Preventive Care in Nursing & Midwifery Journal
2018; 8(1): 1-10

Evaluation of Maternal Role Adaptation in Mothers with Late-preterm Infants and its Related Factors

Rajabi A[1], Maleki A[*2], dadashi M[3], Karamitanha F[4]

[1]MSc. student in Counseling, Dept. of Midwifery, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran
[*2]PhD. Maternal and child health, Dept. of Midwifery, Assistant Professor, Social Determinants of Health Research Center, Zanjan University of Medical Sciences, Zanjan, Iran
[3]PhD. clinical psychology, Dept. of clinical psychology, Assistant Professor, Social Determinants of Health Research Center, Zanjan university of medical science Zanjan, Iran
[4]MD. Dept. of community Medicine, Assistant Professor, of Community Medicine, School medical, Zanjan University of Medical Science, Zanjan, Iran

Corresponding Author: Dept. of Midwifery, Assistant Professor, Social Determinants of Health Research Center, Zanjan University of Medical Sciences, Zanjan, Iran

Email: malekia@zums.ac.ir

Received: 16 Jan 2019 **Accepted**: 13 Apr 2019

Abstract

Background: Mothers with preterm infants experience numerous stressful problems which can be associated with negative effects on maternal role adaptation.
Objectives: The present study aimed to evaluate maternal role adaptation in mothers with late-preterm infants and its related factors.
Methods: This descriptive-analytical study was conducted in Ayatollah Mousavi Hospital in Zanjan, Iran during June-November 2017. A total of 95 women with preterm infants were selected by convenience sampling method. Data were collected using demographic and maternal role adaptation questionnaires. Finally, the obtained data were analyzed by the SPSS software employing descriptive statistics test and regression models at a confidence level of 95% ($P<0.05$).
***Results*:** Based on the results, the highest mean of maternal role adaptation belonged to the areas of child dependency and emotional development while the lowest mean was related to the area of concern and anxiety. In addition, the results demonstrated a significant correlation between the degree of maternal role adaptation and its areas such as family income, maternal and parents level of education, parents occupational status, birth weight, Apgar score, the gender of the infant, and delivery method.
Conclusion: In general, the adaptation of mothers with preterm infants was low in the area of concern and anxiety compared to the other areas. Therefore, planning appropriate interventions to strengthen the maternal role is of great importance for the parents who have preterm infants, low level of education, and are unemployed with insufficient income.

Keywords: late-preterm infant, adaptation, maternal role

Introduction

Maternal role is one of the hardest and yet most pleasurable roles of the women during their lives [1]. Although pregnancy, childbirth, and post-delivery periods are enjoyable experiences for the families, they are considered a critical and stressful time for the mothers since they are accepting new roles and activities [2]. In fact, the maternal role is defined as a process in which mothers attain the ability and competence in their

new role. In addition, mothers connect their maternal behaviors to their central role so that being a mother is linked to their identity [3]. Further, the transition to motherhood and becoming a mother requires moving from a current known fact to an unknown and new reality [2,3]. According to Meghan, motherhood is the ability to adapt to the present situation which begins from pregnancy and ends up to several months after the birth of the neonate [2]. In this respect, motherhood is associated with new adaptive functions through which a woman should perfectly fulfill her role and establish a good relationship with her infant [4]. Mothers are concerned about the health of themselves and their child during the post delivery period. Furthermore, they experience changes in their physical, psychological, economic systems, as well as sexual and social relations, which can disrupt the effectiveness of women in their new role as a mother [5].

As a result, mothers who cannot properly adjust themselves to their role experience a decline in their motherhood and dependence on the neonate [4]. Additionally, the possibility of anxiety, depression [6], and disruption of relationships with the spouse increases accordingly [7]. Competence in the maternal role and its achievement depends on several factors including age, socioeconomic status, self-concept and self-perception, previous experience in the education of children, their own and the neonate's health, family performance, perceived stress, and supportive systems, which itself is affected by the social and cultural context of the women [5, 8-10]. Preterm labor is a serious incident in the perinatal period and its prevalence varies depending on the economic and social situation in different societies [11].

