ASSESS THE EFFECTIVENESS OF DEMONSTRATION ON KNOWLEDGE REGARDING NEONATAL RESUSCITATION AMONG B.Sc. NURSING 2nd YEAR AND GNM 2nd YEAR STUDENTS OF BABA EDUCATIONAL SOCIETY, INSTITUTE OF PARAMEDICAL, COLLEGE OF NURSING, LUCKNOW (UP)

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Abstract

The majority of all neonatal deaths (75%) occur during the first week of life. Out of these deaths, between 25% and 45% occur within the first 24 hours. Further, the neonatal period which comprises of the first 28 days of life accounts for 37% of all deaths among children under five. (WHO 2009).In India, perinatal asphyxia is one of the common causes of neonatal mortality. Data from National Neonatal Perinatal database suggest that perinatal asphyxia contributes to almost 20% of neonatal deaths. The other causes of neonatal mortality are low birth weight, atelactasis, birth injuries, congenital malformation and infections. (WHO 2010)The initiation of breathing is critical in the physiologic transition from intra uterine to extra uterine life. Between 5 to 10% of all newborn require assistance to establish breathing at birth, and simple warming, drying, stimulation and resuscitation may reduce neonatal mortality and morbidity rate. Each year an estimated 814, 000 deaths are related to intrapartum hypoxic events. (UNICEF 2011)Newborn resuscitation is a series of action that are taken in order to receive an infant immediately after birth so that normal respiration and circulation maybe initiated and maintained. It is an attempt to facilitate the dynamic transition from foetal to neonatal Physiology.The research approach adopted for this study was quantitative research approach. The research design selected for the study was pre-experimental design. Data was obtained from 30 students of B.Sc. Nursing Second year and GNM Second year. Sample was selected by using non probability convenient sampling technique. Data collection period extended from 05.02.2022 to 12.02.2022 as per the convenience of the students and investigators. The purpose of the study was explained to them and confidentiality was assured to all the respondents.

Keyword: Study, Assess, Effectiveness, Demonstration, Knowledge, Neonatal resuscitation

INTRODUCTION

Birth of a newborn baby is one of the finest Gift of the nature. The process of birth takes only a few hours, but it is the most hazardous period of life, since it is the most hazardous period of life, so it is associated with largest no. of deaths as compared to any other phase of life.

Newborns are considered to be tiny and powerless beings, completely dependent on others are there adaption in the external environment. Every infant presents uniquely and has certain individual needs. While the vast majority of infant transition without problems, some present with anatomical, physiological, infectious and developmental issues that must be addressed.

Newborn period is from the time of birth to 28 days of life. Approximately 85% to 90% of infants make the transition from intrauterine to extra uterine life with no assistance necessary. However, for the remaining few newborns, some assistance may be required, ranging from simple stimulation to complete resuscitation.

136 million babies born annually, around 10 million require assistance to breathe. Each year 814,000 neonatal deaths result from intra-partum-related events in term babies (previously "birth asphyxia") and 1.03 million from complications of prematurity. No systematic assessment of mortality reduction from tactile stimulation or resuscitation has been published.

Nearly one half of newborn deaths (many of which involve extremely premature infants) occur during the first 24 hours after birth. Many of these early deaths also have a component of asphyxia or respiratory depression as an etiology. For the surviving infants, effective management of asphyxia in the first few minutes of life may influence long term outcome.

Perinatal asphyxia and extreme prematurity are the two complications of pregnancy that most frequently necessitate complex resuscitation by skilled personnel. However, only 60% of asphyxiated newborns can be predicted ante partum while remaining newborns are not identified until the time of birth. Additionally, approximately 80% of low-birth-weight infants require resuscitation and stabilization at delivery. Along with the necessary skills, the practitioner should approach any resuscitation with a good comprehension of transitional physiology and adaptation, as well as an understanding of the infant's response to resuscitation. Resuscitation involves much more than possessing an ordered list of technical skills and having a resuscitation team; it requires excellent assessment skills and a grounded understanding of physiology.

The majority of all neonatal deaths (75%) occur during the first week of life. Of those deaths, between 25% and 45% occur within the first 24 hours, further, the neonatal period which comprises of the first 28 days of life accounts for 37% of all deaths among children under five**.**

(WHO 2010)
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(UNICEF 2011)
Each year, about 4 millions newborn die before they are 4 week old. 98% of the death occurs in developing countries. Newborn deaths now contribute to about 40% of all deaths in children under 5 of age globally more than half of infant mortality. Rates are highest in sub Saharan Africa and Asia. 2/3rd of newborn death occurs in Africa (28%) and South- East Asia (36%).

