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Effectiveness of demonstration method on knowledge and practice regarding new born resuscitation among nursing officers at selected hospital

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Abstract
Background: Prenatal asphyxia and extreme prematurity are the two complications of pregnancy that most frequently require complex resuscitation by skilled personnel. A nurse is one of the trained personnel working in the maternity unit 24 hours or round the clock. Data suggests that the morbidity and mortality can be reduced by 80% just by learning and following the steps of basic resuscitation correctly.
Methodology: A quantitative approach with pre experimental pre test-post test design was adopted for the study. The samples from the selected hospitals of Belagavi district were selected using convenient sampling technique. The sample consisted of 60 nursing officers. The tools used for data collection was structured knowledge questionnaire and practice scale.
Results: With respect to knowledge scores the statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level (p<0.05) with a paired 't' value of 10.03 and with respect to practice scores the statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level (p<0.05) with a paired 't' value of 9.60. There exists a statistical significance in the difference of knowledge and practice score indicating the positive impact of demonstration method.
Conclusion: Study results showed demonstration method of teaching found an effective method of teaching to enhance the knowledge and practices of working nursing officers. Thus, it can be concluded that practical methods of teachings can be used for the enhancement of the knowledge and practices of working nursing personnel on various life saving procedures.

Keywords: Demonstration method, knowledge, practice, nursing officers, hospital

Introduction
Birth is a traumatic experience for the mother and her baby. Apart from the discomfort and the trauma associated with the process of delivery, the baby is suddenly thrust in to a world of bright light, loud sound, and cold environment. The period immediately after birth represents one of the most difficult periods in the human life cycle. The transition from fetus to neonate is the time of significant physiologic adaptation [1].
It is the duty of those attending a delivery to ensure that the baby is given proper resuscitation that may need and to do a brief external examination of the baby to exclude immediate problem. Out of 140 million babies born annually in the world, half of them are home deliveries conducted by traditional birth attendants, relatives and neighbors. According to WHO, every year 7 million new born suffer from birth asphyxia,3.6 million will develop moderate to severe asphyxia and about 1 million die and equal number develop handicapping condition due to the lack of trained personnel and simple technology for the resuscitation of asphyxiated new born babies at home, primary health centers and maternity centers [2].

The resuscitation of newborn included four major steps.
a) Initial stabilization, and evaluation
b) Ventilation
c) Chest compression
d) Administration of medication and fluids [3].

Prenatal asphyxia and extreme prematurity are the two complications of pregnancy that most frequently require complex resuscitation by skilled personnel. However only 60% of asphyxiated newborn can be predicted antepartum. The remaining newborns are identified until time of birth [4].

Approximately 80% of low birth weight infants require resuscitation and stabilization at delivery. About 5-10% of newborns need resuscitation nearly 1 million newborns die because of birth asphyxia the world over? In our role as a health provider, recognizing when a baby has breathing problems and using resuscitation skills, when needed are essential to newborn [5].

A nurse is one of the trained personnel working in the maternity unit 24 hours or round the clock. So the nurse is expected to have a thorough knowledge and relevant skills regarding the resuscitation of new born [6].

Data suggests that the morbidity and mortality can be reduced by 80% just by learning and following the steps of basic resuscitation correctly. Keeping in view the above fact, the investigator planned to assess the knowledge and practice regarding new born resuscitation among nursing officers.

Objectives

1. To assess the knowledge and practice of nursing officers regarding new born resuscitation in terms of pre-test and post test knowledge and practice scores.
2. To evaluate the effectiveness of demonstration method on knowledge and practice of nursing officers regarding new born resuscitation by comparing pre-test and post-test knowledge and practice scores.
3. To find the association between the pre-test knowledge scores and selected demographic variables.

