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Research Article

Study to Assess the Effect of Nursing Interventions on the Stress Level of Parents of Neonates Admitted to Neonatal Intensive Care Unit

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Abstract

Introduction: A pre-experimental study to assess the effect of nursing interventions on the stress level of parents of neonates admitted to NICU in selected hospital. The primary objective of the study was to assess the effectiveness of nursing intervention on parental stress among the parents of neonates admitted to NICU.

Methods: The present study was conducted among 30 parents of neonates admitted to NICU in a government hospital of New Delhi. The purposive sampling technique was applied. Parents were assessed for stress level by using PSS: NICU (developed by Miles& Funk et al.). On the first day (within 24 hours of admission) followed by nursing interventions which included an informational session of 40 minutes for one time regarding introduction of NICU, indications for admission to NICU, routine care given by staff nurses and doctors to the neonates admitted to NICU, commonly used equipment's and disposable items at NICU, general instructions regarding the care of neonate at home or after discharge and danger signs for neonates. On the third day, parents were reassessed for parental stress score by using same PSS: NICU scale.

Results: Out of 30 parents 21 were mothers and 9 were fathers. The mean pre-nursing intervention parental stress score of 72.9±12.98 were more than the mean posts nursing intervention parental stress score of 58.7±12.37 with mean difference of 14.2±5.61 which shows the significant reduction in stress level of parents of neonates admitted to NICU. The mean pre-nursing intervention parental stress score for other three subscales of PSS: NICU; 'sight and sound' 14±4.37, 'looks and behavior' 30.4±9.57, 'parental role' 28.5±4.92 was more than the mean post nursing intervention parental stress score for these three subscales; 'sight and sound'8.6±2.84, 'looks and behavior' 24.9±9.03 and 'Parental role' 25.1±4.44. These results showed that most leading cause of stress among all three subscales was parental role followed by looks and behavior and sight and sounds. The Data were analyzed using descriptive and inferential statistics using SPSS v.20.

Conclusion: Nursing Intervention was effective in reducing the stress level of parents of neonates admitted to NICU.

Keywords: NICU: Neonatal Intensive Care Unit, PSS: NICU-Parental Stress Scale: Neonatal intensive care unit

Introduction

Newborn babies who need intensive medical attention are often admitted into a special area of the hospital called as Neonatal Intensive Care Unit (NICU).[1] Environment of NICU has the potential to exacerbate stress for parents of young infants admitted to the unit.[2] Parental stress emanating from the NICU experience is important, potentially

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influencing parenting behavior as well as producing long-term emotional problems and health alteration.[3]

Nurses can boost parental self- esteem and confidence in the NICU. Encouraging visiting, teaching parents how to care for their child and involving them in decision making are all important aspects of this process.[4] The stressful nature of the Neonatal Intensive Care Unit (NICU) environment for parents of ill infants is well documented. The physical environment is a major source of stress for them, with bright lights, noisy life support and monitoring equipment, and chemical odors. The sight of their ill infants connected to equipment by tubes and wires and surrounded by medical personnel can be very disturbing.[5]

Parents of infants admitted in NICU experience stress related to feelings of helplessness, exclusion and alienation, and lack sufficient knowledge regarding parenting and interacting with their infants in the NICU. There are a number of interventions that nurses can do that help reduce the stress of mothers of infants in the NICU.[6] Some studies have shown that by doing some interventions parental stress can be reduced. Tukran et al. conducted a randomized controlled study to determine the effect of stress reducing nursing interventions on the stress levels of mothers and fathers of premature infants in a neonatal intensive care unit (NICU). They conducted the interviews for the parents of premature infants who agreed to participate in the study. Approximately 30-minute educational programme about their infant and the intensive care unit was held for the mothers and fathers in the intervention group within the first week after their infant was admitted to the intensive care unit. Then they were introduced to the unit and personnel. They were given the information, they requested and their questions were responded to. The parents in the control group received nothing in addition to the routine unit procedures. The study concluded that there was a significant difference between the intervention group and the control group mother's mean stress score. It was determined that the difference in stress scores for the fathers in the treatment groups was not found to be statistically significant ($p>0.05$).[7] Chourasia et al. conducted an interventional crossover study to determine the effect of counselling on stress levels of NICU mothers. Stress levels were assessed using the questionnaire among 100 NICU mothers. After providing counselling including NICU educational support, the questionnaire was re-administered after 48 hours. Coding of the responses was done and the data was analyzed using SPSS Ver.16. The mean pre-intervention subscale stress score was highest for parental role alteration (4.12), followed by looks and behavior of the baby (4.10) and sights and sounds (2.55). There was significant reduction in the post – counselling stress levels among NICU mothers in all three subscales of PSS: NICU. This study concludes that counselling of mothers whose babies are admitted to the NICU with regards to various aspects of the infant's environment and condition was significantly effective in reducing the stress levels of mothers.[8]

The objective of the current study was to assess the effectiveness of nursing intervention on parental stress among the parents of neonates admitted to NICU of hospitals in Delhi.