In India neonatal mortality rate estimated in the 2006 is about 25 per 1000 live birth in early neonatal period rate for the whole country is about 37/1000 live births.

In India, perinatal asphyxia is one of the common causes of neonatal mortality. Data from National Neonatal Perinatal database suggest that perinatal asphyxia contributes to almost 20% of neonatal deaths. The other causes of neonatal mortality are low birth weight, atelectasis, birth injuries, congenital malformation and infections. **(WHO 2010).**

PROBLEM STATEMENT

Assess the Effectiveness of Demonstration on Knowledge Regarding Neonatal Resuscitation among B.Sc. Nursing 2nd Year & GNM 2nd Year Students Of Baba Educational Society, Institute Of Paramedical, College Of Nursing, Lucknow (UP)

OBJECTIVES

1. To assess the pre test knowledge regarding neonatal resuscitation among B.Sc. Nursing 2nd year and GNM 2nd students.
2. To evaluate the effectiveness of demonstration on knowledge regarding neonatal resuscitation among B.Sc. Nursing 2nd year and GNM 2nd students.
3. To determine the Association of pre test score of students regarding neonatal resuscitation with their selected demographic variables.

HYPOTHESES

H_0: There will be no significant effect of demonstration on knowledge regarding neonatal resuscitation among B.Sc. Nursing 2nd year and GNM 2nd year students.

H_1: There will be significant effect of demonstration on knowledge regarding neonatal resuscitation among B.Sc. Nursing 2nd year GNM 2nd year students.

H_0: There will be no significant association between the pre-test knowledge score of students with their selected demographic variables.

H_2: There will be significant association between the pre-test knowledge score of students with their selected demographic variables.

OPERATIONAL DEFINITION

1. **Assess:** The word assess means to make a judgment about the nature on quality of something or somebody. In this study the word assess refers to determine or observing the ability of students to express their knowledge.
2. **Effectiveness:** Effectiveness is the capability of producing a desired result or the ability to produce desired output. In this study the word effectiveness refers to the extent which demonstration on neonatal resuscitation with B.Sc. nursing 2nd year and GNM 2nd year students has achieved the desired effect on evident from the gain in knowledge score in the post test.
3. **Demonstration:** Demonstration is the method of presentation of skill which shows how a particular procedure is performed. In this study the word demonstration refers to a visual presentation of skills, showing how to perform neonatal resuscitation.
4. **Knowledge:** Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering or learning. In this study the word

knowledge refers to an understanding and ability of the students to answer questions regarding neonatal resuscitation

5. **Neonatal resuscitation:** Neonatal resuscitation is a set of interventions used to assist the airway, breathing and circulation of a newborn following birth. In this study the word neonatal resuscitation refers to an immediate care given to the newborn which include establishing airway, initiating breathing, maintaining circulation and evaluation of newborn for adequacy of respiration and heart rate.

6. **Students:** The term 'students' refers to individuals registered and recognized as learners educational in educational institutions like colleges and universities for the purpose of acquiring knowledge and skills that could enhance personal development to prepare them for the world of work.

ASSUMPTIONS

The study assumes that

1. B.Sc. nursing 2nd year and GNM 2nd year students may have some knowledge regarding neonatal resuscitation.
2. Imparting information on neonatal resuscitation may enhance level of knowledge among B.Sc. nursing 2nd year and GNM 2nd year students.
3. Demonstration method will be the effective method to improve the knowledge on neonatal resuscitation among B.Sc. nursing 2nd year and GNM 2nd year students.

DELIMITATION

The study will be delimited to:

1. The study was limited to the B.Sc. nursing 2nd year and GNM 2nd year students from Baba educational society, Institute of paramedical, college of nursing, Lucknow.
2. The study was limited to the B.Sc. nursing 2nd year and GNM 2nd year students, who are interested in taking part in the research.
3. The study was limited to the B.Sc. nursing 2nd year and GNM 2nd year students, who are present at the time of data collection.

