.2)	< 0.001
Infant care behaviors (score range: 22 to 88)	72.2 (5.2)	73.0 (9.0)	-0.8 (-4.1 to 2.5)	0.627

^a Independent t-test

References

- Association AP. *Diagnostic and statistical manual of mental disorders (DSM-5®)*. 5th ed. Washington DC: American Psychiatric Pub; 2013.
- Stuchbery M, Matthey S, Barnett B. Postnatal depression and social supports in Vietnamese, Arabic and Anglo-Celtic mothers. *Soc Psychiatry Psychiatr Epidemiol*. 1998;**33**(10):483-90. doi: [10.1007/s001270050083](https://doi.org/10.1007/s001270050083). [PubMed: [9780811](https://pubmed.ncbi.nlm.nih.gov/9780811/)].
- Klainin P, Arthur DG. Postpartum depression in Asian cultures: a literature review. *Int J Nurs Stud*. 2009;**46**(10):1355-73. doi: [10.1016/j.ijnurstu.2009.02.012](https://doi.org/10.1016/j.ijnurstu.2009.02.012). [PubMed: [19327773](https://pubmed.ncbi.nlm.nih.gov/19327773/)].
- Clare CA, Yeh J. Postpartum depression in special populations: a review. *Obstet Gynecol Surv*. 2012;**67**(5):313-23. doi: [10.1097/OGX.0b013e318259cb52](https://doi.org/10.1097/OGX.0b013e318259cb52). [PubMed: [22624779](https://pubmed.ncbi.nlm.nih.gov/22624779/)].
- Abdollahi F, Rezaei Abhari F, Zarghami M. Post-partum depression effect on child health and development. *Acta Med Iran*. 2017;**55**(2):109-14. [PubMed: [28282707](https://pubmed.ncbi.nlm.nih.gov/28282707/)].
- Comtois KA, Schiff MA, Grossman DC. Psychiatric risk factors associated with postpartum suicide attempt in Washington State, 1992-2001. *Am J Obstet Gynecol*. 2008;**199**(2):120 e1-5. doi: [10.1016/j.ajog.2008.02.011](https://doi.org/10.1016/j.ajog.2008.02.011). [PubMed: [18355781](https://pubmed.ncbi.nlm.nih.gov/18355781/)].
- Veisani Y, Delpisheh A, Sayehmiri K, Rezaeian S. Trends of postpartum depression in iran: a systematic review and meta-analysis. *Depress Res Treat*. 2013;**2013**:291029. doi: [10.1155/2013/291029](https://doi.org/10.1155/2013/291029). [PubMed: [23936640](https://pubmed.ncbi.nlm.nih.gov/23936640/)]. [PubMed Central: [PMC3722792](https://pubmed.ncbi.nlm.nih.gov/PMC3722792/)].
- Shorey S, Chan SW, Chong YS, He HG. Predictors of maternal parental self-efficacy among primiparas in the early postnatal period. *West J Nurs Res*. 2015;**37**(12):1604-22. doi: [10.1177/0193945914537724](https://doi.org/10.1177/0193945914537724). [PubMed: [24906360](https://pubmed.ncbi.nlm.nih.gov/24906360/)].
- Teti DM, Gelfand DM. Behavioral competence among mothers of infants in the first year: the mediational role of maternal self-efficacy. *Child Dev*. 1991;**62**(5):918-29. doi: [10.1111/j.1467-8624.1991.tb01580.x](https://doi.org/10.1111/j.1467-8624.1991.tb01580.x). [PubMed: [1756667](https://pubmed.ncbi.nlm.nih.gov/1756667/)].
- Barclay L, Everitt L, Rogan F, Schmied V, Wyllie A. Becoming a mother-an analysis of women's experience of early motherhood. *J Adv Nurs*. 1997;**25**(4):719-28. doi: [10.1046/j.1365-2648.1997.t014-1997025719.x](https://doi.org/10.1046/j.1365-2648.1997.t014-1997025719.x). [PubMed: [9104667](https://pubmed.ncbi.nlm.nih.gov/9104667/)].