Hypothesis

H_1: The mean post test knowledge scores of nursing officers exposed to demonstration method on new born resuscitation will be significantly greater than the mean pretest knowledge scores at 0.05 level of significance

H_2: The mean post test practice scores of nursing officers exposed to demonstration method on new born resuscitation will be significantly greater than the mean pretest practice scores at 0.05 level of significance

H_3: There will be statistical association between the mean pretest knowledge scores of nursing officers regarding new born resuscitation and their selected demographic variables at 0.05 level of significance.

H_4: There will be statistical association between the mean pretest practice scores of nursing officers regarding new born resuscitation and their selected demographic variables at 0.05 level of significance.

Methodology

Research Approach: Quantitative Research Approach

Research Design: Pre experimental one group pre test – post test design

Sampling technique: Non-Probability; Convenient Sampling Technique

Sample size: 60

Setting of study: Selected hospital of Belagavi district

Tool used for data collection: Following tools used for the data collection

- **Part I: Demographic data:** It consists of 7 items related to demographic data of participants.
- **Part II: Structured knowledge questionnaire:** This section consists of 39 structured multiple choice items with the multiple options for each item to assess the knowledge of participants regarding new born resuscitation.
- **Part III: Structured practice scale:** A structured practice scale consisted of 28 statements regarding newborn resuscitation. There are two alternative response columns for each items Yes or No.

Procedure of data collection

Data was collected after obtaining administrative permission from authority of selected hospital of Belagavi district. Investigator approached and introduced to nursing officers. The purpose of the study was explained and the willingness of the participants was ascertained. Written consent was taken from the participants. A self administered structured knowledge questionnaire and practice scale was given to 60 nursing officers to collect data and the tool was collected after 45-60 minutes. Demonstration was done on newborn resuscitation and all participants was asked to repeat it. Post test was conducted after 8 days by using same structured knowledge questionnaire and practice scale which was used during pre test.

Results

a. The findings related to socio-demographic variables of participants

Table 1: Frequency and percentage distribution of socio-demographic variables of participants N: 60

Sl. No	Demographic variables	Frequency (f)	Percentage (%)
1	**Age (in yrs)**		
	20-30	23	38.3
	31-40	27	45
	41-50	10	16.7
	Above 50	00	00
2	**Gender**		
	Female	40	66.7
	Male	20	33.3
3	**Educational qualification**		
	GNM	25	41.7
	B.Sc. (N)	21	35
	PB B.Sc. (N)	14	23.3
	M.Sc. (N)	00	00
4	**Years of experience**		
	0-5 years	20	33.3
	6-10 years	23	38.3
	11-15 years	9	15
	Above 15 years	8	13.3

5	**Previous knowledge regarding newborn resuscitation**		
	Yes	29	48.3
	No	31	51.7
6.	**Previous experience of newborn resuscitation**		
	Yes	30	50
	No	30	50
7.	**Source of information**		
	News papers	18	30
	Family & Friends	15	25
	Social media	16	26.7
	Other	11	18.3

b. Area wise and total distribution of pre test and post test knowledge scores of respondents

Table 2: Mean, median, mode, standard deviation and range of pre test and post test knowledge scores of Respondents n = 60

Area of Knowledge	Number of Items	Mean	Median	Mode	Standard deviation	Range
Pre test	39	16.01	15	15	4.32	10-29
Post test	39	21.35	21	18	4.32	15-29

Table 2 reveals pre test knowledge score of respondents regarding newborn resuscitation, it shows that;
The pretest knowledge scores respondents mean was 16.01, median was 15, mode was 15 with standard deviation 4.32 and score range was 10-29.
The post test knowledge scores respondents mean was 21.35, median was 21, mode was 18 with standard deviation 4.32 and score range was 15-29.

c. Area wise and total distribution of pre test and post test practice scores of respondents

Table 3: Mean, median, mode, standard deviation and range of pre test and post test practice scores of Respondents n = 60

Area of practice	Number of Items	Mean	Median	Mode	Standard deviation	Range
Pretest	28	12.51	21	18	4.32	15-29
Post test	28	16.16	16.50	14	2.71	9-21

