

BIJNEER

Benziger International Journal of Nursing Education, Extension & Research

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EFFECTIVENESS OF AN INFORMATION BOOKLET ON KNOWLEDGE REGARDING NEONATAL WARNING SIGNS AMONG MOTHERS OF NEONATES ADMITTED TO PEDIATRIC DEPARTMENT

ABSTRACT

This study aimed to assess the effectiveness of an information booklet on knowledge regarding neonatal warning signs among mothers of neonates admitted to the pediatric department. The objectives were to assess baseline knowledge, evaluate the effectiveness of the information booklet, and determine the association between mothers' knowledge and selected socio-demographic variables. A quantitative research approach with a quasi-experimental pre-test-post-test control group design was adopted. Using purposive sampling, 150 mothers were selected and allocated to experimental and control groups. Data were collected using a demographic proforma and a self-structured questionnaire to assess knowledge regarding neonatal warning signs. A pre-test was conducted for both groups, following which the information booklet was administered to the experimental group on the same day, while the control group received routine care. The post-test was conducted on the fifth day for both groups. The effectiveness of the information booklet was analyzed using an independent t-test. Results revealed a statistically significant improvement in posttest knowledge scores among mothers in the experimental group compared with those in the control group ($t = 11.6, p \leq 0.001$), indicating the effectiveness of the intervention. Further analysis showed a significant association between mothers' knowledge levels and previous information regarding neonatal warning signs ($p \leq 0.001$). The study concludes that the information booklet was effective in improving mothers' knowledge of neonatal warning signs and highlights the importance of structured educational interventions in enhancing early recognition of neonatal complications. Keywords: effectiveness, information booklet, knowledge, neonatal warning signs.

INTRODUCTION

Neonatal danger signs are signs exhibited by sick neonates, as stated by the World Health Organization (WHO), which include inability to feed or cessation of feeding, convulsions, fast breathing, chest indrawing, high temperature, very low temperature, and signs of local infection such as umbilical redness or discharge of pus.¹

A warning sign is a sign that indicates a potential hazard, obstacle, or condition requiring special attention. Globally 10 million children under five years of age die every year. The majority of them die during the neonatal period. Among them 98% of these deaths occur in developing countries. It is also been noted that one-third of all neonatal deaths occur on the first day of life, almost half within three days and nearly three-fourths within the first week of life.²

Sick neonates can be identified early if their mothers have good knowledge of the key neonatal danger signs. Key neonatal danger signs are severe nonspecific manifestations of serious neonatal illness that must be recognized early and promptly managed. Knowing a minimum of three key danger signs help to give more specific and sensitive prediction of the need for hospitalizing neonates during illness.³

The fifth National Family Health Survey revealed that neonatal mortality rate in India has reduced to 26 per 1000 live births. 19 as a mother is the very first person to take care of neonates, it is important to teach the mother about the danger signs of neonates for early detection of the sufferings and to prevent neonatal mortality. Poor knowledge of newborn danger signs delays care seeking. Hence the study about awareness of danger signs in neonates is essential among mothers to identify the signs and take prompt treatment for better outcome of newborns.⁴

Objectives of the study

- 1.To assess the knowledge on neonatal warning signs among mothers of neonates admitted to paediatric department of selected hospital at Pathanamthitta district.
- 2.To assess the effectiveness of an information booklet on knowledge of mothers regarding neonatal warning signs.
- 3.To find the association between knowledge of mothers regarding neonatal warning signs and selected socio-demographic variables.

MATERIALS/ METHODS

Research approach: Quantitative Research Approach

Research design: Quasi experimental pre-test post-test control group design.

Setting of the study: MGM Muthoot Hospitals, Kozhencherry at the postnatal wards and paediatric ward.

Sample: Mothers of neonates who attend the postnatal ward and paediatric department of selected hospital.

Sample size: 150 mothers of neonates

Sampling technique: Purposive sampling technique

Inclusion criteria

- 1.Mothers having 1-28 -days-old child.
- 2.Mothers whose children are admitted in selected paediatric ward for minimum of 5 days.
- 3.Mothers who are in postnatal wards for minimum five days
- 4.Those who are able to read and write in Malayalam and English.

Exclusion criteria

- 1.Mothers of severely ill newborns
- 2.Mothers having newborns diagnosed with congenital

abnormalities.

3.PICU / NICU admitted newborn's mothers

Tool/ Instruments

The tool used in the study consisted of two sections:

Section A: Socio-demographic proforma including age of mother, education of mother, occupation of mother and place of residence.

