

The Effect of a Peer-Group Support Intervention Program on the Tensions of Mothers with Premature Neonates Admitted to the Intensive Care Units in Babol, Iran

Maryam Taheri¹, Lida Nikfarid^{2,*}, Azam Shirinabadi Farahani², Nezhat Shakeri³

¹ MSc Student, Department of Pediatric Nursing, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

² Assistant Professor, Department of Pediatric Nursing, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

³ PhD, Department of Statistics, School of Paramedical, Shahid Beheshti University of Medical Sciences, Tehran, Iran

*Corresponding author: Lida Nikfarid, Assistant Professor, Department of Pediatric Nursing, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran. E-mail: l.nikfarid@sbmu.ac.ir

DOI: [10.29252/annm-28013](https://doi.org/10.29252/annm-28013)

Submitted: 17-08-2017

Accepted: 29-04-2018

Keywords:

Mothers

Tension

Peer Support

© 2018. International Journal of Cardiovascular Practice.

Abstract

Introduction: Admission of premature neonates to the neonates intensive care unit (NICU) encounters mothers with tension, which affects mother-neonate relationship. The current study aimed at investigating the impact of peer support on the tension of mothers of premature infants admitted to NICUs of the selected hospitals in Babol, Iran.

Methods: The current before-and-after, two-group, quasi-experimental study, was conducted on 40 mothers with neonates who recently admitted to NICU in order to participate in peer-group support program. The amount of tension in the study participants was measured, before and after the intervention and the results were compared with those of the control group, using parental tension scale: NICU.

Results: The average tension in the intervention and control groups before and after the intervention, and comparison of measures between the groups were 125.2 (23.10), 135.2 (19.88), 33.35 (8.19), and 49.40 (18.63), respectively. There was a significant difference between the mean score of tension before and after the intervention in both the study groups. There was no significant difference in tension scores between the two groups, before and after the intervention.

Conclusions: Hospitals should meet the requirements of parents as the primary caregivers of infants, in order to meet their requirements.

INTRODUCTION

Premature birth is associated with hospitalization and separation of neonates from their families [1]. It can encounter the families with tension and anxiety. According to evidence, mothers experience higher levels of tension than fathers [2]. Admission to the neonates intensive care unit (NICU) is a potential stressful factor that affects mother-infant relationship [3]. Many mothers are not prepared for a premature birth [4]. In addition, they concern about survival and future of their premature infant [5]. Also, fear of being unable to take care of such infants is of the most frequent stressors for the mothers of preterm neonates [6]. They may think their neonate encounter with a variety of health

problems and disabilities, which make the situation more challenging [7]. Therefore, mothers need to get any possible information about the health status of their neonates, in order to take care of their premature neonate properly while being informed about uncertain invariables [8]. Based on the evidence, the presence and support of peers is one of the methods to control tension, and obtain relevant information and emotional support [9, 10]. Iris et al., believed that dialogue and provision of time and space for questions and answers between the experienced and inexperienced mothers may lead to sharing experiences, simulation, and effective training [11]. Emotional support from peers

and mothers who have had similar experiences can reduce the tension of parents, while at the same time facilitates the learning process of taking care of infants by the mothers [10]. The influence of peers-group sessions on several variables such as tension are investigated [11]. In addition to its applicability and cost-efficacy, this method increases the efficacy of both supporting and supported groups [10]. In Iran, the primary caregiver of infant is the mother and no research was conducted so far on the effect of a peer-group support program on the tension of mothers with premature neonates admitted to NICU. The study aimed at investigating the impact of peer support on the tension of mothers with premature infant admitted to NICU of two selected hospitals in Babul, Iran.

