DOI: 10.7860/JCDR/2018/35593.11724

Original Article

Obstetrics and Gynaecology Section

Effects of Postnatal Home-Based Education on Primiparous Women's Perceived Self-Efficacy in Neonatal Care

MARYAM KOOCHAKZAI[1], ALI MANSOURI[2], AMENEH SAFARZADEH[3], ALI NAVIDIAN[4]

ABSTRACT

Introduction: During the postnatal period, mothers face different challenges such as learning how to care for their infants and how to fulfill their own parental roles.

Aim: To evaluate the effects of postnatal home-based education on primiparous women's perceived self-efficacy in neonatal care.

Materials and Methods: This quasi-experimental study was done on 100 primiparous women who referred to healthcare centers in Zahedan, Iran, to receive routine postnatal care services. Women were conveniently recruited and randomly allocated to an experimental (n=50) and a control (n=50) group. A demographic questionnaire and Reece's Parent Expectations Survey were used for data collection both before and six weeks after the intervention. Women in the experimental group received routine postnatal care services as well as postnatal home-based neonatal care education in three sessions. However, women in the control group solely received routine postnatal care services. The SPSS software (v. 20.0) was used and for analysis of covariance, paired and independent-sample t, Chi-square tests were used.

Results: Mean age in the experimental and the control groups were 22.82±4.56 and 21.02±5.20 years respectively. After the intervention, the average increase in the score of perceived self-efficacy in the experimental group (44.84±13.50) was significantly greater than the control group (10.90±8.45; $p < 0.0001$).

Conclusion: Postnatal home-based education improves primiparous women's perceived self-efficacy in neonatal care. Home-based educational programs are recommended for the improvement of maternal and infantile outcomes in postnatal period.

Keywords: First-time mothers, Maternal self-efficacy, Postnatal care

INTRODUCTION

During the postnatal period, women face different challenges and difficulties such as familiarity with a neonate, learning to care for him/her, and realization of self-expectations as a parent [1-3]. A significant predictor of successful transition to motherhood is perceived self-efficacy [4].

Self-efficacy in the postpartum period is the confidence a woman has in her ability to deal with her new maternal roles [5]. It is one of the determining factors behind positive parenting [6]. High self-efficacy acts as a buffer against tensions and stressors such as postnatal depression and childrearing stress [5]. Mothers who have high self-efficacy can effectively fulfill family members' expectations and their own different maternal and spousal roles [4]. Moreover, mothers' high self-efficacy positively affects their children's quality of life [7]. Therefore, mothers with high self-efficacy consider childrearing as a challenge rather than a threat and thus, have confidence in their abilities, show perseverance, and feel low levels of stress and concern [8].

Self-efficacy is affected by different factors such as enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states [5,9]. Postnatal home-based education is among the best strategies for fulfilling women's educational and supportive needs and improving the quality of maternal and neonatal care services [9]. Such method includes services to prevent from problems, improve health, increase interaction between mother and infant, make mother adoptive to stress and anxiety, reduced use of emergency medical services during the first eight weeks of postpartum, and increase mother's self-efficacy in order to care for baby at home [10,11].

The World Health Organization and UNICEF issued a joint statement in 2009, committing low-income and middle-income governments to provide mothers with 2 to 3 home visits in the first week of postpartum period, as the result of studies in South Asia showed that home-based education had a significant impact on the survival of infants [12].

Some studies reported that problem-solving education, experiential learning, and active involvement improve mothers' self-efficacy in the postnatal period [9,13]. Another study showed the positive effects of mindfulness-based education on breastfeeding mothers' self-efficacy [14]. Yet, some studies showed that prenatal and postnatal interventions have no significant effects on mothers' self-efficacy [11,15]. Moreover, a study reported that the effectiveness of childrearing self-efficacy interventions is still poorly known [16]. Therefore, this study aimed to evaluate the effects of postnatal home-based education on primiparous women's perceived self-efficacy in neonatal care.

