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Research Article

A Study to Assess the Effectiveness of Structured Discharge Education Programme on Mothers' Knowledge and Practice Regarding Care of Premature Infants at Home, after Discharge from NICU, PGIMS, Rohtak

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A B S T R A C T

Introduction: A study was conducted to assess the effectiveness of structured discharge education programme on mother's knowledge and practice regarding premature care at home, after discharge from NICU, PGIMS, Rohtak in order to encourage the parents to improve their knowledge and practice regarding care of premature infants at home.

Material and Method: A quantitative approach using one group pre-test post-test pre-experimental research design was used to conduct the study on 60 mothers of premature infants selected by convenience sampling technique.

Procedure: A semi-structured questionnaire and checklist were used to collect and analyse data through mean, standard deviation, paired t test and chi-square test.

Results: The mean value of knowledge score in the pre-test was 1.28; 71.7% of mothers had inadequate knowledge, 28.3% had moderate knowledge and none had adequate knowledge. The post-test mean value of knowledge was 2.68; none of the mothers had inadequate knowledge, 31.7% had moderate knowledge, and 68.3% had adequate knowledge. There was a statistically significant association of the mother's pre-interventional knowledge with postgraduate educational status, self-employed occupation of mother, family monthly income of more than INR 30,000, birth weight of baby between 2001 and 2500 g, gestational age of 34-37 weeks, and normal delivery with episiotomy.

Conclusion: The knowledge of premature infant mothers in the post-test was more compared to the pre-test. Hence it was evident that a structured discharge education programme helps in improving the knowledge and practice of mothers regarding the care of premature infants at home.

Keywords: Assess, Effectiveness, Structured Discharge Education Programme, Knowledge, Practice, Premature Infant Care and Discharge

Introduction

Premature infants are at a greater risk for sight problems, hearing problems, cerebral palsy and delays in development.[1] Preterm birth is the most common direct cause of newborn mortality. Small for gestational age and low birth weight are the important indirect causes of neonatal deaths. Most premature babies (> 80%) are born between 32 and 37 weeks of gestation (moderate/ late preterm) and die needlessly with a lack of simple essential care such as warmth and feeding support. About 10% of preterm babies are born at 28 to 32 weeks of gestation. In low-income countries, more than half of the neonates die, many of whom can be saved with feasible care.[2]

Educating parents regarding preterm care has been found to be a valuable measure in reducing stress and anxiety and improving parental confidence. Appropriate care of preterm babies including their feeding temperature maintenance, hygienic cord, skincare, and early detection and treatment of infections and complications can substantially reduce mortality. Education will give them the opportunity to acquire adequate information and apply the knowledge to feel confident and competent in their new role as involved parents. Thus the family member's knowledge of preterm care is very important.[2]

Need for the Study

Globally, prematurity is the leading cause of death in children under the age of five years, and in almost all countries with reliable data, preterm birth rates are increasing. Inequalities in survival rates around the world are stark. In low-income settings, half of the babies born at or below 32 weeks (2 months early) die due to a lack of feasible, cost-effective care, such as warmth, breastfeeding support, and basic care for infections and breathing difficulties. In high-income countries, almost all of these babies survive. Sub-optimal use of technology in middle-income settings is causing an increased burden of disability among preterm babies who survive the neonatal period.[3]

The parents feel helpless in taking care of the baby after discharge, even though the mothers are allowed to spend time with the premature infant before discharge. Instructions regarding bathing and feeding in the hospital are given to the parents on the day of discharge but no structured discharge teaching is available to impart knowledge and practice. The parents have no means of clearing their doubts, once they are discharged from the hospital. The time spent in giving instructions to the parents is very little. These factors stimulated the investigator to select the problem for her study. The investigator had provided a structured discharge education programme to parents of premature infants. A structured discharge education programme has a great influence on parents regarding their knowledge and practice to take care of premature infants which helps in reducing the morbidity and mortality rate and promoting normal growth and development.

Objectives

- To assess the knowledge and practice of mothers regarding premature infant care at home after discharge from NICU, PGIMS, Rohtak
- To assess the effectiveness of structured discharge education programme on knowledge and practice among mothers
- To find out the association between the pre-interventional knowledge of mothers with selected sociodemographic variables

Material and Methods

Research Approach

Quantitative research approach

Research Design

Pre-experimental (one group pre-test post-test) design in which pre-test was conducted followed by a structured discharge education programme and a post-test for the same group after 7 days of follow-up in the OPD (Table 1).

Table 1.Diagrammatic Representation of the Research Design

Group	Pre-test	Treatment	Post-test
Pre-experimental group	O_1	X	O_2

O_1: Pre-test assessment of knowledge and practice of a group of study participants
X: Administration of structured discharge education programme
O_2: Post-test assessment of knowledge and practice of the same group of study participants

Research Setting

The study subjects were selected from the Neonatal Intensive Care Unit, PGIMS, Rohtak, Haryana which covers four units NICU-I, NICU-II, NICU-III, and NICU-IV. The criteria for selecting this setting were based on geographical proximity, feasibility of conducting the study, and availability of the samples in the setting.

