

A Study to Assess the Effectiveness of Training Programme on Knowledge and Skills Regarding Newborn Resuscitation among Student Nurses (3rd Year BSc) at Sdmions Dharwad

Mangesh Ashok Pawase

Clinical Instructor / Tutor, Ganpatrao Adke College/Institute Of Nursing, Nashik, Maharashtra, India

Abstract: Descriptive study was conducted aim to assess the knowledge and skill regarding new born resuscitation. The research design adopted for present study was pre- experimental design for evaluating the effectiveness of training programme on knowledge and skills of nursing students regarding newborn resuscitation. The setting selected for the present study was SDMIONS, Dharwad. Sample size consists of 30, sample were selected through purposive sampling technique. The data presented in pre- test majority of subjects (80%) having good knowledge and least subjects (16.66%) having average knowledge and only one subject (3.33%) have excellent knowledge and in post-test majority of subjects (93.33%) having excellent knowledge and least of subjects (6.66%) have good knowledge. This data presented in the table shows that “t” value computed between pre-test and post-test skill scores ($t = 31.30$, table value = 2.05, $P < 0.05$) is statistically significant. Hence, the null hypothesis is rejected and research hypothesis is accepted. This shows that there is a significant difference between mean pre-test and post-test skills scores of nursing students. The training programme was effective in increasing the skill of nursing students regarding newborn resuscitation. **Conclusion:** Neonatal resuscitation is usually done to prevent neonatal death and adverse long term neuro developmental sequelae associated with perinatal asphyxia. Approximately 10% of newborns delivered in hospital require resuscitation assistance to breathe at birth.

Keywords: Effectiveness, Knowledge, Skill, Newborn Resuscitation, Training Programme

1. Introduction

The birth is a challenging transition from the intrauterine to extra uterine life. Majority of babies handle this transition well. 90% of newborn babies do not need any medical intervention for survival, but 5-10% of newborn needs resuscitation. The interventions required may range from simple tactile stimulation to complex cardiac pulmonary resuscitation¹

Worldwide, Millions of babies are born annually. The transition from internal to external air filled environment in which the baby has to independently breathe for survival. It is also amazing that at least 90% of neonates successfully make this transition without any help. The remaining 10% of newborns require some assistance to begin breathing at birth and 1% or more may require intensive resuscitation effort².

Newborn should breathe spontaneously soon after the delivery. About 6% infants require some intervention which is more common among very low birth weight babies and in that 70% infants require resuscitation, which comes under high risk pregnancy³.

2. Literature

2.1 Studies related to importance of neonatal resuscitation

A study was conducted on cardio pulmonary resuscitation (CPR) in the delivery room. Retrospectively, they recorded all infants (n=22229) born alive with birth weight 500 gram. Among those infants 10.9% (2400) needed tactile

stimulation and 100% oxygen in delivery room. Positive pressure ventilation via mask or endotracheal tube was supplied to 1.1% (245) of infants, of whom 45.7 % (112/245) were endotracheal intubated chest compression were performed in 0.275% and, epinephrine administrated in 0.202% of the infants as part of delivery rooms cardio pulmonary resuscitation. The analysis of the study shows that the percentages of the infants requiring cardio pulmonary resuscitation are more. They concluded that personnel attending delivery should be well trained in resuscitation⁴.

2.2 Studies related to effectiveness of neonatal resuscitation training programme

The study was conducted to determine basic neonatal resuscitation in the delivery ward in Kampala, Uganda in 2007. The method was a five members team of nurses trained in basic neonatal resuscitation attended 1046 deliveries over a 31 days pilot period. The result obtained was basic neonatal resuscitation in this setting decrease the incidence of asphyxia, improve APGAR score and decrease in the mortality of babies weighting more than 2 kg. They concluded that this study provides evidence of the beneficial effect of basic neonatal resuscitation, decrease the incidence and mortality from asphyxia⁵.

2.3 Studies related student nurse's knowledge on neonatal resuscitation

Appropriate resuscitation is crucial to the survival of new born infants. The objectives are to assess knowledge of nurses about neonatal resuscitation method, with a closed-ended questionnaire to the nurses attached to secondary

health facilities in western Nigeria. In this one hundred and seventy nine nurses were interviewed, 72.6% had worked in labour room and the special care baby unit. Of them only 14.0% has attended neonatal resuscitation training courses. Similarly, 31.8%, 53.1%, 58.1%, and 35.2% had access to radiant warmers, AMBU bags, suction machine and oxygen delivery unit respectively. The knowledge of the respondent during neonatal resuscitation was poor⁶