MATERIALS AND METHODS

This was a two-group pretest-posttest quasi-experimental study. The population of the study comprised all primiparous women who were referred in May-August 2016 to healthcare centers in Zahedan city, Iran, for neonatal hypothyroidism screening test in the third to the fifth postnatal days.

The Ethics Committee of Zahedan University of Medical Sciences, Zahedan, Iran, approved this study with the approval code of IR.ZAUMS.REC.1395.66. The study was also registered in the Iranian Registry of Clinical Trials with the registration number of IRCT2016092529965N1. Written informed consent was obtained from each participant at the time of recruitment to the study. Participants were provided adequate information about the study and the intervention and were ensured about the confidentiality of their information and the voluntariness of participation in or withdrawal from the study.

Based on the self-efficacy mean scores reported by Azmoude E et al., and with a power of 0.80 and a confidence level of 0.95,

sample size was determined to be 50 for each group i.e 100 in total [9]. Inclusion criteria were basic reading and writing skills, singleton pregnancy, full-term pregnancy (i.e., childbirth at a gestational age of 37-42 weeks), normal vaginal delivery, a healthy neonate, no history of known mental disorders or addiction, no maternal or infantile re-hospitalization, no participation in other simultaneous educational programs, no affliction by severe physical illnesses, living with husband, and no constant companionship of a childrearing helper (such as participants' mothers or mothers-in-law). Exclusion criteria were reluctance to receive home-based education or maternal or fetal acute health problems during the study.

For sampling, a list of all 28 healthcare centers in Zahedan city was created and then, four centers were selected from different areas of the city. The centers provided care services to people of different socioeconomic classes. Thereafter, 25 eligible women were recruited from each center. Recruited women were randomly allocated to a control and an experimental group. For random allocation, 100 envelopes were prepared. Each envelope contained an A card (for the control group) or a B card (for the experimental group). The envelopes were randomly arranged. Then, one envelope was selected for each participant and she was allocated either to the control or the experimental group based on the card in the envelope.

A demographic questionnaire and Reece's Parent Expectations Survey (PES) were used for data collection. The items of the demographic questionnaire were on participants' age, employment status, educational status, infant gender, and planned pregnancy. PES assesses parents' perceived self-efficacy in caring for their infant and doing their parental roles [17]. The 25 items of PES are scored on a ten-point Likert-type scale from 1 ("I cannot") to 10 ("I certainly can"), resulting in a total score of 25-250. Azmoude E et al., translated PES into Persian and confirmed the content validity of the Persian PES with a content validity index of 0.62 and a content validity ratio of 0.79 [9].

Initially, all women in both groups were asked to complete study questionnaires. Then, three educational sessions on neonatal care were held for women in the experimental group. The first session was held in the same healthcare center from which women had been recruited. The aim of this session was to inform participants about study aim and to teach them about breastfeeding. This session was run by a midwife with a work experience of ten years and lasted for 30-45 minutes. At the end of this session, an appointment was arranged with each participant in their home for the second session. In the second session, each woman was provided with practical trainings about diaper change, bathing the infant, infantile colic management, and getting the infant to sleep. The third session was also held at womens' home and it was on infant massage, warning signs, growth and weight gain, and vaccination. In this session, women asked their questions and articulated their concerns. Moreover, phone number was given to them and they were asked to call midwife in case of any question about the provided education. Women were also provided with an educational video clip about neonatal care. Educational materials for the intervention were prepared via doing a literature review, seeking the comments of specialists, and the results of need assessments previously performed in Iran [18,19]. Besides home-based education, women in the experimental group received routine postnatal care services. On the other hand, women in the control group solely received routine postnatal care services and education provided to all postpartum women based on the national postnatal care protocols in Iran [20]. Routine postnatal care services consisted of two fifteen to twenty minute sessions held in the 10^{th}-15^{th} and the 42^{th}-45^{th} postnatal days which were provided by health care personnel. These sessions were mainly on infant growth monitoring, breastfeeding, and vitamin supplements for infants. At the end of the sixth postnatal week, posttest was performed in the study setting [1,3]. However, for each woman who did not refer to the study setting for the posttest, a posttest was performed at her home.