Variables under Study

Dependent Variable

It refers to the level of knowledge and practice of mothers regarding "care of premature infants at home" after discharge from the NICU.

Independent Variable

It refers to a structured discharge education programme for improving the knowledge and practice of mothers on premature infant care at home after discharge from the NICU.

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Demographic Variables

It refers to the participant's age, religion, educational status, occupation of mother, occupation of father, type of family, type of residence, family income, number of children in the family, gestational age of baby, birth weight, and type of delivery.

Study Population

The target population comprised mothers of premature infants admitted to the Neonatal Intensive Care Unit, PGIMS, Rohtak.

Sample Size

The sample size was 60 mothers of premature infants admitted to the Neonatal Intensive Care Unit, PGIMS, Rohtak who fulfilled the inclusion criteria.

Sampling Technique

In the present study, a convenient sampling technique was used for the selection of the sample based on inclusion and exclusion criteria.

Criteria for Selection of Sample

Inclusion Criteria

The mothers who fulfilled the following conditions were included in the study:

- Had preterm babies born before 37 weeks and with a weight below 2.5 kg
- Were available and willing to participate in the study
- Understood and spoke either Hindi or English

Exclusion Criteria

The mothers who fulfilled the following conditions were excluded from the study:

- Had sick and ventilator-supported preterm babies
- Had babies with congenital anomalies

Scoring Key

Part 1

It dealt with the 11 demographic variables of the subjects including participant's age, religion, educational status, occupation, type of family, type of residence, family income, number of children in the family, gestational age of baby, birth weight, and type of delivery.

Part 2

It included VIII sections which involved 40 multiple-choice questions. Each question had one correct answer. Each correct answer was given a score of 1, and each wrong answer score was scored as 0. The total score allotted for this section was 40.

Part 3

It consisted of a checklist containing 20 points. A score of 1 was given for the response 'Yes' and a score of 0 was given for the response 'No'. The total score allotted for this section was 20.

Results & Discussion

The findings were organised and have been presented under the following headings:

Section A: Description of Sample: Socio-demographic Variables

Age of Mothers

Among the participants, 58.33% of mothers were in the age group of below 25 years, 26.67% were in the age group of 26-30 years, 10% were in the age group of 31-35 years and 5% were above 35 years of age.

Religion

As per religion, the majority (75%) were Hindu, 8.33% were Muslim, 13.33% were Sikh and 3.33% belonged to other religious categories.

Educational Status of Mothers

In regard to the educational status of mothers, 26.67% had no formal education, the majority (35%) had studied up to middle school, 25% of them were graduates, and 13.33% had postgraduate qualifications.

Occupation of Mothers

Among the subjects, 36.67% were housewives, 13.33% were in private jobs, 8.33% were in government jobs, and the majority (41.67%) were self-employed.

Type of Family

It was found that 33.33% of the participants had joint families, 53.33% were from nuclear families and 13.33% belonged to extended families.

Type of Residence

With regards to the type of residence, 63.33% had a rural residence and 36.67% had an urban residence.

Family Income per Month

It was seen that 15% of the subjects had a monthly family income of less than INR 10000; for 30%, it was between INR 10000 and INR 20000, for 40%, it was between INR 20001 and INR 30000, and for 15%, it was more than INR 30000.

Birth Order of the Child

Regarding the birth order of the child in the family, 43.33% of the families were having their first child, 38.33% were having their second child, and in the case of 18.33% of subjects, the neonate was the third child or above in the family.

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Birth Weight of the Baby

It was found that 20% of preterm babies had a birth weight of less than 1000 g, 33.33% had a birth weight ranging between 1001 and 1500 g, 35% had a birth weight between 1501 and 2000 g, and in the case of 11.67% of babies, the birth weight was between 2000 and 2500 g.

Gestational Age of the Baby

The study revealed that the gestational age of 53.33% of babies was below 30 weeks, for 18.33% of neonates, it was between 30 and 32 weeks, for 15%, it was between 32 and 34 weeks, and for 13.33%, it was between 34 and 37 weeks.

Type of Delivery

Based on the type of delivery, 35% of subjects had a normal delivery with episiotomy, 16.67% had a normal delivery without episiotomy, 5% had a forceps delivery, and the majority (43.33%) had lower segment caesarean section.

Section B: To assess the Knowledge and Practice of Respondents regarding Premature Infant Care at Home

The findings revealed that as per the pre-test knowledge scores of participants, 71.7% had inadequate knowledge, 28.3% had moderate knowledge and 0% had adequate knowledge. The post-test knowledge scores showed that 0% of respondents had inadequate knowledge, 31.7% had moderate knowledge and 68.3% had adequate knowledge.

