



Research Article

Effectiveness of Structured Teaching Program on Knowledge of Antenatal Mothers Regarding Selected Newborn Danger Signs

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Abstract

Aim: The aim of the study was to assess the existing knowledge of antenatal mothers regarding selected newborn danger signs and to find out the effectiveness of structured teaching program on knowledge regarding selected newborn danger signs among antenatal mothers. **Design:** Quasi-experimental one group - pre-test post-test design without a control group. **Setting:** Participants were recruited from Fortis Hospital, Bannerghatta Road, Bengaluru. **Participants:** Nonprobability purposive sampling techniques were adopted to select the 60 antenatal mothers. **Methods:** Pre-test was conducted to assess the knowledge of antenatal mothers regarding selected newborn danger signs using structured knowledge questionnaire. Administration of structured teaching program on selected newborn danger signs is done for antenatal mothers. Day 7 post-test was done using the same structured knowledge questionnaire. **Results:** The study revealed that structured teaching program on prevention and management of selected newborn danger signs among antenatal mothers was effective in enhancing knowledge of antenatal mother as indicated by significant 0.05 level of significance. There was a statistically significant association between the knowledge and selected demographic variable of antenatal mothers. **Conclusion:** Structured teaching program was effective in increasing the knowledge of antenatal mothers regarding selected newborn danger signs.

Key words: Antenatal mother, effectiveness, knowledge, newborn danger signs, structured teaching program

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Introduction

A healthy newborn is born at term between 38 and 42 weeks, cries immediately after birth, establishes independent respiration, quickly adapts with extrauterine environment. The newborn period includes the time from birth to 28 days of life.^[1] During this time, newborns must make many physiological and behavioral adaptations to

extrauterine life. A newborn baby's survival depends on his ability to adapt to an extrauterine environment.^[2]

Newborn period is the most critical period of life many complication and deaths may occur.^[4] Newborns are delicate and have distinct health problems with high morbidity and mortality demanding specialized health-care facility.^[3] They need optimal care for improved survival. Newborn care is highly cost-effective because saving the life of a newborn baby is associated with survival and productivity of future adults.^[1]

Common danger signs in newborn which requires immediate care and accounts for morbidity these danger signs include poor or no sucking, lethargy or drowsiness, rapid or difficulty breathing, hypothermia and hyperthermia, jaundice, abdominal distension, bleeding from umbilical cord, diarrhea, convulsion, and vomiting. Most of the signs of illness in newborns are non-specific. Nurse need to know the danger signs of a sick newborn. She can explain these signs to mother or family member in a simple language so

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as to enable them to identify the danger signs and to seek early and prompt medical help.^[5]

Almost 99% of newborn deaths occur in the developing world. The new study found that in part due to their large populations, more than half of these deaths now happen in just five large countries - India, Nigeria, Pakistan, China, and the Democratic Republic of the Congo.^[4]

The report released recently at the national conference on child survival and development in New Delhi (2005) claims that roughly 26 million children's born in India each year. In India, the neonatal mortality rate (NMR) dropped significantly from 69/1000 live births in 1980 to 53/1000 live births in 1990.^[6] In recent years; however, the NMR has remained static decreasing only from 48 to 44 per 1000 live births from 1995 to 2000. According to the report, the current neonatal mortality is 44/1000 live births in India.^[7] Orissa and Madhya Pradesh are among worst of with NMR of 61 and 59, respectively. During 2015 the infant mortality rate was 37/1000 live births. India contributes to one-fifth of global live births and more than a quarter of neonatal deaths. Nearly, 0.75 million neonates died in India in 2013, the highest for any country in the world. The current NMR is 28/1000 live births.^[4]

Objective

The objectives are as follows:

- To assess the knowledge of antenatal mothers regarding selected newborn danger signs.
- To find out the effectiveness of structured teaching program on knowledge regarding.
- Selected newborn danger signs among antenatal mothers.
- To find out the association between the pre-test and post-test knowledge scores of antenatal.

Mothers regarding selected newborn danger signs and selected demographic variables.

Hypothesis

- H₁: There is a significant difference between pre- and post-test knowledge scores of antenatal mothers regarding selected newborn danger signs.
- H₂: There is a significant association between pre-test and post-test knowledge scores of antenatal mothers regarding selected newborn danger signs and selected demographic variables.

Materials and Methods

Research design

Group	Pre-test (day 1)	Intervention	Post-test (day 7)
Experimental group	Pre-test	Structured teaching program	Post-test

Research setting

The study was conducted at Fortis Hospital Bengaluru. Antenatal mothers who were in third-trimester attending maternity ward and Outpatient Department at Fortis Hospital, Bannerghatta Road, Bengaluru.