CONCEPTUAL FRAMEWORK

A conceptual framework or model made up of concepts, which are the mental images of the phenomenon. A conceptual framework provides the guidelines to attain the objectives of the study based on the theory. It is the schematic presentation of activities, steps and action of the study. A conceptual framework is used in research to outline the possible course of action to present a preferred approach to an idea or thought.

"Treece and Treece (1986)" state that conceptualization is the process of forming ideas, designs and plans."

The present study is aimed at assessing the knowledge of B.Sc. nursing 2nd year and GNM 2nd year students regarding neonatal resuscitation with a view to develop demonstration.

The system model consists of three phases- Input, Process and Output.

INPUT

It is any form of energy, information and matters that enters the system through its boundaries. In this study input refers to the target group (B.Sc. Nursing 2nd year and GNM 2nd year students) with

their demographic characteristics such as age, staying at, education qualification of parents, previous knowledge regarding neonatal resuscitation, demonstration classes attended on neonatal resuscitation and sources of information.

PROCESS

It refers to the series of actions by which the system converts it energy input from the environment in to products and the services that are needed to accomplish the desired task. The present study adopted the following process.

Knowledge of the B.Sc. Nursing 2nd year and GNM 2nd year students will be assessed, by using a self structured questionnaire; demonstration will be administered, Following this post test knowledge will be assessed using the same questionnaire to know the gain in the knowledge score.

OUTPUT

It is the energy, material or information that is transferred to the environment. In the present study, evaluation of the effectiveness of demonstration on knowledge regarding neonatal resuscitation the output that may also be regarded as the product of the process. This is achieved through a comparison between pre and post test knowledge scores of the subjects.

METHODS & MATERIAL

Research Approach: The research approach adopted for the study was quantitative research approach.

Research Design: In this study, pre-experimental (one group pre-test, post-test) design was used to evaluate the effectiveness of demonstration on knowledge regarding neonatal resuscitation among B.Sc. nursing 2nd year and GNM 2nd year students

Setting of the research study: This study was conducted in Baba educational society, Institute of paramedical & college of Nursing, Lucknow.

Target population: In this study the target population was B.Sc. Nursing 2nd year and GNM 2nd year students of Baba educational society, Institute of paramedical & college of Nursing, Lucknow.

Accessible population: In this study the accessible population was 30 students of B.Sc. nursing 2nd year and GNM 2nd year students of Baba educational society, Institute of paramedical & college of Nursing, Lucknow, who present at the time of data collection.

Sample: A proportion or subset of the population is known as sample.

Sampling technique: Convenience sampling technique was used to select the samples.

Sample size: The sample of this study consists of B.Sc. Nursing 2nd year and GNM 2nd year students of Baba educational society, Institute of paramedical, College of Nursing, Lucknow and the sample size was 30.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

1. Students studying in B.Sc. nursing 2nd year and GNM 2nd year of Baba educational society, Institute of paramedical, College of Nursing, Lucknow.
2. Willing to participate in the study.
3. Present at the time of data collection.

Exclusion criteria

1. B.Sc. nursing 2nd year and GNM 2nd year students who are sick at the time of data collection.

DEVELOPMENT AND DESCRIPTION OF TOOL

The tools for this study were developed after extensive review of literature, expert's opinion in the field of medical surgical nursing and investigators own experience in the clinical area. The tool consists of two parts, namely:

Part-I (Demographic variables)

It includes Age, Staying at, Education qualification of parents, Previous knowledge regarding neonatal resuscitation, Demonstration classes attended on neonatal resuscitation, Sources of information and Year of study.

Part-II (Self structured questionnaire on knowledge regarding neonatal resuscitation)

The self structured questionnaires were developed on the basis of review of literature, discussion with the experts and personal experience of the investigator. This part has 27 questions regarding neonatal resuscitation. Self Structured knowledge questionnaire consists of 27 items for assessing knowledge among B.Sc. nursing 2nd year and GNM 2nd year students regarding neonatal resuscitation. Every item was multiple choice types with one correct answer carry 1 mark and wrong answer carry 0 marks.

Scoring

For each item of correct answer carry maximum score-ONE and wrong answer carry minimum score-ZERO. There was no negative scoring. Maximum score was 27, while minimum score was 0.