Preterm birth experience is frequently traumatic and a source of distress for the parents. It is accepted that premature infants require careful and complicated care due to their physical, psychological, and physiological problems [12,13]. In addition, the parents of these infants need support [14]. The mother's inability to think properly is viewed as one of the negative effects of preterm birth, which causes the emergence of other stresses. This can further alter mother-infant interactions [15]. Therefore, the majority of these mothers are unable to prepare themselves to become a mother and require considerable support [14]. A limited number of studies are conducted regarding the status of adaptation to the maternal role of primiparous women and women with preterm infants with a gestational age of below 34 weeks in Iran. Furthermore, there is an information gap in terms of the status of accepting the maternal role in mothers with preterm infants born with a gestational age of 34-36 weeks [8, 16-18].

The postpartum period is a golden time for providing health care education to mothers who are interested in maintaining their neonate's physical and mental health. In this respect, midwives provide great support for postpartum delivery, especially for mothers with preterm infants. Therefore, these care providers can facilitate the adaptation process by attaining relevant knowledge and understanding the concepts and feelings described by the mothers. Considering the importance of accepting the maternal role and its effect on all aspects of maternal life and neonatal health, the present study sought to investigate the adaptation to the maternal role in mothers with preterm infants and related factors.

Methods

The current cross-sectional and descriptive study was performed in Ayatollah Mousavi Hospital of Zanjan, Iran during June-November 2017. Research population included the mothers of preterm infants, who referred to the breastfeeding clinic of the above-mentioned hospital for consultation in the first two weeks after childbirth. Totally, 95 women who met the inclusion criteria were selected by convenience sampling technique. Inclusion criteria were residing in Zanjan, being literate, living with the spouse, demonstrating a willingness to participate in the research, having no medical and midwifery complications during the first 24 hours after the pregnancy in mothers or no sign of depression, and finally, obtaining a score below 13 based on the Edinburgh Postpartum Depression Scale (EPDS). Additionally, the preterm neonates were the result of a normal pregnancy with no complications, were healthy, a singleton, and able to be breastfed. In addition, pregnancy period was 34-36 weeks.

The sample size was estimated at 95 patients using the results of the previous studies and taking into account the indexes of 96=5.3, $\delta^2/_2$=8.1, $Zd/_{\alpha-1}$=0, and attrition of 15%. The data collection instruments included a demographic and midwifery characteristics questionnaire, the adaptation to the maternal role scale, and EPDS. Demographic characteristics questionnaire contained variables such as age, maternal level of education and occupational status, paternal age, level of education and occupational status, the family income, the number of wanted pregnancy, the frequency of pregnancy, the type of delivery, the feeding method, neonatal gender, age, head circumference, height and weight, as well as the 1-minute and 5-minute Apgar scores. The content validity of this questionnaire was qualitatively evaluated by 10 midwifery specialists.

The adaptation to the maternal role scale, designed by Javadifar et al., was related to domestic culture and encompassed seven areas of family support and strengthening, hardship and dissatisfaction, child dependency, anxiety and concern, emotional development, performance-adaptation, and social development. The questionnaire contained 33 items which were scored based on a five-point Likert-type scale from 'Completely Agree' to 'Completely Disagree'. Two areas of concern-anxiety and hardship-dissatisfaction were reversely scored whereas the remaining domains were positively scored. Therefore, the lowest and highest obtained scores were 33 and 165, respectively. Since the number of items varied in each of the areas, the weighted mean was used to calculate the scores of the domains. Further, obtaining higher scores in each field indicated a better match. Furthermore, the total score of the scale was determined by calculating the total score of the items [16].

Additionally, the reliability of the questionnaire and each of its related areas (i.e., family support and strengthening, hardship and dissatisfaction, child dependency, anxiety and concern, performance, emotional development, and social growth and adaptability) were computed with a Cronbach's Alpha of 0.81, 0.765, 0.774, 0.809, 0.803, 0.762, 0.797, and 0.770, respectively. The adaptation to the maternal role scale was completed by the patients during the first two post-delivery weeks. In this research, the EPDS was utilized to determine one of the criteria for entering the study after the adaptation to the maternal role scale. This questionnaire was designed and validated by Cox et al. in 1987 and its Farsi version was estimated and confirmed by Montazeri et al. in 2017. The questionnaire included 10 items and was scored from three (i.e., 'Yes, most of the times') to zero (i.e., 'Never'). The mean score of the EPDS was between 0 and 30, where the score of ≥13 was considered as postpartum depression. In this study, the cutoff point was considered 13 to recognize the symptoms of postpartum depression. Accordingly, eligible women who obtained a score of ≤13 were enrolled in the study [19].