METHODS

The current quasi-experimental study was conducted on the population of mothers with neonates admitted to NICU of Ayatollah Rouhani and Shafi'zadeh hospitals in Babul, Iran, affiliated to Babul University of Medical Sciences. The sample size was set to 40 patients in each group based on the protocols of similar studies, with 95% confidence level (CI) and test power of 80%. Mothers were included in the study with purposive sampling method based on the following inclusion criteria: having a neonate younger than 37 weeks admitted to NICU for about a week, the ability to communicate verbally, and no history of recent psychological problems such as anxiety and depression. Exclusion criterion was underlying illness of infant including birth defect(s) or death. A total of five mothers who met the inclusion criteria with an infant hospitalized in NICU, but discharged from this unit and moved to a general ward were selected as peer supporters.

The data collection tool was a questionnaire with two parts. The first section included demographic characteristics including age, marital status, level of education, number of children, employment status, gestational age, and days passed from hospitalization. For the second section, the questions were adopted from the parental tension scale developed by Miles and Funk in 1998. The questions were divided into two dimensions: behavior of the neonate (22 items) and changes in the role of mothers (nine items). Mothers were asked to rate the intensity of their tension by choosing one of the following options: nothing, little, medium, high, and strong. Each item was scored based on a six-option Likert scale (from one 1 to 5). The tool determines parental tension, and indirectly measures the cause of tension [12]. It means that the higher scores indicate more tension. To determine the content and face validity of the tools, the comments of 10 professors of Shahid Beheshti University of Medical Sciences, School of Nursing and Midwifery were applied. To determine internal consistency, 15 eligible mothers completed the questionnaires. Cronbach's alpha was

0.87. The first author who worked as a nurse instructor in both of the hospitals, found the eligible mothers to be enrolled as the peer supporter group. The peer mothers became familiar with the objectives of the study by the first author, during the two one-hour sessions, to be trained in some matters, such as taking care of premature neonates at home (changing diapers, feeding, bathing), taking into account the physiological responses of the neonate, monitoring the signs, and touching the neonate properly and purposefully. Because of rooming-in of the mothers, they applied the skills in their daily care of neonates. The process of training of supporters lasted two days. Thereafter, they were designated to support and advise the mothers in the intervention group. To avoid contact between control and experiment groups, 80 eligible subjects were selected (40 from the control group in Shafi'zadeh Hospital and 40 subjects from the intervention group in Rouhani Hospital). The mothers in two groups completed the questionnaires. The peer mothers were planned to sit next to the mothers of the intervention group, in a specific room for one-to-one sessions of approximately 30 minutes. The mothers could talk with each other and exchanged experiences and information. Despite author's attempts to not interrupt the currency of peer supporting in the sessions, some questions to encourage exchanging the information between the mothers were raised during the sessions. The topics were guided to the main issue as taking care of a premature infant; for example, what are the differences between the breast-feeding of a premature infant and a normal infant?, and how do you deal with the fear of touching and taking care of a premature infant? The discussions were guided the way to facilitate both supporting and informing the participants of intervention group. In the meantime, the participants were provided to observe the way the supporter mothers practically took care of such infants. Data were analyzed with SPSS software version 17. To investigate the distribution of quantitative data in each group, the Kolmogorov-Smirnov test was used. Given the normal distribution of data for inter- and intragroup comparisons in quantitative variables, the independent *t* test and paired *t* test were used. The Chi-square test was used in order to compare the nominal qualitative data among groups. *P*-value < 0.05 were considered the level of significance. Ethical issues such as clarifications of the project, informed consent, and ensuring patients' confidentiality were respected. Moreover, the Ethics Committee of Shahid Beheshti University of Medical Sciences approved the study (code: 1395.122)

RESULTS

In each group, 40 mothers participated; the statistical analysis was performed on 80 participants. Two groups were homogenous for demographic characteristics; hence, the mean age of mothers was 31.87 ± 10.01 and 29.83 ± 9.38 years in the intervention and control

groups, respectively ($P = 0.47$). The majority of mothers in the intervention (32.5%) and control (42.5%) groups had university degrees ($P = 0.96$). The majority of participants in both groups (52.5%) had no other children, except the hospitalized infant ($P = 0.54$). In addition, 19 subjects in the intervention (47.5%) and 17 subjects in the control (42.5%) groups had normal delivery ($P = 0.67$). The mean gestational age at birth in the intervention group was 35.81 ± 9.01 years and 34.91

± 10.27 years in the control group; no significant difference was observed between the two groups in terms of age ($P = 0.34$). The cause of hospitalization in the majority of the subjects in the control (76%) and intervention (79.9%) groups was respiratory distress. The mean score of tension in the groups, before and after the intervention, and comparison of the average scores of tension between the groups, as well as their significance level are given in Table 1 and 2.

