Original Research Article

The Impact Of Structured Health Education On Mothers' Knowledge Regarding Preterm Infant Care At Home

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Abstract

Background: Premature newborns (born before 32 weeks, excluding extremely preterm babies) are at risk for short- and long-term issues, including impairments and growth and mental development obstacles. Preterm babies have fluctuating temperatures, breathing problems, and feeding issues, making them challenging to care for. The study aimed to determine if structured health education improved mothers' understanding of premature baby care at home.

Objectives:
1. Evaluate mothers' knowledge of premature baby home care.
2. Evaluate the impact of structured health education on mothers' understanding of premature newborn care.
3. Find the association between mothers' home care knowledge and demographic characteristics.

Material & Method: This study used a quantitative pre-experimental one-group pre-test post-test design in Krishna hospital, Karad. It includes 30 premature baby mothers selected using purposive sampling. Using a structured interview schedule, data was collected, structured health education was provided, and pre- and post-test knowledge scores were assessed.

Result: Maximum mothers had average pre-test knowledge, the survey found. Post-test results for mothers were high. Mean post-test score was 26.46 with an SD of + 1.97, considerably higher than pre-test score of 11.96 with an SD of + 2.72. The t-test value was 24.07 and p-value was 0.05, which is significant. There was no connection between mother's home care knowledge and demographic characteristics.

Conclusion: After health education, moms' understanding of home care for premature babies improved, which can reduce morbidity and mortality rates.

Keywords: Structured health education, home care, premature baby and mothers

Introduction

The term "low birth weight" (LBW) was developed by the World Health Organization and refers to a birth weight that is less than 2500 grammes. According to a report from UNICEF, the estimated prevalence of low birth weight in India is thirty percent [1]. When a woman gives birth when less than 37 weeks of gestation have been completed, the medical name for this is called preterm birth. Premature birth is a significant source of infant death and morbidity around the world and globally, with around 15 million newborns being born prematurely each year [2]. The aetiology of more than half of all premature deliveries is not known; however, certain disorders that affect mothers, such as gestational diabetes mellitus, polyhydramnios and pre-eclampsia, as well as maternal chronic conditions such as hypertension and diabetes, are linked to premature delivery [3]. Caring for a baby that was born prematurely can be a stressful experience for parents. Numerous studies have shown that parents of premature infants have higher levels of stress and have more difficulty parenting than parents of babies who were delivered full term [4]. Postnatal moms typically are not in good physical shape, and they often complain that they do not have sufficient time to rest and sleep. As a result, they are unable to properly care for their children, and they frequently experience feelings of exhaustion. In comparison to moms who have healthy kids, those who have delivered their babies prematurely confront a greater number of obstacles [5]. Babies who are born prematurely suffer from a range of health problems, including the immaturity of their key organs. These babies frequently require further care and support after they are discharged from the hospital [6]. It is difficult for a mother to take care of a preterm baby because preterm babies have temperature irregularities, breathing difficulties, and feeding difficulties. Therefore, a mother should be able to take care of the baby in situations such as thermal care, which involves wrapping and drying the baby, covering the baby's head, providing skin-to-skin care and giving breast milk, all of which are essential for a preterm baby [7]. Every single year, there are 15 million babies who are born earlier than the typical gestational age. This accounts for more than one in ten of all newborns. Nearly one million children under the age of five die every year as a direct result of complications that stem from premature delivery. This makes preterm birth the top cause of death among children under the age of five [8]. The immediate cause of post-discharge medical difficulties in premature and newborns that require readmission to the NICU is a lack of understanding on the part of mothers regarding the care requirements of a preterm neonate [9]. The mother's lack of basic understanding in the proper care of the preterm infant hinders the process of the infant's growth and development, which in turn leads to illness and subsequent readmission to the hospital for the child [10]. Therefore, taking into account the current scale and incidence, the researcher considered it necessary to create, carry out, and assess a systematic health education programme on the knowledge of how to care for premature babies and their mothers.

Materials & Methods

- **Method of research:** An analytical method of research was utilised for this study.
- **Methodology:** A quasi-experimental research methodology was applied to the study.
- Location of the research: It was carried out at a tertiary care facility (Krishna hospital), which is located in Karad.
- **Selection of samples and methods of sampling:** A total of 30 postnatal moms were chosen using purposive sampling.
- Those mothers who fulfilled the inclusion criteria, such as mothers of premature babies

admitted in NICU, babies weight (1500-2000 gms), while mothers with a previous history of preterm delivery, as well as health Professional mothers, and already trained mothers were excluded from this study.