The data were analyzed utilizing the SPSS software, version 16 by descriptive statistics to describe maternal and neonatal characteristics and the adaptation to the maternal role. In addition, Pearson's correlation coefficient, the univariate regression model, as well as the linear multivariate model with a stepwise method was employed to assess the mother-infant relationship and the mean score of adaptation with the maternal role. It should be noted that the P-value of 95% was considered statistically significant.

Results

The results related to the demographic characteristics of the parents demonstrated that the majority of mothers were within the age range of 25-34 years (53.7%), had academic education (36.8%), and were housewives (85.3%). Further, most fathers were within the age range of 25-34 years (55.8%), had academic education (33.7%), and were self-employed (68.4%). Furthermore, more than 55% of the participants had sufficient family income (55.8%). Moreover, 66.3% of the pregnancies were wanted and more than 61% of the participants had an experience of childbirth more than once (Table 1).

Table 1: The Demographic Characteristics of the Participants

Variables		Frequency	%
Maternal age (year)	16-24	23	24.2
	25-34	51	53.7
	35-45	21	22.1
Maternal level of education	Elementary	12	12.6
	Junior high school	19	20.0
	High school	29	30.5
	University	35	36.8
Maternal occupational status	Housewife	81	85.3
	Employed	14	14.7
Paternal age	16-24	6	6.3
	25-34	53	55.8
	35-45	36	37.9
Paternal level of education	Elementary	15	15.8
	Junior high school	21	22.1
	High school	32	33.7
	University	27	28.4
Paternal occupational status	Worker-unemployed	10	10.5
	Employee	20	21.1
	Self-employed	65	68.4
Agreement for pregnancy	Yes	63	6.3
	No	32	33.7
Number of pregnancies	1	37	38.9
	>1	58	61.1
Adequacy of family income	Yes	53	55.8
	No	42	44.2

As regards the characteristics of the neonates, most of them were females (57.9%) and were born by cesarean (C)-section (60%). Additionally, the most feeding technique was lactation (90.5%), the details of which are provided in Table 2.

Table 2: The Characteristics of the Neonates

Variables		Frequency	%
Gender of infant	Female	55	57.9
	Male	40	42.1
Method of delivery	Natural delivery	38	40
	C-section	57	60
Feeding method	Breastfeeding	86	90.5
	Milk powder	5	5.3
	Both	4	4.2
Neonatal age (week)	Mean (SD)	35.35(0.74)	-
Neonatal weight (gr)	Mean (SD)	2648.84(402.11)	-
Neonatal height (cm)	Mean (SD)	47.66(1.80)	-
Neonatal head circumference (cm)	Mean (SD)	32.53(1.25)	-
1-minute Apgar	Mean (SD)	8.33(0.53)	-
5-minute Apgar	Mean (SD)	9.88(0.32)	-

Note. SD: Standard deviation; C-section: Cesarean section.

The results of the description of the adaptation to the maternal role and its areas indicated that the mean weight of the total score related to the adaptation to the maternal role was 3.40. In addition, the highest mean weight (4.23) belonged to child dependency and emotional development while the lowest mean weight (2.02) was related to the field of anxiety and concern (Table 3). The relationship between the characteristics of the participants (i.e., the number of pregnancies, age, occupational status and level of education of the mother, age, occupational status and level of education of the father, the sufficiency of family income, and planning for pregnancy) was evaluated in the linear regression model through stepwise method by the total score of adaptation to the maternal role and its areas. Based on the results, the scores of hardship and dissatisfaction,

child dependency, and anxiety and concern areas were significantly related to the variables of family income, as well as the maternal and paternal level of education, respectively.

