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Research Article

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Newborn Resuscitation Among Staff Nurses Those Who are Working in Pediatric and Neonatal Intensive Care Units in Selected Hospitals, in Haridwar, Uttarakhand

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A B S T R A C T

Neonatal asphyxia accounts for 20.9% of neonatal death. Although the vast majority of newly born infants (90%) do not require intervention to breathe during the transition from intrauterine to extrauterine life, approximately 10% of the newborns require some assistance to begin breathing at birth, and about 1% require extensive resuscitation measures.

Keywords: Neonatal Asphyxia, Neonatal Mortality, Birth Asphyxia, Neonatal Resuscitation, Newborn, Birth Breathing, Respiratory Assistance, Neonatal Emergency, Infant Resuscitation, and Perinatal Care

Introduction

Globally, about one quarter of all neonatal deaths are caused by birth asphyxia. In this document, birth asphyxia is defined simply as the failure to initiate and sustain breathing at birth. Effective resuscitation at birth can prevent a large proportion of deaths. The need for clinical guidelines on basic newborn resuscitation, suitable for settings with limited resources, is universally recognised. WHO had responded to this need by developing guidelines for this purpose that are contained in the document. Basic newborn resuscitation: Neonatal Asphyxia accounts for 20.9% of neonatal deaths. Although the vast majority of newly born infants (90%) do not require intervention to breathe during the transition

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from intrauterine to extrauterine life, approximately 10% of the newborns require some assistance to begin breathing at birth, and about 1% require extensive resuscitative measures. The goals of neonatal resuscitation are to prevent the morbidity and mortality associated with hypoxic-ischaemic tissue (brain, heart, kidney) injury and also to re-establish adequate spontaneous respiration and cardiac output. A rapid assessment of newly born infants who do not require resuscitation can generally be identified by the following four characteristics: Was the infant born after a full-term gestation? . Is the amniotic fluid clear of meconium and evidence of infection? 3. Is the infant breathing or crying? Does the infant have good muscle tone? If the answer to any of these assessment questions is 'no', there is a general agreement that the infant should receive one or more of the following four categories of action in sequence: 1. Initial steps in stabilisation (provide warmth, position, clear airway, dry, stimulate, reposition) 2. Ventilation 3. Chest compressions 4. Administration of epinephrine and/or volume expansion The decision to progress from one category to the next is determined by the simultaneous assessment of three vital signs: respiration, heart rate and colour. Approximately 30 seconds is allotted to complete each step, re-evaluate and decide whether to progress to the next step. Although the Apgar score is a simple useful guide to neonatal well-being and resuscitation, it is only a guide. It is useful to convey the information about a newborn's overall status and response to resuscitation at the time points during resuscitation. The one-minute score correlates well with acidosis and survival. The five-minute score may or may not be predictive of the neurological outcome.

In high-risk births, the majority of newborns requiring resuscitation can be identified before birth. If the need for resuscitation is anticipated, additional skilled personnel should be recruited and the necessary equipment prepared. A team of skilled personnel is required at the delivery of the baby — one for position suctioning and drying, others for airway and endotracheal intubation, and a fourth for medication. If a pre-term delivery (< 37 weeks of gestation) is expected, special preparations will be required.

The objective of the study is to ensure that newborns in resource-limited settings who require resuscitation are effectively resuscitated. These guidelines will inform WHO training and reference materials such as Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice; the Essential newborn care course; Managing newborn problems: a guide for doctors, nurses and midwives; and the improvement of hospital care for children and the development or adaptation of national or local guidelines, standards and training materials on newborn resuscitation care.

Material and Methodology

The below figure shows the research design used for the study to take place

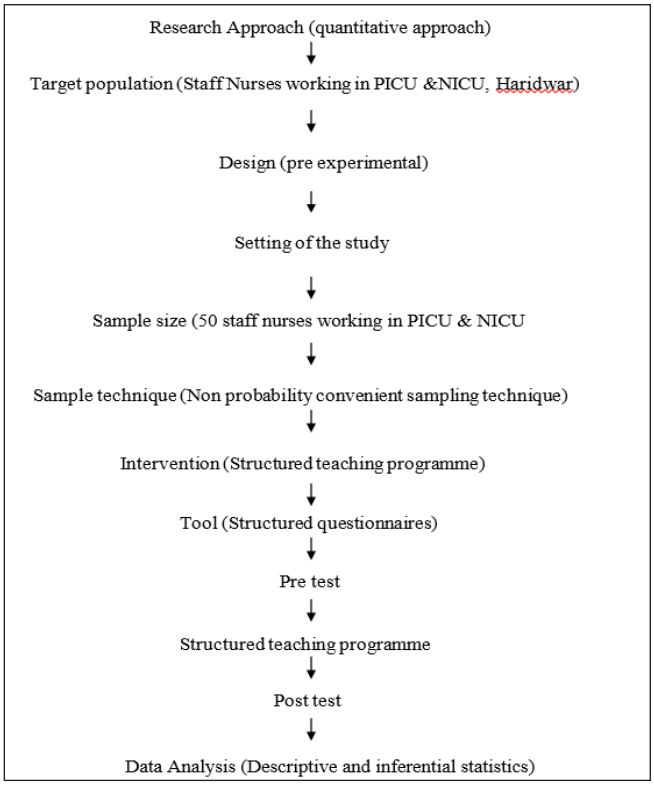


Figure 1.Schematic Presentation of Research Design

Results and Discussions

In this study table (1), which shows the major finding of the study demographic data detail according to their age group, it depicts that the highest percentage of staff nurses, 50%, were in the age group of 21–23 and less in the age group of 24–26; the percentage of staff nurses was 2%.