Interpretation of knowledge score

Level of knowledge	Score
Inadequate knowledge	0-9 (33%)
Moderate knowledge	10-18 (33%-66%)
Adequate knowledge	19-27 (66%-100%)

ASSESSMENT OF TOOL

Validity of the tool

The validity of tool obtained from eight Nursing professionals including: 2 Professor, 3 Associate Professor, 3 Assistant Professor of Baba educational society, Institute of paramedical, College of Nursing, Lucknow.

Reliability of the tool

According to De vos, (1998) reliability refers to the accuracy and consistency of a measuring

instrument. The reliability was calculated by using Karl Pearsons correlation coefficient formula Reliability score for knowledge was 0.79.

ANALYSIS AND INTERPRETATION OF DATA

Based on the study's goal and hypothesis, the collected data will be analyzed using descriptive and analytical methods. The replies supplied by the participants were compiled in to a master data sheet. Graphs and tables will be used to show the computed data. The following was the data analysis strategy.

1. The demographic data of the samples will be analyzed using frequency and percentage.
2. The frequency %, mean and standard deviation of the knowledge score will be calculated.
3. The "t" test will be used to assess the effectiveness of demonstration.
4. The Chi-square test will be used to examine the relationship between knowledge scores and the demographic variables that have been chosen.

RESULTS

Analysis is the process of organising and synthesising the data in such a way that research question can be answered and hypothesis tested. This chapter presents the analysis and interpretation of the data. Analysis and interpretation of collected data done on the basis of objective and hypothesis of the study using descriptive and inferential statistic.

ORGANIZATION OF THE FINDING OF FINAL STUDY

The data is analyzed and presented under following headings:

Section I

Description of Demographic Variables of B.Sc. Nursing 2nd year and GNM 2nd year students.

Section II

Analysis of pre-test & post test knowledge level regarding importance of demonstration on neonatal resuscitation among B.Sc. Nursing 2nd year and GNM 2nd year students.

Section III

Assess the effectiveness of demonstration on knowledge regarding neonatal resuscitation among B.Sc. Nursing 2nd year and GNM 2nd year students.

Section IV

Association between Pre-test Knowledge Score with their Selected Demographic Variables.

SECTION I: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF B.SC. NURSING 2ND YEAR AND GNM 2ND YEAR STUDENTS

Table-1: Frequency and percentage distribution of respondents according to their demographical variables (N=30)

SN	Demographic variables		Frequency (f)	Percentage (%)
1	Age of participants	18	3	10
		19	8	26.67
		20	18	60
		21 & above	1	3.33
2	Staying at	Hostel	16	53.33
		Home	8	26.67

		Rent	6	2
3	Education qualification of parents	No formal education	4	13.33
		Primary education	4	13.33
		High school	7	23.34
		Graduation	10	33.34
		Post graduation	5	16.66
4	Previous knowledge regarding neonatal resuscitation	Yes	22	73.34
		No	8	26.66
5	Demonstration classes attended on neonatal resuscitation	Yes	16	53.34
		NO	14	46.66
6	Sources of information	No previous information	5	16.66
		Teachers	15	50
		Mass media	5	16.66
		Text book	2	6.67
		Any reference	1	3.34
		Any other sources	2	6.67
7	Year of study	B.Sc.(N)2nd year	19	63.33
		GNM 2nd year	11	36.67

SECTION II: ANALYSIS OF PRE-TEST & POST TEST KNOWLEDGE LEVEL REGARDING IMPORTANCE OF DEMONSTRATION ON NEONATAL RESUSCITATION AMONG B.SC. NURSING 2ND YEAR AND GNM 2ND YEAR STUDENTS

Table-2: Frequency and percentage distribution of participants based on pre and post test knowledge score (N=30)