Sample and sample size

Sample refers to all the third-trimester antenatal mothers in the selected hospitals Bengaluru, in the present study 60 antenatal mothers were recruited.

Sampling technique

Non-probability convenient sampling technique was used for the study.

Description of tool and scoring

Section A

It contains the items of demographic characteristics of antenatal mothers comprising of age (years), educational status, religion, family income, type of family, place of residence, occupation, gestational age, numbers children, and previous source of knowledge regarding selected newborn danger signs.

Section B

It includes 45 structured knowledge questionnaires of which five items were related to general information about newborn danger signs, six items related to vomiting; 12 items related to diarrhea, eight items related to hypothermia, five items related to hyperthermia, and nine items related to jaundice.

Results

In the present study, the majority of the antenatal mothers, i.e., 30 (50%) are in the age group of 26–30 years, 24 (40.0%) are in the age group of 21–25 years, and only 6 (10.0%) are in the age group of >30 years. In the present study, it can be seen that the majority of antenatal mothers 44 (73.3%) were living in a nuclear family and 16 (26.7%) were living in joint family. 60 (100%) were living in an urban area and none of them were living in a rural area. In the present study, it was observed that out of 60 antenatal mothers majority of them 31 (51.7%) have completed the degree, 20 (51.7%) of them were postgraduates, and 9 (15.0%) of them completed PUC. Majority of antenatal mothers 43 (71.7%) were a private employee and 17 (28.3%) were homemaker. 37 (61.7%) have a family income between 25,001 and 50,000 rupees, 12 (20.0%) of them have a family income of ≤25,000 and 11 (18.3%) of them have a family income of >50,000. Majority of antenatal mothers 36 (60.0%) were in the gestational week between 36 and 40 weeks, 14 of the antenatal mothers (23.3%) were in the gestational week between 31 and 35, and 10 (16.7%) were in the gestational week of >40. It was found that out of 60 antenatal mothers majority of them 50 (83.3%) were pregnant for 1st time and 10 (16.7%) had one child.

It can be seen from Table 1, in the pre-test the range was from 11 to 27, median was 16.5 and overall mean pre-test score was 17.33 with a Standard deviation (SD) of 3.67 indicating a homogeneous distribution of pre-test score and mean% was 38.52.

In the post-test the range was 26–41, with a median of 33.5, the mean post-test score was 33.27 with the SD of 3.29 and mean% was 73.92 indicating a significant improvement in the knowledge score after the administration of structured teaching program.

From Table 3, it can be seen that in term of overall knowledge score, mean pre-test score was 17.33 with SD of 3.67 and mean post-test score was 33.27 with SD of 3.29 the observed *t*-value of 55.503 was more than the table value indicating there is a significant difference between overall post-test score and pre-test score.

In Table 2, it can be seen that 30 of the antenatal mothers (50.0%) had moderately adequate knowledge, and 30 of

the antenatal mothers (50.0%) had adequate knowledge regarding selected newborn danger signs following structured teaching program which shows that there is a significant improvement in the knowledge following structured teaching program. The overall pre-test knowledge score, the maximum score can be gained is 45. The overall mean pre-test score was 17.33 with SD of 3.67 and mean% 38.52 whereas the overall mean post-test score was 33.27 with a SD 3.29 and mean% 73.93 indicating overall enhancement of 91.92% in terms of knowledge score following structured teaching program.

Limitations

The following points were beyond the control of the investigator:

- The study is limited only those who are willing to participate in the study.
- Study samples were small.
- There were time limitations to complete the study.
- The study was limited to the experience of the researcher.

Table 1: Overall comparison of the pre-test and post-test knowledge score with mean, median, SD range, and mean (%)

Knowledge score	Range	Median	Mean	SD	Mean (%)
Overall pre-test score	11–27	16.5	17.33	3.67	38.52
Overall post-test score	26–41	33.5	33.27	3.29	73.93

SD: Standard deviation

Table 2: Comparison of pre-test and post knowledge scores of antenatal mothers regarding selected newborn danger signs

Area wise knowledge score	Pre-test		Post-test		<i>t</i> value	<i>P</i> value
	Mean	SD	Mean	SD		
General components of newborn danger signs	2.92	0.87	4.25	0.54	12.649	0.001
Vomiting	2.38	0.99	4.42	0.81	15.373	0.001
Diarrhea	4.27	1.65	8.70	1.34	27.101	0.001
Hypothermia	2.72	1.15	6.08	1.05	27.276	0.001
Hyperthermia	1.78	0.88	3.48	0.77	18.825	0.001
Neonatal jaundice	3.27	1.33	6.33	1.26	15.778	0.001
Overall knowledge score	17.33	3.67	33.27	3.29	55.503	0.001