In this regard, the possibility of child dependency was 0.20 times higher in self-employed and employed fathers compared to the workers. In addition, mothers with a higher level of education experienced a lower chance of concern (by 0.22 times) compared to those with an elementary level of education. Further, insufficient family income increased the experience of hardship and dissatisfaction in mothers by 0.26 times. Furthermore, no statistically significant correlation was observed between the total score of adaptation with the maternal role and other domains (Table 4). However, there was a positive and significant correlation between the mean total score of adaptation with the maternal role and its areas. Conversely, no statistically significant relationship was found between emotional development, child dependency, as well as the areas of adaptation and social development with concern and anxiety. Additionally, hardship and dissatisfaction represented no significant association with the areas of emotional development and child dependency. The relationship between the neonatal demographic characteristics (i.e., age at birth, birth weight and height, head circumference, 1-minute and 5-minute Apgar score, delivery method, and nutritional status) was evaluated in a linear regression model with a stepwise method by the total score of adaptation to maternal role and its related areas. The results demonstrated a significant relationship between the total score of adaptation to the maternal role and the area of child dependency with the birth weight of neonate, the area of anxiety and concern with birth weight and the 1-minute Apgar score, as well as the area of adaptation and social development with 5-minute Apgar and delivery method and emotional development with neonatal gender.

Table 3: Mean, standard deviation, and the range of scores of adaptations to maternal role and its areas

	Range of Scores	Mean	Standard Deviation
Total adaptation score	2.55-4.70	3.40	0.37
Support & strengthening	1.67-5.0	3.78	0.56
Hardship & dissatisfaction	1.14-4.57	2.81	0.67
Child dependency	3.0-5.0	4.23	0.42
Concern & anxiety	1.0-3.50	2.02	0.67
Performance	2.0-5.0	3.19	0.60
Emotional development	3.0-5.0	4.23	0.42
Adaptation & social growth	2.50-5.0	3.83	0.53

Table 4: Correlation Between Adaptation to Maternal Role and its Areas

	Total Adaptation Score	Support & Strengthening	Hardship & Dissatisfaction	Child Dependency	Concern & Anxiety	Performance	Emotional Development	Adaptation & Social Growth
Total adaptation score	1							
Support & strengthening	0.71*	1						
Hardship & dissatisfaction	0.78*	0.31*	1					
Child dependency	0.49*	0.40*	0.18	1				
Concern & anxiety	0.55*	0.22*	0.46*	-0.02	1			
Performance	0.78*	0.48*	0.61*	0.24*	0.39*	1		
Emotional development	0.44*	0.30*	0.16	0.44*	0.002*	0.25*	1	
Adaptation & social growth	0.56*	0.40*	0.25*	0.38*	0.10	0.37*	0.28*	1

*$p<0.05$

Accordingly, the increased birth weight of infants led to an increase in the chance of adaptation to the maternal role and child dependency by 0.24 and 0.25 times, respectively while it decreased the

chance of concern and anxiety by 0.27 times. In addition, a low 1-minute Apgar score increased the possibility of concern and anxiety in mothers by 0.22 times. Further, the chance of emotional development related to the mothers of male infants was 0.24 times higher compared to other mothers. Contrarily, the likelihood of adaptation and social development in mothers experiencing a C-section was 0.20 times lower compared to other women. Although the chance of adaptation and social development increased in mothers with a high 5-minute Apgar score by 0.22 times, the correlation between the adaptation to the maternal role and its areas with other neonatal characteristics was negligible (Table 5).

Table 5: Relationship between adaptation to the maternal role and its areas with maternal and neonatal factors

Dependent Variables	Independent	B	β	P value	CI 95%
Total adaptation score	Neonatal weight	0	0.24	0.01	0
Child dependency	Neonatal weight	0	0.25	0.01	0
	Paternal occupational status	0.09	0.20	0.04	0.002,0.19
Concern & anxiety	Neonatal weight	0.00	0.27	0.006	0.000,0.001
	1-minute Apgar	-0.28	-0.22	0.02	-0.52,-0.03
	Maternal level of education	0.14	0.22	0.02	0.01,0.27
Emotional development	Gender of infant	0.20	0.24	0.01	0.03,0.37,
Adaptation & social growth	Type of delivery	-0.22	-0.20	0.03	-0.43,0.01
	5-minute Apgar	0.36	0.22	0.02	0.04,0.69
****Performance**	-	-	-	-	-
****Support & straightening**	-	-	-	-	-
Hardship & dissatisfaction	Family income	-0.36	-0.26	0.009	-0.62,-0.09

Note. *P<0.05; CI: Confidence level; **No significant relationship with any of the maternal and neonatal variables

.