The pre-test practice assessment showed that 51.67% of subjects had poor practice, 45% had good practice and 3.33% had excellent practice, while the post-test assessment revealed that 6.67% of participants had poor practice, 33.33% had good practice, and 60% had excellent practice level.

Similar findings were supported by a study conducted by Mondlane et al. Its results revealed that mothers with two or more children (85%) had more knowledge than mothers with a single child (81%). Regarding the advantages of breastfeeding, illiterate mothers (75%) had more knowledge than literate mothers (65%).[4]

In another similar study conducted by White-Traut on providing a nurturing environment for infants in adverse situations among 101 women, the knowledge of neonatal care increased by 10% on the immediate post-test, especially regarding knowledge of umbilical cord care and temperature control. Maternal education ($p = 0.025$) and previous births ($p = 0.037$) correlated with higher post-test scores.[5]

A descriptive study was conducted among 35 mothers to assess their knowledge regarding the impact of hypothermia on neonatal mortality. According to the study, 6 mothers (17.14%) had inadequate knowledge, 25 mothers (71.4%) had moderately adequate knowledge, and 4 mothers (11.4%) had adequate knowledge regarding hypothermia and its impact on neonatal mortality. These results support the results of our study.[6]

Section C: Effectiveness of Structured Discharge Education Programme on Premature Infant Care at Home

The analysis of the results revealed that the mean post-test knowledge score (2.68, SD = 4.4) was more as compared to the mean pre-test knowledge score (1.28, SD = 9.4). The paired t test value (16.96) was greater than the tabulated value (1.671) and was statistically significant at a 5% level ($p < 0.05$).

The mean post-test practice score (16.43, SD = 3.21) was greater than the mean pre-test practice score (9.88, SD = 2.80). This was found to be statistically significant at a 5% level ($p < 0.05$) with the paired t test value (37.015) greater than the tabulated value (1.671).

The results of a study conducted by Sheoran et al. on the effectiveness of a planned health education programme regarding the risk factors and care of low birth weight babies were similar to those of this study in enhancing the knowledge and improving the practice of mothers.[7]

Section D: Association between Demographic Variables and Knowledge Level of Respondents on Premature Infant Care at Home

The findings of the analysis of knowledge scores with the selected sociodemographic variables showed that there was a significant association of the pre-interventional knowledge of participants with their educational status (4.4.3; $\chi^2 = 11.4647$, $p = 0.0095$), occupation (4.4.4; $\chi^2 = 9.2459$, $p = 0.0262$), family income per month (4.4.7; $\chi^2 = 16.7715$, $p = 0.0008$), birth weight of the baby (4.4.9; $\chi^2 = 11.5028$, $p = 0.0093$), gestational age of the baby (4.4.10; $\chi^2 = 11.9012$, $p = 0.0077$) and type of delivery (4.4.11; $\chi^2 = 9.8829$, $p = 0.0196$) at 0.05 level of significance, with the chi-square value being greater than the table value at $p = 0.05$.

The pre-interventional knowledge of respondents showed a non-significant association with other demographic variables like age (4.4.1; $\chi^2 = 5.323$, $p = 0.1496$), religion (4.4.2; $\chi^2 = 3.365$, $p = 0.3387$), type of family (4.4.5; $\chi^2 = 0.2873$, $p = 0.8662$), type of residence (4.4.6; $\chi^2 = 0.0192$, $p = 0.8897$) and birth order of child (4.4.8; $\chi^2 = 1.8814$, $p = 0.3904$) at 0.05 level of significance, with the chi-square value being less than the table value at $p = 0.05$.

These findings of our study are supported by the following studies:

A study was conducted by Mondlane et al. on skin-to-skin contact as a method of body warmth for infants of low

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birth weight. Its findings revealed that mothers with two or more children (85%) had more knowledge than mothers with a single child (81%).[4]

Another study conducted by Thakur and Kumar on the delivery and newborn care practices in urban slums showed that the majority (61.25%) of mothers from nuclear families had more knowledge than those from joint families.[8]

The findings were supported by a similar study conducted by Begum et al. on the socio-economic factors and knowledge influencing newborn care practices among mothers. The results showed that the majority of mothers were in the age group of 21-25 years.[9]

Conclusion

This study showed that the knowledge and practice of premature infant mothers in the post-test was more than that in the pre-test, which proves that a structured discharge education programme helps in improving the knowledge and practice of mothers regarding the care of premature infants at home. A statistically significant association of pre-interventional knowledge of mothers with their educational status, family income/month, birth weight of infants, gestational age of the baby, and type of delivery was also observed.

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Conflict of Interest: None

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