2.4 Studies related to neonatal resuscitation

A retrospective study was conducted to evaluate the impact of the neonatal resuscitation program on morbidity and mortality of newborn infants with perinatal asphyxia in hospitals at Trakya region of Turkey (2008). Study comprised newborn infants who were born in hospitals and diagnosed as perinatal asphyxia and were referred to Neonatal Unit. Those patients who were referred before NRP course (pertaining period) were designated as Group 1, those who were referred after the first NRP course (transition period) as Group 2, and those who were referred after the second NRP course (post-training period) as Group 3. Chart review was performed with regard to gestational age, birth weight, Apgar scores, resuscitation type, stage of hypoxic ischemic encephalopathy (HIE), existence of meconium aspiration syndrome (MAS), progress of the disease and duration of hospitalization. The study concluded after NRP courses, the number of patients with perinatal asphyxia and with no resuscitation and also the duration of hospitalization decreased significantly.⁷

3. Problem Statement

“A study to assess the effectiveness of Training Programme on knowledge and skills regarding newborn resuscitation among student nurses (3rd year BSc) at SDMIONS Dharwad.”

4. Objectives

- To assess the knowledge and skills regarding new born resuscitation among 3rd year BSc (N) Students.
- To evaluate the effectiveness of training programme on knowledge and skills regarding neonatal resuscitation.

5. Methodology

This chapter deals with the description of the research methodology adopted by the investigators to study and analyze the outcome of the study. The steps which are under taken to conduct the study include research approach, research design, population, sample, sampling technique, procedure and technique of data collection and a plan for data analysis.

The research design adopted for present study was pre-experimental design. The setting selected for the present study was SDMIONS, Dharwad. Independent Variables: Training programme on neonatal resuscitation.

Dependent Variables: Knowledge and skills regarding neonatal Resuscitation. In the present study the sample were

selected through purposive sampling technique. Plan For Data Analysis. It involves the use of statistical procedures to give organization and meaning to data.

6. Result (Data Analysis)

This chapter deals with analysis and interpretation of data collected from 30 subjects to evaluate the knowledge and skills of 3rd year BSc nursing students regarding newborn resuscitation. The data were analyzed on the basis of the study objectives by using descriptive and inferential statistics.

Technique of data collection and a plan for data analysis.

Section A: Knowledge scores of nursing students regarding new born resuscitation.

Section B: Skills score of nursing students regarding new born resuscitation.

Section C: Effectiveness of training programme regarding newborn resuscitation among the nursing students in terms of gain in knowledge and skill score.

Section A

Knowledge scores of nursing students regarding new born resuscitation.

Table 1: Pre-test and post- test knowledge scores of newborn resuscitation training programme.

Level of Knowledge	Pretest		Post test	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Average 0-10	05	16.66	00	00
Good 11-20	24	80	02	6.66
Excellent 21-30	01	3.33	28	93.33
Total	30	99.99	30	100

The data presented in the table 1 shows that, in pre- test majority of subjects (80%) having good knowledge and least subjects (16.66%) having average knowledge and only one subject (3.33%) have excellent knowledge and in post-test majority of subjects (93.33%) having excellent knowledge and least of subjects (6.66%) have good knowledge.

Section B

Skills score of nursing students regarding new born resuscitation

Table 2: Pre-test and Post-test skills scores of new born resuscitation programme

Level of Knowledge	Pre Skills		Post Skills	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Average 0-05	30	100	00	00
Good 06-10	00	00	03	10
Excellent 11-15	00	00	27	90
Total	30	100	30	100

The data presented in the table (2) shows that, in pre-test majority of subjects (100%) having average skills and none of them have good and excellent skills and in post-test majority of subjects (90%) having excellent skills, least of the subjects (10%) having good skills and none of them have average skills.

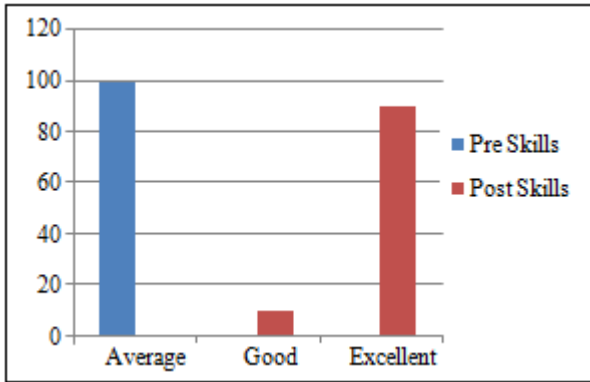


Figure 2: The bar diagram showing the skills score of pre skills and post skills

Section C

Effectiveness of training programme regarding newborn resuscitation among the nursing students in terms of gain in knowledge and skill.

