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Association Between Maternal Sense of Competence and Self-Efficacy in Primiparous Women During Postpartum Period

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Abstract

Background: When women's' lives enter a new phase after childbirth, they need to adapt to it in order to accept their motherhood role. Maternal competency depends on the mother's perception of her maternal role and the ability to attain and fulfill it. The aim of this study was to examine the association between maternal sense of competence and self-efficacy in the postpartum period.
Methods: In this cross-sectional study, 305 Iranian women were selected randomly via a two-stage cluster sampling method at the end of the 4th postpartum month. Data were collected from August 2016 to January 2017 and by using the socio-demographic characteristics questionnaire, parenting sense of competence scale, and maternal self-efficacy questionnaire. The statistical tests including Pearson correlation, Independent sample t-test, One-way ANOVA, and General linear model were used for data analysis.
Results: The mean (SD) score of self-efficacy was 33.8 (5.1) and mean (SD) score of maternal sense of competence was 79.2 (13.8). Between maternal competency and self-efficacy a significantly positive correlation (P = 0.000, r = 0.364) was found. According to the adjusted general linear model, mother's age, income, spouse's occupation, type of pregnancy, and self-efficacy have statistically significant relationships with the maternal sense of competence and explains 34.9% of the variation in the maternal sense of competence score.
Conclusions: The findings of the present study showed that increased postpartum self-efficacy is associated with improved maternal competency, which requires health providers to evaluate postpartum maternal self-efficacy and make the necessary interventions if it is low.

Keywords: Postpartum Period, Self-Efficacy, Mental Competency, Women

1. Background

When entering a new phase of women's lives after childbirth, they need to adapt to it in order to accept their motherhood role (1). Maternal self-efficacy in newborn care skills is important to facilitate compliance with motherhood and maternal experience (2).

Maternal self-efficacy refers to the mother's belief in her own ability to be an effective mother (3). Self-efficacy has been shown to directly affect the quality of care provided to the newborn (4). If a mother is not ready to accept the motherhood role or have doubts about the effectiveness of her parental role, the management is challenged and this feeling of inadequacy combined with the lack of clear understanding of herself and inability to create mechanisms to cope with these challenges may lead to postpartum depression (5).

As a concept for perceiving the behavioral determinants of the maternal role, maternal competence is defined as the ability to manage maternal requirements and depends on the mother's perception of her maternal role and the ability to attain and fulfill it (6). Women with a strong maternal role sense of competence and satisfaction present secure attachment styles and also responsible and sensitive parenting behaviors, which facilitate the newborn's growth and development. In addition, several studies show that self-efficacy can be effectively used to predict women's health in the postpartum period (7-9).

The results of a review study by Jones et al., in America, showed that parental self-efficacy is associated with the sense of competence (10). In contrast, Coleman et al., in America, reported no significant relationship between self-efficacy and parental competence (11).

According to the search conducted by the researcher, no study has so far been conducted in Iran regarding the as-

sociation between maternal competence and self-efficacy. However, few studies have assessed the maternal competence and self-efficacy separately in Iran, and these studies were mostly done in the first 6 weeks of postpartum. The 4th month after childbirth is the time that the maternal identity development is achieved (12, 13). In the achievement of maternal identity, the mother establish intimate knowledge of her infant such that she feels competent and confident in her mothering activities and feels love for her infant (14).

Given conflicting results in previous studies and the evidence that shows mothers' psychosocial health has a significant effect on infants' physical and emotional growth and nutrition (15, 16), and self-efficacy and maternal competence are important in performing motherhood role (10). Therefore, the present study aimed to determine the correlation between self-efficacy and the sense of maternal competence in primiparous Iranian women after childbirth.

2. Methods

2.1. Study Design and Participants

This cross-sectional study was performed on 305 primiparous women at 4 months postpartum who were referred to health centers of Tabriz.