According to their sex, higher percentages (98%) of staff nurses were females, and 2% were male. It seems that most of the samples were females. These findings are supported by the fact that the majority of staff nurses' parents were as 82% have intermediate and above and 0% were illiterate. It seems that 2% of parents are primary and 16% of parents are higher secondary educated.

Percentage-wise distribution of staff Nurses in relation to their highest percentage, 62% of staff, got the information from the book. Whereas 24% are from health personnel and 14% from mass media.

Percentage-wise distribution of staff Nurses in relation to their reveals that of staff nurses are having past experience through other resources, whereas 28% of staff Nurses having live experience, and the rest of the 4% of staff nurses attained a workshop regarding neonatal resuscitation.

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Percentage-wise distribution of staff Nurses in relation to personality reveal that the highest percentage, 68%, of staff Nurses are extroverted personalities, and 32% of staff Nurses had introverted personalities.

Objective 1: To assess the preexisting knowledge of staff nurses working in PICU & NICU regarding newborn resuscitation by conducting a pre-test.

Data presented in table 2 shows a 38% sample score ranging below 50% (inadequate knowledge), and 24% had a score between 51 and 75% (moderate knowledge), which shows the majority of the sample are having an inadequate level of knowledge in the pre-test, and 88% of the sample had a score ranging between 76% and 100% (adequate knowledge), and 12% had a score between 51 and 75% (moderate knowledge), and 0% of the sample had a score < 50% (inadequate knowledge) in the post-test. It clearly indicates that there was an increase in the level of knowledge after the structured teaching programme.

Objective 2: To assess the effectiveness of a structured teaching programme on newborn resuscitation among staff nurses working in PICU & NICU by comparing pre- and post-test knowledge scores.

Data shown in table no. 3 revealed that the mean post-test knowledge score value among staff nurses was significantly higher than the mean pre-test value. The calculated "t" value (27.58) is more than the table value at the 0.05 level of significance. Therefore, it can be said that the structured teaching programme was effective in increasing knowledge level among staff nurses.

Hence, the hypothesis (H2) is accepted.

*Table value may vary according to degree of freedom (df).

Objective 3: To find out the association between post-test knowledge scores of staff nurses working in PICU & NICU with selected demographic variables.

That there was not a significant association between knowledge among staff nurses and demographic variables at the 0.05 level of significance.

Hence, the research hypothesis (H3) was rejected.

It can be concluded that the mean post-test knowledge score value among staff nurses was significantly higher than the mean pre-test value. The calculated "t" value (27.58) is more than the table value at the 0.05 level of significance. Therefore, it can be said that the structured teaching programme was effective in increasing knowledge level among staff nurses working in PICU &NICU.

The structured teaching programme is effectively improving the level of knowledge of the knowledge.

Table 1.Demographic Characteristics of Staff Nurses (N = 50)

S.No	Demographic Variables	Category	Frequency (f)	Percentage (%)
1	Age (Years)	21–23	25	50%
		24–26	1	2%
		Others	24	48%
2	Sex	Female	49	98%
		Male	1	2%
3	Educational Status of Parents	Illiterate	0	0%
		Primary	1	2%
		Higher Secondary	8	16%
		Intermediate & Above	41	82%
4	Source of Information	Books	31	62%
		Health Personnel	12	24%
		Mass Media	7	14%
5	Previous Experience Regarding Neonatal Resuscitation	Other Resources	34	68%
		Live Experience	14	28%
		Workshop Attended	2	4%
6	Personality Type	Extroverted	34	68%
		Introverted	16	32%

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Table 2.Distribution of Staff Nurses According to Level of Knowledge in Pre-Test and Post-Test (N = 50)

S.No	Level of Knowledge	Score Range	Pre-Test Frequency (f)	Pre-Test Percentage (%)	Post-Test Frequency (f)	Post-Test Percentage (%)
1	Inadequate Knowledge	< 50%	19	38%	0	0%
2	Moderate Knowledge	51% – 75%	12	24%	6	12%
3	Adequate Knowledge	76% – 100%	19	38%	44	88%
	Total		50	100%	50	100%

Table 3.Comparison of Pre-Test and Post-Test Knowledge Scores Among Staff Nurses (N = 50)

S.No	Knowledge Test	Mean Score	Mean Difference	Calculated 't' Value	Table Value	Level of Significance	Interpretation
1	Pre-Test	—	—	—	—	—	—
2	Post-Test	—	—	27.58	2.01*	0.05	Significant
3	Result						Structured Teaching Programme was effective in improving knowledge among staff nurses.

Conclusion

On the basis of findings, the study below said conclusion was drawn. It also brings out the limitation of the study in the picture.

The pre-test knowledge score was lower among staff nurses working in PICU and NICU. After the structured teaching programme, the knowledge score was increased. So, it is effective.

From the finding of the study, it can be concluded that the highest percentage of staff Nurses in the age group of 18–20 years, and most of them were females.

Education of nurses reveals that a high test percentage had intermediate and above. Highest percentage of staff Nurses had theirs; most of the staff nurses (82%) had theirs, and the highest percentage of staff Nurses had extroverted personalities.

During the post-test analysis, it was revealed that most of the staff nurses have adequate knowledge, and some have moderate knowledge. Based on the pre-test and post-test assessment, a significant difference ($p<0.05$) is found between the pre-test and post-test scores. It was demonstrated by using the 't' test that the structured teaching programme was effective.

The association between the post-test knowledge score and selected demographic variables was found by using a chi-square test, which shows there was not a significant association of the post-test knowledge score with their demographic variables.

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