Table 1: Comparison of the Average of Tension, before and after the Intervention, in the Study Groups

	Mean	Number	Standard Deviation	The Average Deviation	t	Degree of Freedom	P-value
Control group					22.67	39	< 0.001
Before intervention	135.62	40	19.88	3.143			
After intervention	49.40	40	18.636	2.946			
Intervention group					24.21	39	< 0.001
Before intervention	125.2	40	23.103	3.652			
After intervention	33.35	40	8.194	1.295			

Table 2: Comparison of the Average of Tension in both the Study Groups before and after the Intervention

Group	Mean	Number	SD	The Average Deviation	P-value
Before intervention					$t = -2.163, df = 78, P\text{-value} = 0.034$
Control	135.62	40	19.883	3.143	
Intervention	125.20	40	23.103	3.652	
After the intervention					$t = 1.047, df = 78, P\text{-value} = 0.298$
Control	86.225	40	24.046	3.802	
Intervention	91.85	40	23.989	3.793	

According to the results, the score of tension for the mothers of both groups was high before the intervention; and there was no significant difference between the scores of two groups. After the intervention, the tension score in both groups was low without any significant difference between the groups. In each of intervention and control group, tension showed a significant difference between the before and after intervention measurements; in other words, tension of mothers was significantly lower in post-intervention measurements.

DISCUSSION

The study was conducted in order to determine the effect of a peer-group support intervention program on the tension level of mothers with premature neonates admitted to NICUs of the selected hospitals in Babol, Iran. It was found that the mothers of premature neonates admitted to NICU in both intervention and control groups had high tension levels. However, in the study by Iranmanesh et al., (2014) on the stressors and the amount of tension in the parents of premature neonates, it was shown that parents experience moderate tension [13]. Frank (2004) believed that the atmosphere of NICU is the source of tension for parents. Visiting the sick neonates, connected to the equipment, pipes and wires, surrounded by clinicians can be very frightening for parents [14]. The present study results are consistent with those of the studies by

Miles (2003), Griffin (1998), and Borimnejad et al., (2011) in terms of high levels of tension in mothers of premature neonates admitted to NICU [14-16]. Notwithstanding the current family-centered intervention and policies to support parents, particularly mothers, the hospitalization of neonates during the critical post-partum stage imposes high amounts of tension to Iranian mothers [14]. The under study hospitals were of the most crowded hospitals with high rates of hospitalization and referral in Babol. Family-centered care policies and support of mothers were not implemented, possibly due to a lack of human resources and officials knowledge. In the current study, tension of the mothers in both groups decreased significantly over time. This result is consistent with those of other studies in this field [17, 18].

Turan et al., (2008) reported that the acquaintance of parents with NICU increases over time [19]. Tension especially reduced in the mother of premature neonates who were seemingly improved after a few days and logically survived [20].

However, if the neonate’s status was deteriorated, or experienced pain, the scores of the neonate subscale in parental tension scale increased. In the present study, the health status of all neonates improved, which can explain the decrease of mothers’ tension. Nonetheless, since the instrument, in practice, evaluates the tension sources in NICU, such as light, sound of devices, or equipment attached to the neonate, they gradually get

familiar with such factors, and in consequence experience less tension. In other words, parents gradually shift on the neonate's health status rather than the tools and equipment, even though taking care of premature neonates can be continued at home, which causes tension in the mothers [21].