The inclusion criteria included primiparous women, age 18 - 35 years, singleton pregnancy, term birth (37 - 42 weeks), and secondary school or higher education. The exclusion criteria included hospitalization of the newborn due to illness in the postpartum period, abnormalities in the newborn, and death of the newborn.

The sample size was calculated according to the formula of

$$n = \frac{\left(Z_{1-\alpha/2}\right)^2 \times SD^2}{d^2} \quad (1)$$

It was calculated as 138 based on the study conducted by Jamalivand et al. (17) on self-efficacy by considering SD = 3.0, d (Precision) = 0.5 and α = 0.05. Due to cluster sampling, and considering the design effect of 2.0, a 10% dropout rate was approximately calculated equal with 305.

2.2. Sampling

Sampling was conducted after obtaining approval from the ethics committee of research and technology deputy of Tabriz University of Medical Sciences under the number IR.TBZMED.REC.1395.828 from August 2016 to January 2017. Two-stage cluster sampling was performed for selecting women after childbirth from the healthcare centers. These healthcare centers were public, government, and first-level referral facilities and had the highest number of postpartum women in Tabriz, Iran. At first, we randomly selected one-third of all health centers and bases in Tabriz, Iran in a simple random method and by using the website www.random.org. A list of all primiparous women in the 4th month after childbirth, in the selected centers, was then obtained and highlighted by row numbers in the list. The number of eligible candidates in the selected health centers varied between 8 and 28, giving rise to a total of 378. Then, given the main sample size as 305, and based on the list (the number of women covered in each center/base), a proper sample size was proportionally calculated for each health center or base that was between 5 and 18. Then, samples were randomly selected from the list obtained. The researcher then called the selected women and provided them with explanations about the study and also assessed them according to the inclusion and exclusion criteria. Those women having eligible criteria were invited to participate in the study. In the meeting, the purpose and procedures of the study were clearly explained to the participants then, they were assessed voluntarily and included in the study after signing their written informed consent.

2.3. Data Collection

Data were collected using demographic, maternal sense of competence, and maternal self-efficacy questionnaires.

2.4. Sociodemographic Characteristics

The researcher-designed socio-demographic questionnaire included items on maternal age, type of delivery, spouse and mother's education, spouse and mother's occupation, income (participants stated their perception of their sufficiency of income for expenses), sex of the newborn, type pregnancy, and marital satisfaction.

2.5. Maternal Sense of Competence

The data associated with the maternal sense of competence were collected using the original parenting sense of competence scale (Gibaud-Wallston) developed to evaluate parents' perception of their ability of managing parenting requirements (18). The questionnaire contains 16 self-reported positive and negative items. Each item is scored using a 6-point Likert scale from strongly agree to strongly disagree. The total score ranges from 16 to 96, which higher scores indicate higher maternal competency levels. This scale has 2 subscales, namely knowledge/skill and valuing/comfort. In combination, these subscales measure the perceived parental functioning (19).

2.6. Self-Efficacy

Data on self-efficacy were collected using the maternal self-efficacy questionnaire (MSQ). The questionnaire was initially designed by Teti and Gelfand and contains 10 self-reported items. Each item is scored using a 4-point Likert scale (score 1 much worse, 2 somewhat worse, 3 as good, 4 better than others). The total score ranges from 10 to 40, which higher scores indicate higher maternal self-efficacy (20).

In this study, the reliability of maternal competency and self-efficacy questionnaires was confirmed by determining the internal consistency (Cronbach's alpha = 0.70 and 0.90, respectively) by conducting the test on 20 mothers in the postpartum period.

2.7. Statistical Analysis

The socio-demographic characteristic, self-efficacy, and maternal sense competence were described using descriptive analysis. The Pearson test was used to investigate the association between maternal competency and self-efficacy. Furthermore, the independent t-test and one-way ANOVA were used to determine the relationship between socio-demographic characteristics with maternal sense competence. Then, independent variables, with $P < 0.05$ on bivariate tests, were inserted into the general linear model.