STATISTICAL ANALYSIS

After data collection, the data were analysed using the SPSS software v. 20 (IBM Inc., Chicago, IL, USA). The Shapiro-Wilk test was done for normality testing. The results showed the normal distribution of all study variables. Therefore, within- and between-group comparisons were made via paired- and independent-sample t-tests, respectively. Moreover, between-group comparisons in categorical variables (such as educational status, employment status, Planned pregnancy, and infant gender) were done via the Chi-square test. The data were presented as absolute and relative frequencies, mean, standard deviation, and minimum and maximum values. The level of significance was set at less than 0.05.

RESULTS

Mean age in the experimental and the control groups were 22.82±4.56 and 21.02±5.20 respectively which is statistically in significant (p=0.06). Most women were housewives and held diploma or lower educational degrees. There were no significant differences in participants' demographic characteristics (p >0.05) [Table/Fig-1].

Characteristics	Intervention N (%)	Control N (%)	
Infantile gender			
Male	27 (54)	23 (46)	p = 0.5
Female	23 (46)	27 (54)	
Mothers' education level			
Up to diploma	37 (76)	37 (76)	p = 1
Diploma and higher	13 (26)	13 (26)	
Job			
Housewife	44 (88)	43 (86)	p = 0.9
Non Housewife	6 (12)	7 (14)	
Pregnancy type			
Planned	48 (96)	44 (88)	p = 0.2
Unplanned	2 (4)	6 (12)	
	Mean±SD	**Mean±SD**	**p = 0.06**
Age of mother	**22.8±4.6**	**21±5.2**	

[Table/Fig-1]: Participants' demographic characteristics.

Time Group	Before Mean±SD	After Mean±SD	Difference Mean±SD	p-value (Paired-sample t-test)
Experimental	126.3±21.3	171.5±16.4	44.8±13.5	< 0.0001
Control	123.8±22.4	134.7±18.5	10.9±8.4	0.06
Independent-sample t-test	0.5	< 0.0001	< 0.0001	

[Table/Fig-2]: Comparisons in the mean scores of participants' perceived self-efficacy in neonatal care.

Before the intervention, the groups did not significantly differ in the mean score of perceived self-efficacy (p= 0.5); however, after the intervention, the mean score of perceived self-efficacy in the experimental group was significantly greater than the control group (p < 0.0001).

Within-group comparisons illustrated that although the mean score of perceived self-efficacy in the control group increased during the study, this increase was not statistically significant (p= 0.06). However, in the experimental group, this increase was statistically significant (p< 0.0001) [Table/Fig-2].

DISCUSSION

The results of this study showed that postnatal home-based education significantly improved perceived self-efficacy in neonatal care among primiparous women. Similarly, Svensson J et al., reported

that their seven-session "Having a baby" educational program (consisted of problem-solving, experiential learning, and active involvement components) was effective in promoting self-efficacy [13]. One similarity of the present study with the study conducted by Svensson J et al., is that both studies used vicarious experience to directly educate women about neonatal care [13]. Azmoude E et al., also found that self-efficacy training using strategies such as video-based vicarious experience significantly promoted maternal self-efficacy [9]. Moreover, Isbir GG et al., found that their four-session psychological education program had positive effects on maternal self-efficacy. However, their intervention was not home-based and was implemented in the prenatal period [21]. According to Svensson J, different interventions can improve self-efficacy [13].

Contrary to our findings, Christie J et al., found that postnatal home visits by health visitors had no significant effects on maternal self-efficacy. They attributed the ineffectiveness of their intervention to the regular use of family physician's services by their participants [11]. Salonen AH et al., also reported the ineffectiveness of an internet-based educational intervention in enhancing parenting satisfaction and self-efficacy [3]. The contradiction between our finding and the finding reported by Salonen AH et al., may be due to the fact that while our sample consisted only of primiparous women, their participants were both primiparous and multiparous women [3]. Moreover, our intervention included a supportive component in that we went to their homes, provided them with an educational video clip and practical training about diaper change, breastfeeding, bathing, etc., and gave them the opportunity to call an experienced midwife anytime. Ford et al., also reported significant decrease in their self-efficacy for neonatal care in both their intervention and control groups [22]. Ngai FW et al.. also found that their psychoeducation program based on learned resourcefulness (with problem solving, self-efficacy, and cognitive restructuring components) had no significant effects on maternal role competence and self-efficacy. Such ineffectiveness may be due to the provision of education during pregnancy, i.e. before women's direct contact with their infants [15]. The most potential source for improving self-efficacy is first-hand experience in performing parental roles [9]. Therefore, educational interventions for improving women's self-efficacy in performing parental roles should be implemented in the postnatal period, i.e., when women can directly deal with their infants.