Materials and Methods

The research design used for the study was Pre-Experimental; one group Pre-test and Post-test design. The sample size was 30 parents of neonates admitted to NICU in government hospital and purposive sampling technique was used to select the sample. The total time duration for my study was one month (31st October to 30th November 2017). Parents of neonates who were on ventilator, having major congenital anomalies, having extremely low birth weight (ELBW) and parents who were having psychiatric disorder were excluded from study.

Recording data sheet was used to assess demographic data of parents and baseline information regarding the neonate admitted to NICU whose parents participated in the study. Recording data sheet included demographic data of parents including age of parents, sex of parents, education of parents and baseline information of neonates whose parents had participated in the study like gender of neonate, birth weight of neonate, gestation age of neonate, birth order of neonate, diagnosis of neonate and type of delivery.

Parental Stress Scale

Neonatal Intensive Care Unit (PSS: NICU scale) was used to assess the stress level of parents of neonates admitted to NICU after seeking the permission from developer. PSS:NICU scale was developed by Margaret S. Miles. The Parental Stressor Scale: NICU (PSS: NICU) was designed to measure the degree of stress experienced by parents during hospitalization related to alterations in their parental role, the appearance and behavior of their child, and sights and sounds of the unit. On the PSS: NICU, parents were asked to rate items on a 5-point rating scale ranging from "not at all stressful" to "extremely stressful".

Content of nursing interventions provided to parents of neonates admitted to NICU through structured teaching programme included introduction of NICU**,** Purpose of neonatal intensive care unit, NICU entry protocol, Equipment's and disposable items available at NICU and their purpose, Routine care provided to neonates at NICU by doctors and staff nurses and General instructions regarding care of neonate after getting discharge from hospital. The plan of nursing interventions provided to parents of neonates admitted to NICU through structured teaching

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programme was submitted to the nine experts for opinion and suggestions from field of pediatric medicine for content validity.

Ethical permission was obtained from Institutional Review Board, Jamia Hamdard, Delhi to conduct the research study. A written informed consent was taken from each study subject. They were assured of confidentiality of the information provided during the study. The consent also gave the right to the subject to withdraw from the study any time. Also coding of the subjects was done which ensured their anonymity.

On the first day data were obtained by recording data sheet and stress level of parents of neonates admitted to NICU was assessed by using Parental Stress Scale: Neonatal Intensive Care Unit (PSS: NICU). After the administration of Parental Stress Scale: Neonatal Intensive Care Unit nursing interventions were provided to parents of neonates admitted to NICU through power point presentation which was in Hindi language. This Power Point consisted of introduction, purpose of NICU, NICU entry protocol, NICU team, areas in NICU, commonly used equipment's and disposable items at NICU, routine care provided to neonate by the staff nurses and doctors at NICU and general instructions regarding care of neonate at home. On the third day parents of neonates admitted to NICU were reassessed for stress level by using Parental Stress Scale: Neonatal Intensive Care Unit (PSS: NICU) and the whole data was recorded in the record sheet.

Results

The data was entered in master data sheet followed by analysis and interpretation using descriptive and inferential statistics.

Table 1.Demographic Data of the parents of neonates admitted in NICU in terms of frequency and percentage

(n=30)

No.	Variables	Frequency	Percentage (%)
1.	**Parent (Mother/Father)**		
	Mother	21	70
	Father	9	30
2.	**Age (in years)**		
	20-25	10	33.3
	26-30	12	40.0
	31-35	5	16.7
	36-40	3	10.0
3.	**Education**		
	Illiterate	11	36.7
	Primary	12	40.0
	Higher	5	16.7
	Graduation	2	6.6

Table 2.Baseline information about neonates of those parents who had participated in the study in terms of frequency and percentage

(n=30)

No.	Variables	Frequency	Percentage (%)
1.	Gender of Neonates		
	Male	20	66.7
	Female	10	33.3
2.	Birth Order of Neonates		
	1	14	46.7
	2	10	33.3
	3	5	16.7
	4	1	3.3
3.	Birth Weight of Neonates (in Kg)		
	1-1.49	5	16.7
	1.5-2.49	12	40
	2.5-3.49	10	33.3

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	≥3.5	3	10
4.	Gestation age of Neonates (in weeks)		
	28- <32	7	23.3
	32-< 37	9	40
	37-42	14	46.7
5.	Diagnosis of Neonates		
	Preterm with Very Low Birth Weight (VLBW)	12	40
	Meconium Stained Liquor (MSL)	1	3.3
	Respiratory distress syndrome (RDS)	13	43.3
	Delayed cry	3	10
	Sepsis	1	3.3
6.	Type of delivery		
	Normal vaginal delivery (NVD)	20	66.7
	Lower segment caesarian section (LSCS)	10	33.3

Table 3.Mean, Mean difference, Standard deviation and 'p' value using paired 't'test between mean score of pre and post nursing intervention parental stress score

	No. of Items	Mean	Difference (Mean±SD)	't' value	'p' value
Pre-Nursing Intervention	26	72.9±12.98	14.2±5.61	13.891	0.0001**
Post-Nursing Intervention		58.7±12.37			

't'(29)=2.05,p<0.05** significant

The mean pre-nursing intervention parental stress score of 72.9±12.98 which was more than the mean post nursing intervention parental stress score of 58.7±12.37 with mean difference of 14.2±5.61 which was found to be statistically significant as evident from 't' (29) was 2.05 with 'p' value 0.001 at 0.05 level of significance.