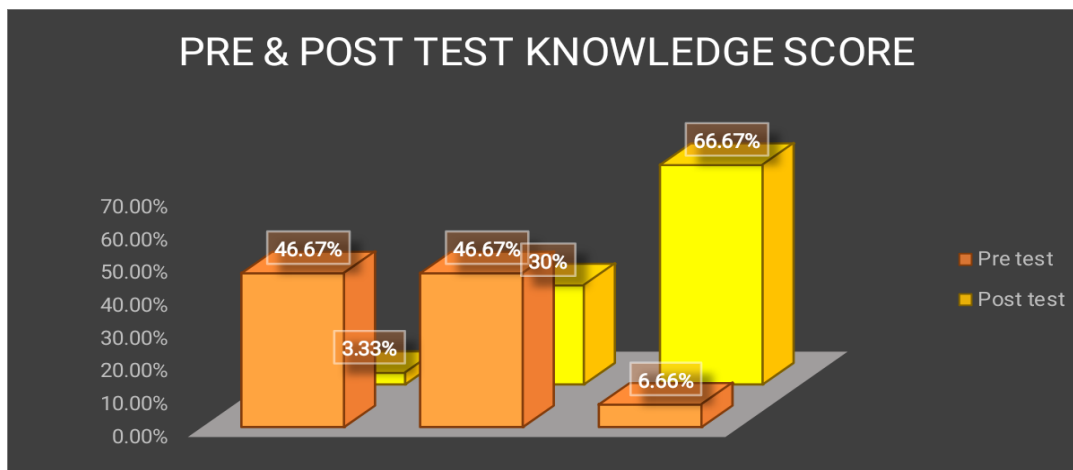| Level of knowledge	Range of score	Pre-test		Post-test	
		F	%	F	%
Inadequate knowledge	0-9	14	46.67	01	3.33
Moderate knowledge	10-18	14	46.67	09	30
Adequate knowledge	19-27	02	6.66	20	66.67
TOTAL		**30**	**100**	**30**	**100**

PRE & POST TEST KNOWLEDGE SCORE

Table-2 shows that in the pre-test majority 14(46.67%) of the respondents had moderate and inadequate knowledge, where as only 02(6.66%) had adequate knowledge about neonatal resuscitation, whereas in the post-test 20(66.67%) of the respondents had adequate knowledge, where as 09(30%) had moderate knowledge, and 01(3.33%) had inadequate knowledge about neonatal resuscitation.

Table-3: Mean, Mean deviation, SD of Pre and post-test knowledge scores on Neonatal resuscitation (N = 30)

Test	Total score	Max obtained	Mean	Mean deviation	SD
Pre test	27	20	9.9	5.04	5.49
Post test	27	25	19.5	4.2	4.8

Table-3 show that pre-test mean was 9.9 & post-test mean 19.9, mean post-test knowledge score (19.5) was higher than the mean pre-test knowledge score (9.9). The computed 't' value (t=29) was higher than the table value (t_{29}=2.05) at 0.05 level of significance. Hence the research hypothesis **H$_1$** is accepted and it was inferred that the mean difference between pre- and post-test knowledge score was statistically significant.

Section III: Evaluate the effectiveness of demonstration on knowledge regarding neonatal resuscitation

Table-4: Mean score of pre and post test knowledge score of students regarding importance of demonstration on neonatal resuscitation.

Mean score	Pre test 9.9	Post test 19.5
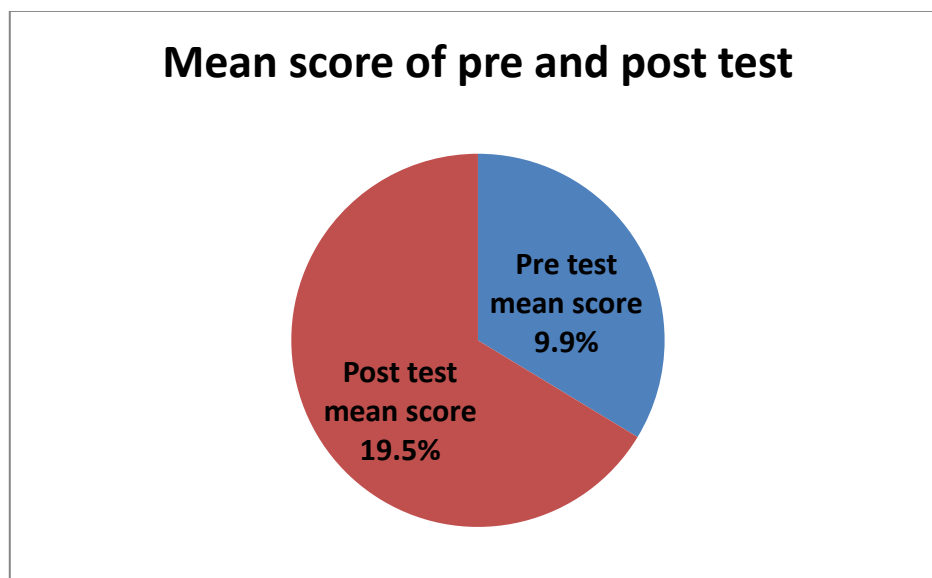
H$_1$: There is a significant effect of demonstration on knowledge regarding neonatal resuscitation.
The median score of pre-test and post-test knowledge scores are shown in the figure. The data presented in the figure and table shows significant difference between the pre-test and post-test knowledge scores. The pre-test median score was 9.9 whereas post-test median score was 19.5 showing a difference of 9.6. This indicates that there was significant increase in the knowledge of