Section B: Self-structured questionnaire to assess pretest and posttest knowledge of mothers regarding neonatal warning signs.

Data collection process

The data were collected from the selected hospital. After obtaining a formal permission from the authority concerned of the hospital, Postnatal & Paediatric wards were selected as setting for the data collection. 150 samples were selected using purposive technique. (75 in experimental & 75 in control group). The purpose of the study was explained to them and written informed consent was obtained. Pre-test was collected using self-structured questionnaire from mothers on the day when child got admitted in the hospital. On the same day of admission, information booklet on warning signs in newborn was given to mothers in experimental group. Post-test was conducted on the fifth day using same questionnaire for both experimental group and control group.

RESULT

Section 1: Description of demographic variables

Table 1: Distribution of mothers according to the demographic variables N=150

Demographic variables	Frequency	%
Age of mother		
18-24	46	30.7
25-32	51	34.0
33-40	23	15.3
41-48	30	20.0
Age of infant		
0-7 days	50	33.3
8 days-14 days	55	36.7
15 days-21 days	22	14.7
22 days -28 days	23	15.3
Education		
Post Graduate	73	348.7
Graduate	49	2.7
Higher secondary education	28	18.7
Occupation		
Government employee	37	24.7
Private employee	71	47.3

Self-employed	42	28.0
Place of residence		
Urban	36	24.0
Semi urban	71	47.3
Rural	43	28.7
Previous information		
Yes	34	22.7
No	116	77.3

Section II: Level of knowledge of mothers regarding neonatal warning signs.

Table 2: Distribution of mothers based on pretest level of knowledge

N=150

	Experimental group		Control group	
	Frequency	%	Frequency	%
Level of knowledge				
Good knowledge	0	0	0	0
Moderate Knowledge	8	10.7	5	6.7
Poor knowledge	67	89.3	70	93.3

With reference to above table 2, 10.7% of experimental group mothers during pre-test had moderate level of knowledge and 67(89.3%) had poor level of knowledge on warning signs in newborn whereas in control group mothers 5 (6.7%) had moderate level of knowledge and 70 (93.3%) had poor level of knowledge regarding neonatal warning signs.

Table 3: Distribution of mothers based on posttest level of knowledge score

N=150

	Experimental group		Control group	
	Frequency	%	Frequency	%
Level of knowledge				
Good knowledge	8	10.7	0	0
Moderate Knowledge	67	89.3	11	14.7
Poor knowledge	0	0	64	85.3

With reference to above table, 8 (10.7%) of experimental group mothers in post-test had good knowledge, 67 (89.3%) had moderate level of knowledge whereas in control group 11

(14.7%) had moderate knowledge and 64 (85.3%) had poor knowledge.

Table 4: Mean, standard deviation, paired t value of the pre-test and post-test knowledge scores of mothers regarding neonatal warning signs in experimental group.

N=150

Knowledge score	Mean	SD	df	t value
Experimental group				
Pretest	9.23	3.2	149	11.24***
Posttest	14.06	5.6		

***Significant at <0.001

With reference to above table, the t value shows that there is a statistically significant difference in the mean pre-test and post-test knowledge score regarding neonatal warning signs among mothers in experimental group after the intervention ($p < 0.001$). It is inferred that the information booklet was effective in improving knowledge of mothers regarding warning signs in newborn.

Table 5: Mean, standard deviation, independent t value of the post-test knowledge value of mothers regarding warning signs in experimental and control group

N=150

Posttest Knowledge score	Mean	SD	df	t value
Experimental group	14.06	5.6	148	11.6***
Control group	3.08	2.61		

***Significant at <0.001

With reference to the above table, the independent t-test indicates a statistically significant difference between the mean post-test knowledge scores on neonatal warning signs among mothers in the experimental and control groups. This finding suggests that the information booklet was effective in improving mothers' knowledge regarding newborn warning signs.

Section IV: Association between level of knowledge of mothers regarding warning signs in newborn and selected socio demographic variables.

Table 7: Association between level of knowledge of mothers regarding warning signs in neonates and socio demographic variables.