3. Results

The mean age of the participants was 23.8 (4.0) years and half of the women (55.1%) were aged less than 25 years. Table 1 represents demographic characteristics of the subjects.

3.1. Self-Efficacy and Maternal Sense of Competence

The mean (SD = Standard Deviation) score of self-efficacy was 33.8 (5.1), with an achievable score range from 10 to 40. The mean (SD) score of maternal sense of competence was 79.2 (13.8), with achievable scores range from 16 to 96. There was a significantly positive correlation between maternal sense of competence and self-efficacy ($r = 0.364$, $P = 0.000$). Moreover, self-efficacy had a statistically significant correlation with knowledge/skill ($r = 0.472$, $P = 0.000$) and valuing/comfort ($r = 0.255$, $P = 0.000$) subscales (Table 2).

3.2. Association Between Socio-Demographic Characteristics and Maternal Sense of Competence

Based on the independent t-test and the one-way ANOVA, the maternal sense of competence score was significantly related to the mother's age ($P = 0.002$), mother and spouse's education level ($P < 0.001$), mother occupation ($P = 0.002$), spouse's occupation ($P < 0.001$), type of pregnancy ($P < 0.001$), income ($P < 0.001$), having help for childcare ($P < 0.001$), mother interest to infant ($P < 0.001$), father interest to infant ($P = 0.002$), and marital satisfaction ($P < 0.001$) (Table 1).

3.3. Predictors of Maternal Sense of Competence

The variables of mother's age, mother and spouse's education level, mother and spouse's occupation, type of pregnancy, income, having help for childcare, mother and father interest to infant and marital satisfaction that had $P < 0.05$, and the score of self-efficacy were inserted in the general linear model. Based on the adjusted general linear model, the variables of mother's age, income, spouse's occupation, type of pregnancy and self-efficacy remained in the model and predicted 34.9% of the variation in the overall score of maternal sense of competence (Table 3).

4. Discussion

The present study was conducted to determine the relationship between maternal sense of competence and self-efficacy in primiparous women in the postpartum period. The results showed that self-efficacy is positively related to women's sense of competence in the postpartum period as their sense of competence enhanced with the increase in self-efficacy in women.

Based on the results of the present study, the mean total score of maternal sense of competence was moderate to high. The present study found the mean score of maternal sense of competence in the knowledge/skill subscale to be higher than that of the valuing/comfort subscale, which indicates that the value given by primiparous women to their maternal role efficacy is higher than the value given to satisfaction with their role. Gilmore et al., who conducted a study on evaluating postpartum parental competence in Australia, found the highest score to be associated with maternal competence in the knowledge/skill subscale (19), which is consistent with the present study, but inconsistent with the study conducted in Nepal by Shrooti et al., who reported the highest mean score of maternal competence in the valuing/comfort subscale (21). This discrepancy of results might have been caused by cultural differences between the participants of studies.

The results of self-efficacy obtained from the calculation of the percentage of women who had minimum and maximum scores showed that 23 primiparous women (5.7%), in the 4th month after childbirth, obtained the maximum score of self-efficacy and all mothers obtained a higher score than the minimum. This is consistent with

Table 2. Association Between Maternal Competency and Its Subscales with Self-Efficacy in Primiparous Women in the Postpartum Period (n = 305)

Variables	Mean (SD)[a]	Scores Gained	Achievable Score	Correlation with Self-Efficacy r (P)[b]
Maternal sense of competency	79.2 (13.8)	51 - 96	16 - 96	0.364 (0.000)
Skill/knowledge subscale	41.7 (5.7)	27 - 48	8 - 48	0.472 (0.000)
Valuing/comfort subscale	37.4 (9.2)	14 - 48	8 - 48	0.255 (0.000)
Self-efficacy	33.8 (5.1)	17 - 40	10 - 40	-

[a] Mean (Standard Deviation).
[b] Pearson correlation.