Table 3 reveals pretest and post test practice score of respondents regarding newborn resuscitation, It shows that;
In pre test, respondents mean was 12.51, median was 21, mode was 18 with standard deviation 4.32 and score range was 15-29.
In post test, respondents mean was 16.16, median was 16.50, mode was 14 with standard deviation 2.71 and score range was 9-21.

d. Distribution respondent's pretest and post test scores according to their level of knowledge and practice

1) Knowledge Scores

Table 4: Frequency and Percentage distribution of respondents according to level of Knowledge regarding newborn resuscitation n=60

Level of Knowledge					
Pre test			Post test		
Poor f (%)	Moderate f (%)	Good f (%)	Poor f (%)	Moderate f (%)	Good f (%)
13(21.7%)	41 (68.3%)	06(10%)	00	49 (81.7%)	11 (18.3%)

The data presented in the Table 4 depicts the respondent's level of knowledge during pretest and post test regarding newborn resuscitation;
With regard to pre test level of knowledge it shows that, maximum 41(68.3%) respondents were having moderate knowledge, 13(21.7%) respondents were having poor knowledge and remaining 6(10%) of respondents were having good knowledge.
During post-test maximum 49 (81.7%) of respondents were having moderate knowledge and 11(18.3%) of respondents were had good knowledge.

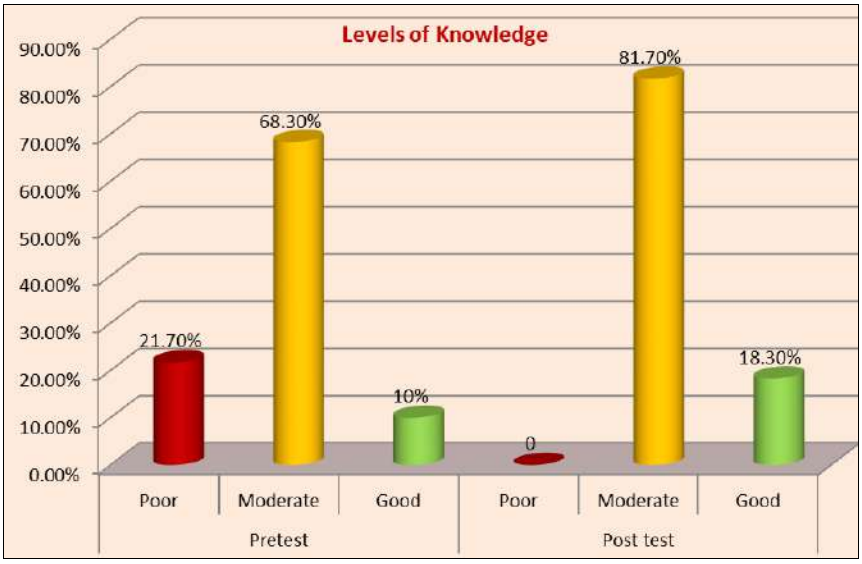

Fig 1: Pre test and post test level of knowledge

2) Practice Scores

Table 5: Frequency and Percentage distribution of respondents according to level of Practice regarding newborn resuscitation n=60

Level of Practice					
Pre test			Post test		
Poor f (%)	Moderate f (%)	Good f (%)	Poor f (%)	Moderate f (%)	Good f (%)
12 (20%)	44 (73.3%)	4(6.7%)	2 (3.3%)	44 (73.3%)	14 (23.3%)

The data presented in the Table 5 depicts the respondent's level of practice during pretest and post test regarding newborn resuscitation; With regard to pre test level of practice it shows that, majority 44(73.3%) respondents were having moderate practice, 12(20%) of respondents were having poor practice and 4(6.7%) of respondents were having good practice.

During post-test maximum 44(73.3%) of respondents were having moderate practice, 14(23.3%) of respondents were had good practice and 2(3.3%) of respondents were had poor practice.