Study findings revealed that the mean score of perceived self-efficacy in the control group also increased during the study, even though the increase was not statistically significant. This is in line with the assumptions of self-efficacy theories which hold that actual performance of a task over time improves self-efficacy in doing it [5].

LIMITATION

One limitation of this study was that receiving support from husbands or other family members as well as gaining experience over time might have affected study findings. Besides, the study was conducted in a short period of time and with a short follow-up period. Among the strengths of the study were its home-based multi-component intervention as well as sampling from different socioeconomic classes.

CONCLUSION

This study shows that postnatal home-based education is effective in significantly improving perceived self-efficacy in neonatal care among primiparous women. Therefore, multi-component postnatal home-based educational interventions need to be incorporated into routine postnatal maternal and midwifery care programs. Moreover, comprehensive guidelines for regular home visits and need-based education should be developed and used by healthcare providers. Studies with longer follow-up periods are needed to assess the long-term effects of home-based education on women's self-efficacy in neonatal care. Home-based educational programs are recommended for the improvement of maternal and infantile outcomes in postnatal period.

ACKNOWLEDGEMENTS

This study was part of a master's thesis in midwifery, approved by the Institutional Review Board of Zahedan University of Medical Sciences, Zahedan, Iran (with the approval code of 7751). Hereby, we thank the Research Administration of the university and the participants of the study.