▪ Those mothers who fulfilled the inclusion criteria, such as mothers of premature babies admitted in NICU, babies weight (1500-2000 gms).

Methods and tools for collecting data include

▪ Section 1 demographic data on study participants, including age, monthly income, educational status, residence, type of family, occupation, diet and gravida.
▪ Section 2 multiple choice questions on home care for premature babies.
▪ Section 3 open-ended questions on home care for premature babies.
▪ Approval on an Ethical Level Approval on an ethical level was received from KIMSDU, Karad. After that, approval was acquired from the Krishna Hospital & Medical Research Centre in Karad. Study participants gave their informed, written consent before taking part in the research.

Utilized statistical analysis is as follows: In order to contrast the two methods In order to determine whether or not there was a correlation between demographic factors and pre-test knowledge score, a paired t test was carried out. It was determined using the Chi Square test.

Results
Section I: An examination of the socioeconomic and demographic features of moms whose babies were born prematurely

Table 1: Distribution of mothers of premature baby according to their socio-demographic variables (N-30)

Sr. No.	Variables		Demographic Data	
			Frequency	Percentage
1.	Age			
		18-22	4	13.3
		23-27	11	36.6
		28-32	14	46.6
		Above 33	1	3.3
2.	Education			
		Primary	1	3.3
		Secondary	18	60
		Higher secondary	4	13.3
		Graduate	7	23.3
3.	Monthly Income			
		Below 5000	3	10
		6000-10000	15	50
		11000-15000	7	23.3
		Above 16000	5	16.6
4.	Residence			
		Urban	12	40
		Rural	18	60
5.	Diet			
		Vegetarian	8	26.6
		Mixed Diet	22	73.3
6.	Family type			
		Joint	21	70
		Nuclear	9	30

7.		Pregnancy		
		1st pregnancy	13	43.3
		2nd pregnancy	10	33.3
		3rd pregnancy	6	20
		4th pregnancy	1	3.3
8.		Occupation		
		Working	10	33.3
		Not working	20	66.6

According to Table 1, the majority of moms who participated in the study were between the ages of 28 and 32. This age range accounts for 46.60 percent of all mother participants. Sixty percent of the mothers had at least a secondary education. The majority of moms, fifty percent, had an income of between 6,000 and 10,000 rupees. The vast majority of moms (73.40%) were eating a varied diet and 70% of them came from joint families. The proportion of mothers living in rural areas was highest (56.70%). The majority of mothers were having their first child (43.40%), and 66.60% of them were unemployed.

Section II: Level of knowledge among mothers of premature baby

Table 2: Distribution of samples according to pre-test and post-test knowledge score

Grades	Score	Pre-test		Post-test	
		F	%	F	%
Poor	0-10	5	16.6	2	6.7
Average	11-20	23	76.7	7	23.3
Good	21-30	2	6.7	21	70

Table 2 shows that 16.6% of women had average knowledge, 76.7% had below-average knowledge, and 6.7% had above-average knowledge on the care of preterm babies before the exam. Whereas, in the post-test, 70 percent of moms had strong knowledge, 23.3 percent had moderate knowledge, and 6.7 percent had inadequate understanding about how to care for preterm babies.

Section III: Effectiveness of a Structural Health Education Program on Knowledge of Care for Premature Babies among Mothers Having Premature Babies

Table 3: Mean, Standard Deviation, Mean Difference and paired pre-test and post-test scores of mothers of premature baby

Pre-test		Post-test		Mean difference	Paired "t" value	P value
Mean	SD	Mean	SD			
11.96	2.72	26.46	1.97	14.5	24.07	0.0001

According to Table No. 3, the mean score and standard deviation for the pre-test were 11.96 and 2.72, respectively. The standard deviation (SD) was 1.97, and the mean score after the exam was 26.46. The level of knowledge was much higher after the post-test, as measured by a mean difference of 14.5 points, and the calculated paired "t" test value of 24.07 was judged to be extremely significant at the P 0.0001 level.