Comparison of the results of the intervention and control groups showed that the peer-group support intervention made no significant changes to tension in mothers with premature neonates. Several reasons can be put forward in this regard including small sample size, and the small size of the city, which causes spontaneous support networks among mothers in the control group. In addition, the supportive plan was more focused on the physiological conditions of the neonates and the appropriate ways to take care of them in a way that the information associated with such practices could be available through different methods to the mothers in the control group. On the other hand, in the sessions, which the peers supported each other, the researcher observed a positive interaction among the mothers and their attempts to emotionally support and train each other.

Many mothers considered their experiences positively, and believed that the presence of their peers with similar experiences can be an effective method to make them relax. However, regarding the questions about how to take care of neonates, mothers still believed that the care team and nurses were more reliable, and preferred to be supported and trained by a nurse. Regarding the limitation of the study, the lack of quantitative evaluation of tension and adequacy of the mothers in peer group are noteworthy. A more specific scale may be needed to evaluate the amount of tension in this regard.

REFERENCES

1. Alijahan R, Hazrati S, Mirzarahimi M, Pourfarzi F, Ahmadi Hadi P. Prevalence and risk factors associated with preterm birth in Ardabil, Iran. *Iran J Reprod Med*. 2014;12(1):47-56. [pmid:24799861](#)
2. Galeano MD, Carvajal BV. Coping in Mothers of Premature Newborns After Hospital Discharge. *Newborn Infant Nurs Rev*. 2016;16(3):105-9. [doi:10.1053/j.nainr.2016.08.007](#)
3. Witt WP, Cheng ER, Wisk LE, Litzelman K, Chatterjee D, Mandell K, et al. Preterm birth in the United States: the impact of stressful life events prior to conception and maternal age. *Am J Public Health*. 2014;104 Suppl 1(S1):S73-80. [doi:10.2105/AJPH.2013.301688](#) [pmid:24354830](#)
4. Staneva A, Bogossian F, Pritchard M, Wittkowski A. The effects of maternal depression, anxiety, and perceived stress during pregnancy on preterm birth: A systematic review. *Women Birth*. 2015;28(3):179-93. [doi:10.1016/j.wombi.2015.02.003](#) [pmid:25765470](#)
5. Shaw JG, Asch SM, Kimerling R, Frayne SM, Shaw KA, Phipps CS. Posttraumatic stress disorder and risk of spontaneous preterm birth. *Obstet Gynecol*. 2014;124(6):1111-9. [doi:10.1097/AOG.0000000000000542](#) [pmid:25415162](#)
6. Busse M, Stromgren K, Thorngate L, Thomas KA. Parents' responses to stress in the neonatal intensive care unit. *Crit Care Nurse*. 2013;33(4):S2-9; quiz 60. [doi:10.4037/ccn2013715](#) [pmid:23908169](#)
7. Matricardi S, Agostino R, Fedeli C, Montirosso R. Mothers are not fathers: differences between parents in the reduction of stress levels after a parental intervention in a NICU. *Acta Paediatr*. 2013;102(1):8-14.
8. Turner M, Chur-Hansen A, Winefield H, Stanners M. The assessment of parental stress and support in the neonatal intensive care unit using the Parent Stress Scale - Neonatal Intensive Care Unit. *Women Birth*. 2015;28(3):252-8. [doi:10.1016/j.wombi.2015.04.001](#) [pmid:25956972](#)
9. Rossman B, Greene MM, Meier PP. The role of peer support in the development of maternal identity for "NICU Moms". *J Obstet Gynecol Neonatal Nurs*. 2015;44(1):3-16. [doi:10.1111/1552-6909.12527](#) [pmid:25580732](#)
10. Hall SL, Ryan DJ, Beatty J, Grubbs L. Recommendations for peer-to-peer support for NICU parents. *J Perinatol*. 2015;35 Suppl 1:S9-13. [doi:10.1038/jp.2015.143](#) [pmid:26597805](#)
11. Chertok IR, McCrone S, Parker D, Leslie N. Review of interventions to reduce stress among mothers of infants in the NICU. *Adv Neonatal Care*. 2014;14(1):30-7. [doi:10.1097/ANC.000000000000044](#) [pmid:24472886](#)
12. Gustafson KW, LaBrecque MA, Graham DA, Tella NM, Curley MA. Effect of Parent Presence During Multidisciplinary Rounds on NICU-Related Parental Stress. *J Obstet Gynecol Neonatal Nurs*. 2016;45(5):661-70. [doi:10.1016/j.jogn.2016.04.012](#) [pmid:27497030](#)