Table 3. Factors Related with Maternal Sense of Competency of Primiparous Women in Postpartum Period According to General Linear Model (n = 305)[a]

Variables	β (CI 95%)[b]	P Value
Self-efficacy	0.01 (0.2 to 0.8)	0.002
Mother's age (reference: age $\geq$ 30)		
< 25	6.5 (1.8 to 11.2)	0.007
25 - 29	4.5 (-0.2 to 9.2)	0.063
Spouse's occupation (reference: private sector)		
Worker or unemployed	5.8 (2.5 to 9.2)	0.001
Clerk	2.8 (-0.7 to 6.3)	0.114
Income (reference: not enough)		
Completely enough	15.9 (10.2 to 21.8)	0.000
Somewhat enough	6.2 (1.1 to 11.4)	0.017
Pregnancy type (reference: unwanted)		
Wanted	6.2 (1.9 to 10.5)	0.005
Having help for childcare (reference: no)		
Yes	2.0 (-0.8 to 4.8)	0.160
Marital satisfaction (reference: not at all)		
Completely	-0.6 (-8.2 to 7.0)	0.880
Somewhat	-2.9 (-10.0 to 4.1)	0.414

[a] Adjusted R^2 = 34.9%.
[b] Confidence interval 95%.

the study results of Mirghafourvand et al., who conducted a study in Iran on 437 primiparous women 8 - 10 weeks after childbirth to perform a psychometric evaluation of maternal self-efficacy questionnaire (22).

The results of the present study on the relationship between self-efficacy and the sense of competence are consistent with the review study of Jones et al., who evaluated the studies on parental self-efficacy after childbirth. They observed a relationship between parental self-efficacy and the sense of competence, satisfaction, and parental behaviors (10). Ohan et al., studied 110 couples after childbirth aiming to assess the sense of competence and the relationship between family characteristics and parental competence and showed that self-efficacy affects parental competence (23). Teti et al., examined 48 mothers who had a clinical diagnosis of postpartum depression and 38 non-depressed mothers from 3 to 12 months after childbirth and showed that self-efficacy is significantly related to maternal competence (20). The results of these 2 studies are consistent with the present study. However, the study results of Coleman et al., on the evaluation of belief in the self-efficacy and parental competence, on 33 fathers and 35 mothers with 19 - 25-month old children in America, are inconsistent with the results of the present study as they did not observe a significant relationship between self-efficacy and parental competence (11). The conflicting results of

these studies may be due to a smaller sample size in the mentioned study, the time difference in the outcome evaluation, and the tools used.

Other results of this study also indicated a significant relationship between the variables of mother's age, spouse's occupation, income status, the type of pregnancy, and the sense of competence in women after childbirth. Tarkka's study on 248 primiparous women in 8 months after childbirth showed that young women with wanted pregnancy and support networks have a better sense of competence in their motherhood role (24). The results of this study are consistent with the present study. The study of Ngai et al., during pregnancy, 6 weeks and 6 months postpartum showed that there is a relationship between mothers' age and the sense of competence and the satisfaction with motherhood role, however, none of the variables of education, spouse's occupation, the type of pregnancy, and income were related to the sense of competence and maternal satisfaction at 6 months postpartum (25). The results of the mentioned study are consistent with ours on the relationship between age and the sense of competence; however, it is inconsistent on the relationship between spouse's occupation, income status, and the sense of competence.

4.1. Limitations

It must be noted that due to the cross- sectional nature of our study, the relationship observed between the self-efficacy and the maternal sense of competence cannot be interpreted as causal. However, we had time limitations for examining maternal sense of competence and self-efficacy at 6 and 12 months, and their effect on breastfeeding, postpartum depression, and infant outcomes. Thus, it is recommended to consider these for future studies. Also, the samples were only selected from urban centers and also women without any complications of pregnancy and childbirth were selected for this study, a fact which may reduce the study generalizability. It is suggested that the similar study should be conducted on rural women and also in women with high-risk pregnancy and childbirth.