To find out the significance difference between the mean pre-test and post-test knowledge scores Paired t'- test was used and data is presented in the form of table in order to test the statistical significance, the following research hypothesis (H₁) was stated.

H₁ - There will be significant difference between mean pre-test and post-test knowledge and skills scores on neonatal resuscitation.

Knowledge Assessment	Mean score	SD	Mean Difference	T Value	P-Value
Pre-test	14.06	2.95	8.54	11.23	0.0001
Post-test	22.60	3.00			

The data presented in the above table shows that “t” value computed between pre-test and post-test knowledge scores (t = 11.23, table value = 2.05, P < 0.05) is statistically significant. Hence, the null hypothesis is rejected and research hypothesis is accepted. This shows that there is a significant difference between mean pre-test and post-test knowledge scores of nursing students. The training programme was effective in increasing the knowledge of nursing students regarding newborn resuscitation.

To find out the significance difference between the mean pre-test and post-test skills scores. Paired t'- test was used and data is presented in the form of table in order to test the statistical significance, the following research hypothesis (H₁) was stated.

H₁ - There will be significant difference between mean pre-test and post-test skills scores on neonatal resuscitation.

Table 4: Comparison of pre- test and post-test skill scores of nursing student regarding new born resuscitation

Skill Assessment	Mean score	SD	Mean Difference	T Value	P-Value
Pre-test	1.83	1.40	10.33	31.30	0.0001
Post-test	12.16	1.3v1			

This data presented in the table shows that “t” value computed between pre-test and post-test skill scores (t = 31.30, table value = 2.05, P < 0.05) is statistically

significant. Hence, the null hypothesis is rejected and research hypothesis is accepted. This shows that there is a significant difference between mean pre-test and post-test skills scores of nursing students. The training programme was effective in increasing the skill of nursing students regarding newborn resuscitation.

7. Discussion

- 1) Our study reveals that the student nurses should have the adequate knowledge and skills on neonatal resuscitation which includes quality of newborn care and enhances good prognosis.
- 2) Continuous nursing education will help to improve the knowledge and skills of student nurses and will enhance the quality based care.

8. Conclusion

Neonatal resuscitation is usually done to prevent neonatal death and adverse long term neuro developmental sequelae associated with perinatal asphyxia. Approximately 10% of newborns delivered in hospital require resuscitation assistance to breathe at birth.

9. Future Scope

Nursing Practice

Nurses a member of health care team plays an important role in newborn resuscitation in pediatric unit. The study implies that there is need for the training programme on neonatal resuscitation in a pediatric unit, to increase the efficiency of the student nurses on neonatal resuscitation teaching to improve the knowledge and skills.

Nursing Education

All the health care providers including nursing students must learn the neonatal resuscitation in pediatric unit and they should have a thorough knowledge in neonatal resuscitation. A nurse educator needs to impart knowledge to students regarding newborn resuscitation procedure.

Nursing Administration

Nursing administrator is the key person to plan, organize and conduct the continuing education programme. The study findings emphasizes there is a need for continues professional development of the student nurses about neonatal resuscitation which requires training and retraining on neonatal resuscitation which helps the student nurses to update their knowledge and skills to improve the quality of newborn care.

Nursing Research

The study gives an idea about implementation about newborn resuscitation among the student nurses. The findings and results of this study will motivate other nursing students to take up other similar studies which will serve as a guideline for neonatal resuscitation in clinical nursing practice. Hence the body of knowledge is the key function which can be explored by increasing research studies in the field of child health nursing.

References

- [1] Pileggi Castro Souza C. Neonatal Care. 2005.
- [2] Rarvind. Critical care in pediatrics. New Delhi: Jaypee brother's publishers (p) ltd; 2004. p. 244.
- [3] WHO collaborating centres for training and research in newborn care department of pediatrics: All institute of medical sciences. New Delhi.
- [4] Karatekin G, Salihoglu O, Koken R, Canturk G, Nuhoglu A. Cardiopulmonary resuscitation in the delivery room; experience from 1st annual, Turkey. Pediatrics 2002 Oct; Vol 48; p. 313.
- [5] Nakakeeto M, Southall DP. To determine if nurses trained in basic neonatal resuscitation would impact the outcome of neonates delivered in kampala.
- [6] Ogulesi T, Dedeke O, Adekambi FA, Fetuga BM, Okencyi AJ. Neonatal resuscitation: Knowledge and practice of nurses in western Nigeria, 2008. Vol. 2; p. 23-5.
- [7] Sudhasalhan, Text book of obstetrics. New Delhi: Jaypee brothers medical publisher (p) ltd; 2007. p. 517.