CONCLUSIONS

Hospitals should meet the requirements of parents as the primary caregivers of infants, in order to meet their requirements.

ACKNOWLEDGMENT

The study was extracted from an MSc thesis. The research was approved and funded by Shahid Beheshti University of Medical Sciences, Tehran, Iran. The authors wish to thank Karina Schouten for editing the manuscript. Moreover, they are deeply grateful to all mothers who participated in the research.

Authors' Contribution

This study was approved by the ethics committee of the Shahid Beheshti University of Medical Sciences and Health Services. The ethical committees of each of the three hospitals approved the study. All participants signed the written informed consent for the objectives of the study, the right of deliberate participation, and confidentiality of the information before participating in the study.

All authors contributed to the design and implementation of the research, to the analysis of the Results and to the writing of the manuscript.

Conflicts of Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article.

13. Iranmanesh S, Hosseini S-S, Rayyani M, Razban F, Pooraboli B. Effect of Nursing Support on Perceived Stress among Parents of Preterm Infants in South-East of Iran. *Asian J Nurs Educ Res*. 2014;4(1):81.
14. Borim Nejad L, Mehrnosh N, Seyyed Fatemi N, Haghghani H. Maternal stressor agents with premature infants in neonatal intensive care units. *J Crit Care Nurs*. 2011;4(1):39-44.
15. Miles MS, Brunssen SH. Psychometric properties of the parental stressor scale: infant hospitalization. *Adv Neonatal Care*. 2003;3(4):189-96. [pmid:14502526](#)
16. Griffin T, Abraham M. Transition to home from the newborn intensive care unit: applying the principles of family-centered care to the discharge process. *J Perinat Neonatal Nurs*. 2006;20(3):243-9; quiz 50-1. [pmid:16915057](#)
17. Beheshtipour N, Baharlu SM, Montaseri S, Razavinezhad Ardakani SM. The effect of the educational program on Iranian premature infants' parental stress in a neonatal intensive care unit: a double-blind randomized controlled trial. *Int J Community Based Nurs Midwifery*. 2014;2(4):240-50. [pmid:25349867](#)
18. Valizadeh L, Akbarbeglou M, Asad Elahi M. Stressors affecting mothers with hospitalized premature newborn in NICUs of three teaching hospitals in Tabriz. *Med J Tabriz Univ Med Sci*. 2009;31(1):85-90.
19. Turan T, Basbakkal Z, Ozbek S. Effect of nursing interventions on stressors of parents of premature infants in neonatal intensive care unit. *J Clin Nurs*. 2008;17(21):2856-66. [doi:10.1111/j.1365-2702.2008.02307.x](#) [pmid:18637857](#)
20. Alkozei A, McMahan E, Lahav A. Stress levels and depressive symptoms in NICU mothers in the early postpartum period. *J Matern Fetal Neonatal Med*. 2014;27(17):1738-43. [doi:10.3109/14767058.2014.942626](#) [pmid:25005861](#)
21. Shaw RJ, St John N, Lilo EA, Jo B, Benitz W, Stevenson DK, et al. Prevention of traumatic stress in mothers with preterm infants: a randomized controlled trial. *Pediatrics*. 2013;132(4):e886-94. [doi:10.1542/peds.2013-1331](#) [pmid:23999956](#)