Discussion

As the results indicated, mothers had the most adaptation in the field of child dependency and emotional development. In other words, child dependency and thus the emotional development of mothers with preterm infants initiated from the first post-delivery weeks. Apparently, concern and anxiety caused by the birth of preterm infants affected the adaptation to maternal role. Therefore, the mothers had the least adaptation in the area of concern and anxiety. In this respect, Zelkowitz et al. reported that the level of stress felt in mothers was accompanied by a decrease in their loving and responsive behaviors [20]. Lindberg et al. declared that Swedish mothers expressed that while they were not prepared to have a preterm infant, they felt close to their neonate from the beginning and their most important concern was related to the care of the infant. Anxiety due to being separated from the neonate was a considerably tangible experience affecting their family life. Furthermore, mothers believed that they could handle the situation and take care of a preterm infant with the support of the employees and their spouse, along with having sufficient information about the birth and care of a preterm baby [21].

In similar research, Ari et al. found that while mothers with preterm infants tolerated a lot of stress, they experienced some levels of individual growth by relying on the support of others compared to mothers of term neonates, [22]. Additionally, Khandan et al. pinpointed that the highest and lowest levels of adaptation to the maternal role among Iranian primiparous women were related to the areas of support and strengthening, as well as concern and anxiety, respectively [33], which is in congruence with the findings of the present study regarding the area of concern and anxiety. This indicated that both being primiparous and having a preterm infant, as stress factors, had an effect on adaptation to the

maternal role. Gray et al. highlighted that the level of perceived stress of the parents with preterm infants was high up to two years and was frequently elevated over time. In addition, maternal mental problems and neonatal behavioral issues were among the exacerbating factors for perceived stress in these individuals [24]. Given the results of the present study, the mean adaptation in the area of hardship and dissatisfaction were less than that of other areas. Kusters et al. indicated that mothers of preterm infants began taking care of themselves and their neonates in unexpected and critical situations. In fact, these women are exposed to more care challenges compared to mothers of the term infants [25], which is consistent with the results of the current study.

Boykova et al. believed that responsibility for the care of the infant, especially in the first few days, leads to confusion, stress, and pressure, and its manifestation in mothers is in the form of guilt, fatigue, duplicity, and anger [26]. Therefore, it seems necessary to plan and perform appropriate interventions to reduce the anxiety, hardship, and dissatisfaction of mothers and thus to improve the adaptation to the maternal role. Mother's placement in the new role is associated with new expectations, which can be effective in developing a mother's feeling and readiness to accept her maternal role [3]. Further, the feeling of emotional development for child care can be a sign of women's physical, emotional, or mental readiness. If the mother's conception of her abilities is unrealistic and pessimistic, she unconsciously appears as a bad mother concerning her performance [2].

Reviewing the experiences of the primiparous pregnant mothers, Soltani et al. reported that some of the participants felt that they had no good mental preparedness to grow their children due to insufficient experience to perform their maternal duties. Furthermore, these women had an unpleasant feeling of being pregnant and thought that the maternal role was imposed on them [27]. In this respect, the findings of the current study are not in line with the results of the above-mentioned research. This lack of consistency may be due to the differences in the research community. In the mentioned study, adaptation to the maternal role was evaluated during pregnancy and among primiparous women. In the present research, the area of child dependency was positively and significantly correlated with emotional development. Therefore, child dependency can be an excess factor in endurance, acceptance of the responsibility for child care, and maternal emotional development. Accordingly, planning for effective interventions to reinforce mother-child dependency should be taken into consideration by the staff.