SD: Standard deviation

Table 3: Area wise comparison of mean, SD and mean% of pre-test and post-test knowledge scores of antenatal mothers regarding selected newborn danger signs *n*=60

Area wise knowledge score	Pre-test			Post-test			Percentage of enhancement
	Mean	SD	Mean (%)	Mean	SD	Mean (%)	
General components of newborn danger signs	2.92	0.87	58.33	4.25	0.54	85.00	45.71
Vomiting	2.38	0.99	39.72	4.42	0.81	73.61	85.31
Diarrhea	4.27	1.65	35.56	8.70	1.34	72.50	103.91
Hypothermia	2.72	1.15	33.96	6.08	1.05	76.04	123.93
Hyperthermia	1.78	0.88	35.67	3.48	0.77	69.67	95.33
Neonatal jaundice	3.27	1.33	36.30	6.33	1.26	70.37	93.88
Overall knowledge score	17.33	3.67	38.52	33.27	3.29	73.93	91.92

SD: Standard deviation

- The relevant study was scanty as very few nursing studies were conducted on selected newborn danger signs.
- The study was confirmed to only on the selected hospital, which obviously imposed limits to larger generalizations.

Discussion

A study was conducted on community-based approach to improve health-care seeking for newborn danger signs in rural Wardha, India. A triangulated research design of quantitative and qualitative method was undertaken for needs assessment in the year 2004. In community mobilization, women's self-help group; Kishori panchayat, kisan vikas manch and village coordination committees were formed in the study area. Pregnant women and group members were given health education. The follow-up assessment is done in the year 2007, a triangulation of quantitative survey and qualitative study was undertaken to find out changes in health-care seeking behavior of mothers. The trained social worker interviewed 393 mothers. There was a significant improvement in the mother's knowledge regarding newborn danger signs, as evidenced by increased knowledge of poor sucking from 147 (36.4%) to 242 (61.6%), jaundice from 113 (27.9%) to 156 (39.3%), diarrhea from 52 (12.9%) to 231 (58.8%), difficulty in breathing from 47 (11.6%) to 328 (83.5%), and hypothermia from 56 (13.9%) to 166 (42.2%), respectively. There was a significant improvement in mother's knowledge regarding newborn danger signs. The monitoring over 3 years period showed an encouraging trend in the level of awareness among pregnant women.^[6]

A study was conducted by Dongre AR, Deshmukh PR, Garg BS. To find out awareness of antenatal mothers about newborn danger signs and their health care-seeking behavior for a sick newborn in Peri-urban field practice area of urban health center Wardha. Triangulated studies of the qualitative and quantitative method were undertaken. The structured questionnaire was used to assess the knowledge and health-care seeking behavior of mothers. The majority that is 55 (76.4%) antenatal mothers identified fever as a newborn danger sign. Out of 72 mothers, 29 (40.3%), 16 (22.2%), and 10 (13.9%) identified difficulty in breathing, diarrhea, and vomiting as newborn danger signs, respectively. Only 7 (9.7%) and 2 (2.8%) identified convulsion and hypothermia as newborn danger signs, respectively. About 27 (37.5%) babies were sick during the newborn period. Considering the poor awareness of antenatal mothers regarding newborn danger signs, there is a need for raising awareness building which requires for early recognition and prompt treatment.^[8]

A study was conducted on danger signs of neonatal illnesses perception of mothers, caregivers and health workers in Northern India. The study was carried out in a rural community in Sarojini Nagar block, Uttar Pradesh, India. Using triangulated qualitative and quantitative research design among 200 antenatal mothers and care givers. Study participants were antenatal mothers, mothers, grandmothers, grandfathers, and fathers caring for newborn's and recognized health-care providers serving the area. Out of 200 antenatal mothers and caregivers, 183 (91.5%), 73 (36.5%), 131 (65.5%), and 138 (69.0%) identified fever, jaundice, diarrhea, and vomiting as newborn danger signs, respectively. Only 5 (2.5%), 19 (9.5%), and 5 (2.5%) of them recognized bleeding from cord, low temperature, and convulsion as newborn danger signs, respectively. Seventy-nine (39.5%) of caregivers have seen a sick neonate in the family in the past 2 years. Health care was sought for 46 (23%) newborns. There was no universal recognition of danger signs in the neonate.^[3]

Conclusion

The administration of a structured teaching program helped the antenatal mothers to understand more about selected newborn danger signs. The structured teaching program was proved to be an effective method of transferring information.

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