REFERENCE

[1] Doss BD, Cicila LN, Hsueh AC, Morrison KR, Carhart K. A randomized controlled trial of brief coparenting and relationship interventions during the transition to parenthood. Journal of Family Psychology. 2014;28(4):483.
[2] Leahy-Warren P, McCarthy G, Corcoran P. First-time mothers: social support, maternal parental self-efficacy and postnatal depression. Journal of Clinical Nursing. 2012;21(3-4):388-97.
[3] Salonen AH, Kaunonen M, Åstedt-Kurki P, Järvenpää A-L, Isoaho H, Tarkka M-T. Effectiveness of an internet-based intervention enhancing Finnish parents' parenting satisfaction and parenting self-efficacy during the postpartum period. Midwifery. 2011;27(6):832-41.
[4] Shorey S, Chan SW-C, Chong YS, He H-G. Predictors of maternal parental self-efficacy among primiparas in the early postnatal period. Western Journal of Nursing Research. 2015;37(12):1604-22.
[5] Salonen AH, Kaunonen M, Åstedt-Kurki P, Järvenpää AL, Isoaho H, Tarkka MT. Parenting self-efficacy after childbirth. Journal of Advanced Nursing. 2009;65(11):2324-36.
[6] Bryanton J, Gagnon AJ, Hatem M, Johnston C. Predictors of early parenting self-efficacy: results of a prospective cohort study. Nursing Research. 2008;57(4):252-59.
[7] Kohlhoff J, Barnett B. Parenting self-efficacy: Links with maternal depression, infant behaviour and adult attachment. Early Human Development. 2013;89(4):249-56.
[8] Azmoudeh E, Jafarnejad F, Mazlom SR. The effect of early parenthood education on concerns of primiparous women in performing maternal roles. J Mazandaran Univ Med Sci 2015;24(121):288-99.
[9] Azmoude E, Jaafarnejad F, Mazloum S. Effect of self-efficacy-based training on maternal sense of competency of primiparous women in the infants care. Evidence Based Care. 2014;4(3):7-14.
[10] Penfold S, Manzi F, Mkumbo E, Temu S, Jaribu J, Shamba D, et al. Effect of home-based counselling on newborncare practices in southern Tanzania one year after implementation: a cluster-randomised controlled trial. BMC Pediatrics. 2014;14:187.
[11] Christie J, Bunting B. The effect of health visitors' postpartum home visit frequency on first-time mothers: Cluster randomised trial. International Journal of Nursing Studies. 2011;48(6):689-702.
[12] Hanson C, Manzi F, Mkumbo E, Shirima K, Penfold S, Hill Z, et al. Effectiveness of a home-based counselling strategy on neonatal care and survival: a cluster-randomized trial in six districts of rural southern Tanzania. PLoS Med. 2015;12(9):1-22.
[13] Svensson J, Barclay L, Cooke M. Randomised-controlled trial of two antenatal education programmes. Midwifery. 2009;25(2):114-25.
[14] Perez-Blasco J, Viguer P, Rodrigo MF. Effects of a mindfulness-based intervention on psychological distress, well-being, and maternal self-efficacy in breast-feeding mothers: results of a pilot study. Archives of Women's Mental Health. 2013;16(3):227-36.
[15] Ngai F-W, Chan SW-C, Ip W-Y. The effects of a childbirth psychoeducation program on learned resourcefulness, maternal role competence and perinatal depression: a quasi-experiment. International Journal of Nursing Studies. 2009;46(10):1298-306.
[16] Olds DL, Sadler L, Kitzman H. Programs for parents of infants and toddlers: recent evidence from randomized trials. Journal of Child Psychology and Psychiatry. 2007;48(3-4):355-91.
[17] Reece SM. The parent expectations survey a measure of perceived self-efficacy. Clinical Nursing Research. 1992;1(4):336-46.
[18] Cunningham, Leveno, Rouse, Hauth, Bloom, Spong. puerperium. Cunningham, Leveno, Rouse, Hauth, Bloom, Spong, eds. William's Obstetrics. 24rd ed. New York USA: McGraw-Hill; 2014: 668-682.
[19] Kliegman, Stanton, St Geme, Schor.Nelson Textbook of Pediatrics. 20th ed. Philadelphia:Elsevier, inc;2016.
[20] Turkestani F, Dakht Abedini M, Radpouyan L, Rahimie Ghassabeh S, Hadipour Jahromi L, et al. Country guide Providing midwifery services and childbirth (postnatal care). Ministry of Health and Medical Education of Iran. 7st. 2017. Available from:www.naigo.ir/fa/structures.

[21] Isbir GG, Inci F, Önal H, Yıldız PD. The effects of antenatal education on fear of childbirth, maternal self-efficacy and post-traumatic stress disorder (PTSD) symptoms following childbirth: an experimental study. Applied Nursing Research. 2016;32:227-32.

[22] Ford K, Hoyer P, Weglicki L, Kershaw T, Schram C, Jacobson M. Effects of a prenatal care intervention on the self-concept and self-efficacy of adolescent mothers. The Journal of Perinatal Education. 2001;10(2):15-22.

PARTICULARS OF CONTRIBUTORS:
1. Department of Midwifery, Faculty of Nursing and Midwifery, Zabol University of Medical Sciences, Zabol, Iran.
2. MS in Nursing, Nursing and Midwifery School, Zabol university of medical Science, Zabol, Iran.
3. MS, Department of Midwifery, Nursing and Midwifery School, Zahedan University of Medical Sciences, Zahedan, Sistan and Baluchestan, Iran.
4. PhD, Department of Counseling, Prgnancy Health Research Center, Nursing and Midwifery School, Zahedan University of Medical Sciences, Zahedan, Sistan and Baluchestan, Iran.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Ali Navidian,
Mashahir Square, PO Box 98139-1379, Zahedan, Iran, Zahedan, Sistan and Baluchestan, Iran.
E-mail: alinavidian@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jan 15, 2018**
Date of Peer Review: **Mar 10, 2018**
Date of Acceptance: **Apr 05, 2018**
Date of Publishing: **Jul 01, 2018**