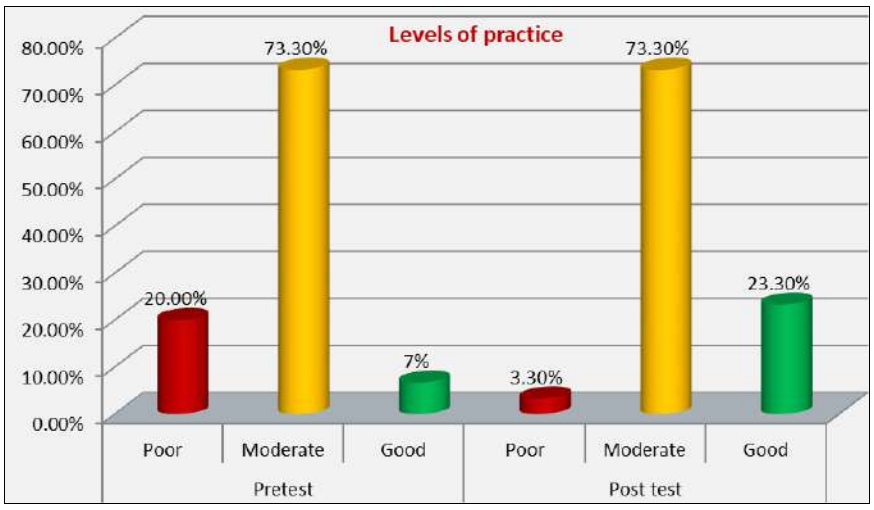

Fig 12: Pre test and post test level of practice

e. Effectiveness of demonstration method

Paired 't' value was computed to find out the significance of difference between means of pre-test and post test knowledge and practice scores of respondents.

Table 6: Mean, standard deviation, standard error of difference and 't' value of pre-test and post-test knowledge and practice scores N=60

Area	Aspects	Mean	Sd	SEMD	Paired t test
Knowledge	Pre-test	16.01	4.32	0.53	10.03*
	Post-test	21.35	4.32		
Practice	Pre-test	12.51	4.00	0.38	9.60*
	Post-test	16.16	2.71		

* Significant at 5% level

Table 6 indicates the overall mean knowledge and practice scores of pre-test and post-test scores.

Knowledge

With respect to knowledge scores The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level (p<0.05) with a paired 't' value of 10.03. There exists a statistical significance in the difference of knowledge score indicating the positive impact of demonstration method.

Hence, the research hypothesis H_1 is supported. This indicates that the enhancement in knowledge is not by chance and the nursing officers who exposed to demonstration method on newborn resuscitation, significantly improved in their knowledge.

Practice

With respect to practice scors the statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level (p<0.05) with a paired 't' value of 9.60. There exists a statistical significance in the difference of practice score indicating the positive impact of demonstration method.

Hence, the research hypothesis H_2 is supported. This indicates that the enhancement in practice is not by chance and the nursing officers who exposed to demonstration method on newborn resuscitation, significantly improved in their practice.

f. Association between level of knowledge, practice and selected socio demographic variables

The computed Chi-square value for association between level of knowledge of nursing officers regarding newborn resuscitation and their selected demographic variables is found to be statistically significant at 0.05 levels for educational qualification and is not found statistically significant for other socio demographic variables.

The computed Chi-square value for association between level of practice of nursing officers regarding newborn resuscitation and their selected demographic variables is found to be statistically significant at 0.05 levels for gender and is not found statistically significant for other socio demographic variables.

Conclusion

The present study results reveals that, the overall pretest knowledge and practice of nursing officer's newborn resuscitation method was average and moderate respectively. Post test results showed significant improvement in the level of knowledge and practice newborn resuscitation method. Thus, it can be concluded that demonstration method of teaching was effective to increase and update their knowledge and practice on newborn resuscitation.

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