Table 4.Mean, Mean difference, Standard deviation and 'p' value using paired "t" test between mean score of pre and post nursing intervention parental stress score among the three subscales of Parental Stress Scale : Neonatal Intensive Care Unit (PSS: NICU)

Domain	No. of items	PSS: NICU stress score (Mean±SD)		Difference (Mean±SD)	t value	ρ value
		Pre-nursing intervention	Post-nursing intervention			
Sight & sounds	5	14±4.37	8.6±2.84	5.4±2.61	11.28	0.0001***
Looks & behaviour	14	30.4±9.57	24.9±9.03	5.5±3.21	9.37	0.0001***
Parental role	7	28.5±4.92	25.1±4.44	3.4±2.84	6.45	0.0001***

't' (29) = 2.05, p<0.05***, significant.

The mean pre intervention parental score for 'sight and sound' was 14±4.37, 'Looks and Behavior' was 30.4±9.57 and for 'Parental Role' was 28.5±4.92 which was more than the mean post nursing intervention parental stress score for 'Sight and Sound' was 8.6±2.84, 'Looks and Behavior' was 24.9±9.03 and for 'Parental Role' was 25.1±4.44 with mean difference of 5.4±2.61('p'-0.001) for 'Sight and Sound', 5.5±3.21 ('p'-0.001) for 'Looks and Behavior' and 3.4±2.84('p'-0.001) for 'Parental Role' which was found to be statistically significant as evident from 't' (29) value of 2.05 at <0.05 level of significance for all three subscales of PSS:NICU i.e. sight and sound, 'looks and behavior and 'Parental Role'.

Discussion

The findings of the present study were contrasted with a study conducted by Musabirema P et al.[9] who concluded that looks and behavior of neonate were more stressful comparatively to other sub scales of PSS: NICU i.e. ('parental role' and 'sight and sound').

Present study revealed that the there was a significant reduction in stress level of parents in comparison with pre-nursing intervention parental stress score. The mean pre-nursing intervention subscale stress score was highest for parental role alteration (4.07). The findings of the present study are in line with study conducted by Chourasia N, et al.[8] He conducted a study to determine the effect of counselling on stress levels of NICU mothers. After providing counselling to the mothers including NICU educational support, the questionnaire was re- administered after 48 hr. He concluded that there was a significant reduction in stress level of mothers in comparison with pre-counselling

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session parental stress score. The mean pre-intervention subscale stress score was highest for parental role alteration with a mean score of (4.12).

The aim of this study was to assess the effect of nursing interventions on the stress level of parents of neonates admitted to NICU. While in the NICU, parents especially mothers were influenced by several conditions including the severity of their baby's diagnosis, the baby's appearance and level of functioning and the duration of their baby's length of stay in NICU. The current study performed on total 30 parents, including mother and father. The setting of the present study allowed the parents for only once a day at a fix time to see their baby who were admitted at NICU which was very stressful for them. Even at that visiting hour health care provider allowed only one of the parents either mother or father inside the NICU.

The aim of the NICU educational support was essentially to reach out the parents and help them connect emotionally and psychologically with their sick babies, the NICU environment and the staff.

The strength of the present study was the evidence that by providing the nursing interventions to parents we can reduce the stress of parents of neonates admitted to NICU especially the stress related to "sight and sound" and "looks and behavior" of NICU. The least effect of nursing interventions observed on 'Parental Role' among the three subscales. To enhance the effect on 'parental role' health personnel or staff nurses should give more emphasis on this part which may require additional interventions or repeated sessions of this kind of information. But, Because of busy schedule; doctors and nurses find less time to focus on parental stress.

In the current study setting there was only one fixed time for parents to see their babies at NICU (either mother or father) in 24 hours, so parents especially mothers felt so helpless when their babies were in NICU.

The studies showed the results of parental stress which indicated that when babies are at NICU; their parents are also affected and need some kind of emotional support which we can be provided to them by counselling sessions or informational sessions along with the explanation of medical condition of baby by the doctors.

Conclusion

There was a significant difference in pre and post nursing intervention parental stress score. This concluded that nursing intervention was effective in reducing stress level of parents of neonates admitted to NICU. But there was a limitation of this study that this was conducted on a small size sample and for a shorter time period which limits the generalization of the findings of the study. Nurses and doctors can counsel and provide the information to the parents of neonates admitted to NICU on the regular basis regarding the NICU. Hospital administration should think about adapting the family centered care approach. The hospital administrators are in the pivotal position to formulate policies regarding enhancing the frequency of visiting time for the parents and also include the nursing interventions or counselling session for parents of neonates who are admitted at NICU. The similar study could be done for the neonates with gross congenital anomalies and the neonates who are on ventilator.

Conflict of Interest: None

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