students of B.Sc. nursing 2nd year and GNM 2nd year to evaluate the effectiveness of the demonstration a null hypothesis was formulated.

The hypothesis was tested using paired "t" test. The value of "t" was calculated to analyses the difference between mean pre and post-test knowledge scores on students. The value of t- test is t=29 which is greater than table value there for null hypothesis is rejected and research hypothesis is accepted.

Section-IV: Association between Pre-Test Knowledge Score with Their Selected Demographic Variables

This section presents the findings of the study related to the association between pre-test knowledge score and selected baseline characteristics analyzed using chi square test. The following hypothesis was formulated to test the association between the pre-test knowledge score and demographic characteristics.

H_2: There is a significant association between pre-test knowledge scores of students with their selected demographic variables.

Table-5: Chi-square Test Showing the Association between Pre-Test Knowledge Score of students with selected demographic variable (N= 30)

Selected demographic variables	Category	Knowledge level			DF	Table value	Obtained value	Significance
		Inadequate	Moderate	Adequate				
Age in year	18	1	2	0	6	12.59	3.145	NS
	19	3	4	1				
	20	10	7	1				
	21 & above	0	1	0				
Staying at	Hostel	9	6	1	4	9.49	4.463	NS
	Home	2	6	0				
	Rent	3	2	1				
Education qualification of parents	No formal education	3	1	0	8	15.51	7.053	NS
	Primary education	3	1	0				
	High school	3	4	0				
	Graduation	3	6	1				
	Post graduation	2	2	1				
Previous knowledge regarding neonatal resuscitation	Yes	9	11	2	2	5.99	1.5066	NS
	No	5	3	0				
Demonstration	Yes	8	7	1	2	5.99	0.151	NS

classes attended on neonatal resuscitation	No	6	7	1				
Sources of information	No previous information	2	3	0	10	18.31	8.705	NS
	Teachers	5	8	2				
	Mass media	3	2	0				
	Text book	2	0	0				
	Any reference	0	1	0				
	Any other sources	2	0	0				
Year of study	B.Sc. 2nd year	9	9	1	2	5.99	0.535	NS
	GNM 2nd year	5	5	1				

NS= Not significant

Table-5 shows that there is no significant association between pre-test knowledge and selected socio-demographic variables of students such as Age, Staying at, Education qualification of parents, Previous knowledge regarding neonatal resuscitation, Demonstration classes attended on neonatal resuscitation, Sources of information and year of the study.

Hence it can be interpreted that percentage knowledge score related to socio- demographic variables where only by chance and not true difference and hence research hypothesis was not accepted.

CONCLUSION

This study assessed the knowledge of students and evaluated the Effectiveness of demonstration regarding neonatal resuscitation.

The study revealed that even though the neonatal resuscitation had good knowledge regarding of students of B.Sc. Nursing 2nd year and GNM 2nd year and its they had keen interest to learn about all aspects of neonatal resuscitation.

The pre- test concluded to identify the knowledge of students of B.Sc. Nursing 2nd year and GNM 2nd year regarding neonatal resuscitation.

The analysis of the finding indicated that demonstration is an effective means to increase the knowledge regarding neonatal resuscitation the computed't' test was significant at 0.05 level of significance.

The post- test was conducted and as compared to the pre- test indicating that the demonstration is effective.

The result of the study will enable the nurse's health professional to utilize the demonstration to students in the college setting as an additional intervention of neonatal resuscitation by improving the knowledge.

Demonstration is one of the effective teaching methods in imparting the knowledge of students of B.Sc. nursing 2nd year and GNM 2nd year regarding neonatal resuscitation.

Hence it is concluded that the demonstration is an effective teaching strategy where by the neonatal resuscitation could helped to enhance the knowledge.

The findings of the study have implications to nursing education, administration, service and research.

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