- Noor NM, Aziz AA, Mostapa MR, Awang Z. Validation of the Malay version of the inventory of functional status after childbirth questionnaire. *Biomed Res Int*. 2015;**2015**:972728. doi: [10.1155/2015/972728](https://doi.org/10.1155/2015/972728). [PubMed: [25667932](https://pubmed.ncbi.nlm.nih.gov/25667932/)]. [PubMed Central: [PMC4312566](https://pubmed.ncbi.nlm.nih.gov/PMC4312566/)].
- Karami Chamgurdani F, Barkin JL, Curry CL, Mirghafourvand M. Comparison of maternal functioning between Iranian mothers with and without depressive symptoms: A case-control study. *Int J Environ Res Public Health*. 2020;**17**(10). doi: [10.3390/ijerph17103350](https://doi.org/10.3390/ijerph17103350). [PubMed: [32408556](https://pubmed.ncbi.nlm.nih.gov/32408556/)]. [PubMed Central: [PMC7277626](https://pubmed.ncbi.nlm.nih.gov/PMC7277626/)].
- Montazeri A, Torkan B, Omidvari S. The Edinburgh Postnatal Depression Scale (EPDS): translation and validation study of the Iranian version. *BMC Psychiatry*. 2007;**7**:11. doi: [10.1186/1471-244X-7-11](https://doi.org/10.1186/1471-244X-7-11). [PubMed: [17408479](https://pubmed.ncbi.nlm.nih.gov/17408479/)]. [PubMed Central: [PMC1854900](https://pubmed.ncbi.nlm.nih.gov/PMC1854900/)].
- Mirghafourvand M, Mohammad-Alizadeh-Charandabi S, Asghari Jafarabadi M, Fathi F. Psychometric properties of maternal self-efficacy questionnaire in a population of Iranian mothers. *J Child Fam Stud*. 2016;**25**(10):2966-71. doi: [10.1007/s10826-016-0470-1](https://doi.org/10.1007/s10826-016-0470-1).
- Jamalivand S, Mirghafourvand M, Mohammad-Alizadeh Charandabi S. Comparison of the effects of educational software and training booklet on maternal self-efficacy and infant care behavior in Iranian mothers: A randomized controlled trial. *Int J Pediatr*. 2017;**5**(10):5923-34. doi: [10.22038/ijp.2017.25500.2165](https://doi.org/10.22038/ijp.2017.25500.2165).
- Yaman A, Mesman J, van Ijzendoorn MH, Bakermans-Kranenburg MJ. Perceived family stress, parenting efficacy, and child externalizing behaviors in second-generation immigrant mothers. *Soc Psychiatry Psychiatr Epidemiol*. 2010;**45**(4):505-12. doi: [10.1007/s00127-009-0097-2](https://doi.org/10.1007/s00127-009-0097-2). [PubMed: [19609475](https://pubmed.ncbi.nlm.nih.gov/19609475/)].
- Association AP. *Diagnostic criteria from DSM-IV-tr*. American Psychiatric Pub; 2000.
- Fathi F, Mohammad-Alizadeh-Charandabi S, Mirghafourvand M. Maternal self-efficacy, postpartum depression, and their relationship with functional status in Iranian mothers. *Women Health*. 2018;**58**(2):188-203. doi: [10.1080/03630242.2017.1292340](https://doi.org/10.1080/03630242.2017.1292340). [PubMed: [28277156](https://pubmed.ncbi.nlm.nih.gov/28277156/)].
- Posmontier B. Functional status outcomes in mothers with and without postpartum depression. *J Midwifery Womens Health*. 2008;**53**(4):310-8. doi: [10.1016/j.jmwh.2008.02.016](https://doi.org/10.1016/j.jmwh.2008.02.016). [PubMed: [18586183](https://pubmed.ncbi.nlm.nih.gov/18586183/)]. [PubMed Central: [PMC2535808](https://pubmed.ncbi.nlm.nih.gov/PMC2535808/)].