Section IV: The Association of Mothers' Knowledge Scores Regarding Home Care for Premature Babies with Selected Demographic Variables

Table 4: Association of knowledge scores of mothers regarding home care of premature baby with the selected demographic variables

Demographic variables		Poor	Average	Good	Chi-square value	P value
Age	18-22	0	3	1	4.254	0.6424
	23-27	2	8	1		
	28-32	3	11	0		
	Above 33	0	1	0		
Education	Primary	0	1	0	6.406	0.3793
	Secondary	1	15	2		
	Higher secondary	1	3	0		
	Graduate	3	4	0		
Monthly Income	Below 5000	1	2	0	4.470	0.6134
	6000-10000	1	13	1		
	11000-15000	2	5	0		
	Above 16000	1	3	1		
Residence	Urban	2	9	1	0.09058	0.9557
	Rural	3	14	1		
Diet	Vegetarian	2	6	0	1.186	0.5527
	Mixed Diet	3	17	2		
Type of family	Joint	2	18	1	3.271	0.1948
	Nuclear	3	5	1		
No. of pregnancy	1st pregnancy	3	9	1	2.857	0.8266
	2nd pregnancy	2	7	1		
	3rd pregnancy	0	6	0		
	4th pregnancy	0	1	0		
Occupation	Working	3	6	1	2.393	0.3022
	Not working	2	17	1		

There was not a significant correlation between mothers' knowledge of home care for premature babies and the demographic characteristics that were selected, according to the data that is shown in table no. 4.

Discussion

The majority of the moms in the study were in the age range of 28-32 years old (46.60%). With a secondary education (60%) and the majority of moms having (50%) were having an income in the range of RS. 6000 to 10,000. The vast majority of the women (56.70%) live in rural areas, and 70% of them come from joint families. The majority of mothers were having their first child (43.40%), and 66.60% of them were unemployed.

In addition, the findings demonstrated that 16.6% of mothers had a low level of knowledge, 76.7% had an average level of knowledge and 6.7% had a strong level of knowledge about the care of preterm babies in the pre-test. Whereas, in the post-test, seventy percent of moms had strong knowledge, twenty-three point three percent had moderate knowledge, and six point seven percent had inadequate understanding about how to care for preterm babies. Also, the mean difference in the degree of knowledge between the pre-test and the post-test was 14.5, and the computed paired "t" test value was 24.07, which was discovered to be extremely significant at the P 0.0001 level.

This current study was backed by a study that was carried out by Kalaiarasi E *et al*. (2017). The pre-test revealed that the mother's knowledge on preterm care was 0%, which indicated

that the mother did not know anything about it. Following participation in the structured education programme, the majority of the moms' knowledge on preterm care increased to 90%. It was clear from the evidence that the mother's knowledge, attitude, and practises were deficient and inadequate before she participated in the organised education programme. Following the completion of the organised instruction programme, significant gains were made in both knowledge and attitude, as well as in practical application [11].

Additionally, a study conducted by A. Arzani and colleagues (2015) found that educational intervention can boost a mother's knowledge and expertise about the care of infants who were premature or had a low birth weight.

(The awareness scores of those in the experimental group increased from 53.154.99 before the intervention to 62.53.73 after the intervention; this difference was statistically significant) [5].

In addition, the findings indicated that there was no statistically significant association between mothers' knowledge of home care for premature babies and the demographic factors that were studied using a level of significance of p less than 0.05. The research that was carried out by AnushaMV (2017) demonstrates, however, that the majority of the moms 15 (50%) had knowledge that was just somewhat acceptable. There was a substantial correlation between the educational level of mothers and the amount of information they possessed about how to care for preterm infants. It is concluded that the knowledge and practises of mothers of preterm babies were not sufficient to offer the best care for their babies, which shows that there is a need for teaching moms of preterm babies regarding the care that should be provided for their babies [12].

This was also supported by other studies that had similar findings, such as Alwan SH *et al*. (2021), whose study results showed similar findings of the present study, in which 80% of mothers had a low level of knowledge in the pre-test, but in the post-test, 100% of mothers had a high level of knowledge [13]. In the present study, the structured health programme was found to be effective because the knowledge scores improved in both the pre and post scenarios.

According to the findings of the Sheoran AP *et al*. (2011) study, the mean post-test knowledge and practise score of the experimental group was considerably higher than the mean post-test knowledge and practise score of the comparison group. At the 0.05 level of significance, the computed r value of the post test was significantly higher than the pre-test computed r value of the experimental group, which indicates a strong positive relationship between post-test knowledge and practise scores. The computed r value of the post test was 0.714, while the pre-test computed r value was 0.138. As a result, it was possible to draw the conclusion that the educational programme was successful in boosting the knowledge as well as the practises of mothers in regard to risk factors and the care of kids who were born with a low birth weight [1].

Conclusion

According to the findings of this study, health education on how to properly care for premature babies at home led to an increase in maternal knowledge. A significant part in making moms aware of how to care for their premature babies is the provision of health education on the subject of premature baby care. A maternal education programme that is both carefully designed and executed, with the goals of bridging the knowledge gap about the care of preterm infants, ensuring the healthy transfer of preterm neonates to their homes, and alleviating family anxieties.

Conflicts of interest: No any.

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