N=150

Demographic variables	Moderate		Poor		df	χ^2
	f	%	f	%		
Age of mother						
18-24	6	13.0	40	87	3	0.163 (NS)
25-32	6	11.8	45	88.2		
33-40	1	4.3	22	95.7		
41-48	0	0	30	100		
Age of an infant						
0-7 days	5	10	45	90	3	0.271 (NS)
7days-14 days	7	12.7	48	87.3		
14 days-21 days	1	4.5	25	95.5		
21days -28 days	0	0	23	100		
Education of mother						
Post Graduate	3	4.1	70	95.9	2	0.080 (NS)
Graduate	5	10.2	44	89.8		
Higher secondary education	5	17.9	23	82.1		
Occupation of mother						
Government employee	5	13.5	32	86.5	2	0.190 (NS)
Private employee	7	9.9	64	90.1		
Self-employed	1	2.4	41	97.6		
Place of residence						
Urban	4	16.7	30	83.3	2	0.143 (NS)
Semi urban	4	5.6	67	83.3		
Semi urban	3	7	40	93		
Previous information						
Yes	7	20.6	27	79.4	1	0.001***
No	6	5.2	110	94.8		

NS- Not significant, $p < 0.001$ ***Highly significant

The chi-square value shows that no significant association between knowledge of mothers and age of mother, age of infant, education and occupation of mother and place of residence ($p > 0.05$). The chi square value shows that there is a significant statistical association between knowledge of mothers and previous information ($p \leq 0.001$)

DISCUSSION

The first objective of the study was to assess the knowledge of mothers regarding neonatal warning signs. 10.7% of experimental group mothers during pre-test had moderate level of knowledge and 89.3% had poor level of knowledge on warning signs in newborn where as in control group mothers 6.7% had moderate level of knowledge and 93.3% had poor level of knowledge regarding neonatal warning signs. 10.7% of experimental group mothers in posttest had good knowledge, 89.3% had moderate level of knowledge where as in control group had 14.7% had moderate knowledge and 64 (85.3%) had poor knowledge.

The findings were supported by findings of study to assess the behavioral factors of mothers influencing acute diarrhea in under five children in rural part of Kerala, India. 61 out of 110 had average knowledge regarding danger signs in neonate illness, and only 42 out of 110 mothers had good knowledge.

The second objective of the study was to assess the effectiveness of information booklet on knowledge of mothers regarding neonatal warning signs among mothers. it was found that the mean pretest knowledge score of mothers before intervention was 9.23 with standard deviation 3.2 and mean post-test knowledge score after intervention was 14.6 with standard deviation of 5.6. the t value shows that the difference in mean pre-test and post-test was statistically significant ($t = 11.24$, $p \leq 0.001$). There is statistically significant difference in the mean pre-test and post-test knowledge score regarding neonatal warning signs among experimental group mothers.

The findings of the present study were consistent with the findings of the study (2014) regarding information on neonatal dangers of the postnatal mothers during their antenatal clinic attendance by the health care provider. Majority of mothers 350 (84.5%) identified less than 3 neonatal danger signs. Hotness of the body (fever) was the commonly recognized danger signs by 310 (74.9%) post-natal mothers. Out of 414 mothers 193 (46.6%), 166(40.1%), 146 (35.3%) and 24(5.8%) identified difficulty in breathing, poor sucking, jaundice and lethargy/unconsciousness as newborn danger signs respectively. Only 46 (11.1%) and 40 (9.7%) identified convulsion and hypothermia as newborn danger signs respectively. Knowledge of neonatal danger signs was low among mothers attending well baby clinic despite the information being available in the MCH booklet provided to the mothers during the antenatal clinics⁶.

The third objective of the study was to find the association

between knowledge of mothers regarding neonatal warning signs and selected baseline variables. The present study states that the chi square value shows that there was statistically significant association between knowledge of mothers regarding warning signs in newborn and selected socio-demographic variable – previous knowledge $p \leq 0.001$.

These findings were supported by the study, a total of 360 participants 186 (51.7%) of mothers were found to have a good knowledge about neonatal danger signs. Having antenatal care follow-up (AOR=6.35, 95% CI:4.084, 17.206) and having college and above level of education (AOR=2.071, CI:1.311-14.690) were significantly associated with a good knowledge of neonatal danger signs and getting post-natal care was a [predictor of good health seeking behavior (AOR=3.720, 95% CI:2.876, 13.377). antenatal care follow-up and mothers' level of education were contributing factors for good knowledge of neonatal danger signs and postnatal care was a significant factor for health seeking behaviors of mothers. Therefore, the antenatal and postnatal healthcare workers should educate mothers on various reproductive health issues⁷.

CONCLUSION

The study found that 89.3% experimental mothers had poor level of knowledge on warning signs in newborn where as in control group 93.3% mothers had poor level of knowledge regarding neonatal warning signs. Knowledge of mothers regarding warning signs in newborn helps in identifying warning signs in newborn. Information booklet by the investigator improved mothers' knowledge regarding warning signs in newborn which will enable them in seeking early intervention for management of warning signs.

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