The birth of preterm infants is considered a threatening factor in weakening couples' relationships and consequently, affecting the adaptation of women to their maternal role. Petch et al. emphasized that the quality of the couples' relationships in the postpartum period was the core of adaptation of the parents to their new role and predicted the performance and quality of child care [28]. Additionally, Momeni Zadeh et al. reported that social support is one of the most important strategies for coping with stress related to the birth of preterm infants. Accordingly, the spouse, family, physicians, and nurses are regarded as the main sources of support in this respect [29]. Therefore, healthcare workers should plan for strengthening this area of maternal role adaptation, especially in mothers of preterm infants.

The results regarding the relationship between neonatal factors and maternal role adaptation represented a positive and significant association between the neonatal birth weight and the total score of maternal role adaptation, child dependency and concern and anxiety, 1-minute apgar score and natural delivery with the area of adaptation and social development, in addition to the area of emotional development with the gender of an infant. However, the correlation between the total score of maternal role adaptation and its areas with other neonatal factors was not statistically significant.

Few studies investigated the relationship between neonatal factors and maternal role adaptation. In this respect, Khandan et al. indicated that the total score for maternal role adaptation had no association with neonatal evolutionary factors. Conversely, they observed a correlation between neonatal evolutionary indicators and the areas of support and strengthening the husband-wife relationship, mother-child dependency, concern and anxiety, and maternal emotional development [23]. However, as regards mother-child

dependency, Alan et al. found no significant relationship between the method of delivery, the length of hospitalization, the onset of breastfeeding, the number of children, as well as the marital status and pregnancy issues with the mother-child dependency [30].

Dezvaree et al. reported a significant correlation between the gender of the infant and the tendency to the recent pregnancy with the mother-child dependency [31], which is in conformity with the results of the mentioned study in some factors. Accordingly, improving the acceptance of the maternal role in mothers who experienced a C-section and had neonates with low birth weight and low Apgar score necessitates planning for and performing effective interventions. The results respecting the relationship between maternal factors and their maternal role adaptation revealed a lack of a significant relationship between the total score of maternal role adaptation and maternal factors. Nonetheless, adaptation to the area of child dependency was higher in fathers who were employees or self-employed compared to the workers. Further, mothers with lower levels of education had less adaptation in the area of concern and anxiety compared to those with higher education levels. However, the insufficient income of the family decreased adaptation to hardship and dissatisfaction in mothers.

Khandan et al. (2018) reported a reverse correlation between maternal role adaptation in primiparous women and paternal and maternal levels of education and the income level of the family [8], this corroborates with the results of the present study in several areas of maternal role adaptation. According to Shrooti et al., a feeling of maternal competence was significantly correlated with the maternal level of education, age and occupational status, wanted pregnancy, and family income level. In other words, the feeling of maternal competence was higher in mothers who had higher levels of education, an unwanted pregnancy, and high income, as well as those who were employed and aged above 19 years. The results of the above-mentioned study are consistent with the findings of the current study regarding the factors of education and income [32].

Ngai et al. demonstrated that maternal level of education, occupational status, and income level had no association with maternal competence [33]. Furthermore, Gilmore et al. obtained similar results [34], which are not consistent with the findings of the present study. This contradiction can be due to differences in the research community and cultural differences. Moving to the maternal stage requires the reconstruction of goals, behaviors, and responsibilities in order to achieve a new concept of oneself; additionally, it may be affected by individual characteristics, cultural beliefs, attitudes, socioeconomic status, the level of readiness, knowledge, and social conditions [1]. Accordingly, planning for strengthening social support, especially for low-income and working families should be highlighted by the policy makers and health workers. Several factors such as the self-reporting nature of the data collection instruments, the limitation of sampling to one center, and the convenience sampling of mothers with a late-preterm infant, limited the generalizability of the results. Therefore, considering the short post-delivery duration for evaluating maternal role adaptation and low sample size, researchers are recommended to implement longitudinal studies including larger sample sizes with longer follow-ups.