4.2. Conclusions

In conclusion, our study shows that increased levels of self-efficacy to be associated with improved maternal sense of competence in postpartum women. Some sociodemographic characteristics, including mother's age, income status, spouse's occupation, and wanted pregnancy have statistically significant relationships with maternal sense of competence. Due to the importance of maternal sense of competence and relationship with self-efficacy, the results from this study can be used to help: increase awareness among health professionals (doctors, nurses, midwives) in postpartum care services about self-efficacy and maternal sense of competence, guide future research examining factors affecting adaptation to motherhood and maternal sense of competence, establish routine assessments for self-efficacy and maternal sense of competence after childbirth, provide professional support for women with difficulties in self-efficacy and maternal sense of competence, and finally promote the health of mothers and babies.

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Footnotes

Conflicts of Interest: The authors declare that they have no conflict of interest.

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Table 1. Socio-Demographic Characteristics and Their Relationship with Maternal Sense of Competence in Primiparous Women After Childbirth (n = 305)

Characteristics	No. (%)	Mean (SD)[a]	P Value
Mother's age (year)	23.8 (4.0)[a]		0.002[b]
< 25	168 (55.1)	79.8 (13.4)	
25 - 29	109 (35.7)	79.3 (13.7)	
≥ 30	28 (9.2)	75.1 (16.5)	
Mother's occupation			0.002[c]
Housewife	266 (87.2)	78.3 (13.8)	
Working	39 (12.8)	85.3 (12.5)	
Spouse's occupation			< 0.001[b]
Worker or unemployed	115 (37.7)	76.8 (13.0)	
Clerk	73 (23.9)	85.6 (12.3)	
Private sector	117 (38.4)	77.5 (14.4)	
Mother's education			< 0.001[b]
Elementary or secondary school	88 (28.9)	71.4 (13.2)	
High school or diploma	178 (58.4)	82.0 (12.3)	
University	39 (12.7)	83.7 (15.0)	
Spouse's education			< 0.001[b]
Elementary or secondary school	62 (20.3)	72.1 (11.7)	
High school or diploma	168 (55.1)	78.8 (13.9)	
University	75 (24.6)	85.9 (12.2)	
Having help for childcare			< 0.001[c]
Yes	172 (56.4)	82.8 (12.6)	
No	133 (43.6)	74.5 (14.0)	
Mother interest infant sex			< 0.001[c]
Yes	283 (92.8)	80.1 (13.8)	
No	22 (7.2)	67.1 (6.5)	
Income			< 0.001[b]
Completely enough	162 (53.2)	85.8 (11.2)	
Somewhat enough	109 (35.7)	73.3 (12.9)	
Not enough	34 (11.1)	62.8 (11.2)	
Sex of newborn			0.305[c]
Female	175 (57.4)	78.5 (14.2)	
Male	130 (42.6)	80.1 (13.3)	
Pregnancy type			< 0.001[c]
Wanted	270 (88.5)	80.4 (13.4)	
Unwanted	35 (11.5)	70.0 (13.8)	
Type of delivery			0.813[c]
Vaginal delivery	167 (54.8)	79.4 (13.9)	
Cesarean section	138 (45.2)	78.9 (13.8)	
Marital satisfaction			< 0.001[b]
Completely	221 (72.5)	82.4 (13.4)	
Somewhat	69 (22.6)	71.7 (11.7)	
Not at all	15 (4.9)	66.4 (8.8)	
Type of residential home			0.067[b]
Private home	81 (26.6)	82.5 (14.3)	
Rental home	88 (28.9)	77.5 (13.5)	

Mother's parent home	38 (12.4)	80.0 (12.2)	
Spouse's parent home	98 (32.1)	77.7 (14.0)	
Father interest infant sex			0.002[c]
Yes	279 (91.5)	79.9 (13.8)	
No	29 (8.5)	71.2 (11.8)	

[a]Mean (SD).
[b]One-way ANOVA.
[c]Independent sample t-test.