In general, adaptation to maternal roles in mothers of late-preterm infants was lower in the area of concern and anxiety compared to other areas. Given that maternal role adaptation was related to some of the maternal and neonatal factors, preparing mothers for accepting the maternal role from the period of pregnancy should be emphasized by the healthcare staff. Finally, authorities are required to provide social support in order to enhance the maternal role in parents with low levels of education, inadequate income, and a low-birth-weight infant with a low Apgar score after preterm delivery.

Acknowledgments

The present study was extracted from a master's thesis on counseling in midwifery, approved by the Vice-chancellor for Research in Zanjan University of Medical Sciences and registered on the clinical trial website of Iran under the registration code of A-11-344-6, the ethics code of ZUM.REC.1396.22, and clinical trial code of IRCT20150731023423N11. Hereby, we extend our gratitude to the Vice-chancellor for the Research and Education of Zanjan University of

Medical Sciences, the staff of Ayatollah Mousavi Hospital of Zanjan, and all the participants for their invaluable help.

Conflict of interest: None declared.

Funding:
This study was financially supported by the Research Committee of Zanjan University of Medical Sciences.

References

1. Liu CC, Chen YC, Yeh YP, Hsieh YS. Effects of maternal confidence and competence on maternal parenting stress in newborn care. J Adv Nurs. 2012; 68(4): 908-18.
2. Meighan M. Mercer's becoming a mother theory in nursing practice. Nursing Theory-E-Book: Utilization & Application. [cited 2018]; Avaiable from URL: https://nursekey.com/mercers-becoming-a-mother-theory-in-nursing-practice/
3. Mercer RT. Becoming a mother versus maternal role attainment. J Nurs scholarsh. 2004; 36(3): 226-32.
4. Emmanuel E, Creedy DK, St John W, Gamble J, Brown C. Maternal role development following childbirth among Australian women. J Adv Nurs. 2008; 64(1): 18-26.
5. Dashevsky A. An exploration of perceived maternal competence in mothers of healthy infants and in mothers of infants hospitalized at birth [Dissertation]. Massachusetts School of Professional Psychology: ProQuest Dissertations Publishing; 2012.
6. Robertson E, Grace S, Wallington T, Stewart DE. Antenatal risk factors for postpartum depression: a synthesis of recent literature. Gen hosp psychiatry. 2004; 26(4): 289-95
7. Mäntymaa M, Puura K, Luoma I, Salmelin RK, Tamminen T. Mother's early perception of her infant's difficult temperament, parenting stress and early mother–infant interaction. Nord J Psychiatry. 2006; 60(5): 379-86.
8. Khandan S, Riazi H, Akbari SAA, Nasiri M. The correlation between adaptation to the maternal role and social support in a sample of Iranian primiparous women. Adv Nurs Midwifery. 2018; 27(3): 37-42.
9. Holden L, Hockey R, Ware RS, Lee C. Mental health-related quality of life and the timing of motherhood: a 16-year longitudinal study of a national cohort of young Australian women. Qual Life Res. 2018; 27(4): 923-35.
10. Leahy-Warren P, McCarthy G, Corcoran P. First-time mothers: social support, maternal parental self-efficacy and postnatal depression. J Clin Nurs. 2012; 21(3-4): 388-97.
11. Dolatian M, Mirabzadeh A, Forouzan AS, Sajjadi H, Alavi Majd H, Moafi F. Preterm delivery and psycho-social determinants of health based on World Health Organization model in Iran: a narrative review. Glob J Health Sci. 2012; 5(1): 52-64.
12. Broedsgaard A, Wagner L. How to facilitate parents and their premature infant for the transition home. Int Nurs Rev. 2005; 52(3): 196-203.
13. Shah PE, Clements M, Poehlmann J. Maternal resolution of grief after preterm birth: implications for infant attachment security. Pediatrics. 2011 Feb;127(2):284-92. doi: 10.1542/peds.2010-1080.
14. Maguire CM, Bruil J, Wit JM, Walther FJ. Reading preterm infants' behavioral cues: An intervention study with parents of premature infants born< 32 weeks. Early hum Dev. 2007; 83(7): 419-24.
15. Trombini E, Surcinelli P, Piccioni A, Alessandroni R, Faldella G. Environmental factors associated with stress in mothers of preterm newborns. Acta paediatrica. 2008; 97(7): 894-98.
16. Javadifar N. Development and psychometric evaluation of an instrument to assess the Iranian first-time mothers' experiences of maternal role adaptation [Dissertation]. Tehran: Iran School Of Nursing And Midwifery of Tehran University Of Medical Sciences. 2013.
17. Shamsaei F, Maleki A, Shobeiri F, Soltani F, Ahmadi F, Roshanaei G. The relationship between general health and coping style with the perceived stress in primigravida healthy pregnant women: using the PATH model. Women Health. 2019 Jan; 59(1): 41-54.
18. Heidarpour S, Keshavarz Z, Bakhtiari M, Zayeri F. psychometric properties of the maternal adaptation questionnaire in mothers of premature infants admitted to the neonatal intensive care unit. Clin Res Paramed Sci. 2016; 5(3): 187-97. [In Persian]

19. Montazeri A, Torkan B, Omidvari S. The Edinburgh Postnatal Depression Scale (EPDS): translation and validation study of the Iranian version. BMC psychiatry. 2007; 7(1): 11.
20. Zelkowitz P, Papageorgiou A, Bardin C, Wang T. Persistent maternal anxiety affects the interaction between mothers and their very low birthweight children at 24 months. Early Hum Dev. 2009; 85(1): 51-58.
21. Lindberg B, Öhrling K. Experiences of having a prematurely born infant from the perspective of mothers in northern Sweden. Int J Circumpolar Health. 2008; 67(5): 461-71.
22. Taubman-Ben-Ari O, Shlomo SB, Findler L. Personal growth and meaning in life among first-time mothers and grandmothers. J Happiness Stud. 2012; 13(5): 801-20.
23. Khandan S, Riazi H, Amir Ali Akbari S, Nasiri M, Montazeri A. Adaptation to maternal role and infant development: a cross sectional study. J Reprod Infant Psychol. 2018; 36(3): 289-301.
24. Gray PH, Edwards DM, Gibbons K. Parenting stress trajectories in mothers of very preterm infants to 2 years. Arch Dis Child Fetal Neonatal Ed. 2017; 103(1): F43-F48.
25. Kusters C, Kollée L. The impact of a premature birth on the family; consequences are experienced even after 19 years. Ned Tijdschr geneeskd. 2013; 157(25): A5449.
26. Boykova M, Kenner C. Transition from hospital to home for parents of preterm infants. J Perinat Neonatal Nurs. 2012; 26(1): 81-87.
27. Soltani F, Maleki A, Shobeiri F, Shamsaei F, Ahmadi F, Roshanaei G. The limbo of motherhood: Women's experiences of major challenges to cope with the first pregnancy. Midwifery. 2017; 55: 38-44.
28. Petch J, Halford WK. Psycho-education to enhance couples' transition to parenthood. Clin Psychol Rev. 2008; 28(7): 1125-37.
29. MomeniZadeh A, Zeraati H, ShahinFar, GorbanZadeh. Coping with stress in mothers of preterm infants hospitalized in the neonatal intensive care unit. JPEN. 4(1): 28-23.
30. Alan H, Ege E. The influence of social support on maternal-infant attachment in Turkish society. Anatolia Nurs Health Sci. 2013; 16(4).
31. Dezvaree N, Alaeekarahroudi F, KhanaliAgan L, TalebiGhane E. The Mother-Newborn s Attachment and Its Related Factors in Mothers of Hospitalized Preterm Neonates. Health Care. 2016; 17(4): 340-49. [In Persian]
32. Shrooti S, Mangala S, Nirmala P, Devkumari S, Dharanidhar B. Perceived maternal role competence among the mothers attending immunization clinics of Dharan, Nepal. Int J Community Based Nurs Midwifery. 2016;4(2):100.
33. Ngai F-W, Chan SW-C, Ip W-Y. Predictors and correlates of maternal role competence and satisfaction. Nurs Res. 2010; 59(3): 185-93.
34. Gilmore L, Cuskelly M. Factor structure of the Parenting Sense of Competence scale using a normative sample. Child Care Health Dev. 2009; 35(1): 48-55.