



**Pre-experimental study to assess the effectiveness of self-instructional module on knowledge regarding neonatal resuscitation among the staff nurses working in selected hospital Srinagar.**

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**Abstract**

*As we know that the neonatal care in first week after birth and especially during the first 24-48 is very crucial because this period can cause serious problems and complications resulting in high mortality rate. That is why one of the objectives of care during pregnancy is to ensure the birth of mature, live and healthy baby. The focus of antenatal care is thus not only to promote health of mothers and prevent complications in mothers but also to prevent low birth weight, fetal disorders, neonatal asphyxia, congenital anomalies. So neonatal care includes care of the new born baby from birth to 28 days. The care during this period is very important because it helps in reducing perinatal and neonatal mortality. Proper care of neonates help to prevent 50-60 percent of all infant deaths and more than half of these can be prevented during the first week of their life. The care of under-five child include personal care, feeding, monitoring of growth and development, immunization, safety and security, early recognition and treatment of childhood ailments, supervision of children. On this basis pre-experimental one group pre-test post-test research design study was conducted to assess the effectiveness of self-instructional module on knowledge regarding neonatal resuscitation for which 60 subjects were selected by purposive sampling technique. After data collection structured questionnaire was used to assess the knowledge among subjects. The data was analyzed by descriptive and inferential statistics using chi-square and t-test. The findings revealed that in posttest majority of the study subjects 60(100%) had good knowledge; none of the subjects had neither average nor poor knowledge with posttest mean score **46.60** standard deviation **1.564** with mean difference **23.55**. Study concludes that there was gain in knowledge among staff nurses after providing self-instructional module. The study also concluded that there was statistically significant association between working experience and in-service education ( $p=0.001$ ) of staff nurses with their pre-test knowledge scores while as no association was found between age, Gender, Professional qualification and neonatal resuscitation performed of staff nurses with their pre-test knowledge scores ( $p>0.05$ ).*

**Key Words:-***Knowledge, Labor room, Staff nurses, Neonatal resuscitation, Self-instructional module.*

**1. INTRODUCTION**

Birth of a healthy newborn baby is one the precious gift of God to man. Birth of a baby is a complex process in which many physiological and psychological changes occur for both the mother and the child. It is one of the most awe inspiring & emotional events that can occur in



one's lifetime. After 9 months of anticipation and preparation, the neonate arrives with amid and flurry of excitement. The new human being affects the life of the parents and also the other family members. Some parents and family adjust easily to the necessary changes in their lifestyles, whereas others find it difficult to cope with these changes and feel varying degrees of turmoil and anxiety. This is especially true if the neonate is not the robust, healthy, lovable infant who was expected. The birth process takes only few hours but is considered to be the most complicated period of life to both mother and the child, as it is associated with large number of child deaths as compared to any other phase of life<sup>1</sup>.

The newborn baby's survival is dependent on his ability to adapt to his extra-uterine environment. Continued dependence on the mother for nutrition and safety necessitates the establishment of an emotional relationship which is initiated at the time of birth<sup>2</sup>. This involves adaptation in cardio-pulmonary circulation and other physiological adjustments to replace placental functions and maintain homeostasis. It is also the commencement of early parent-baby relationship. The transition from intra-uterine to extra-uterine life is a dramatic one and demands considerable and effective physiological alteration by the baby in order to ensure survival. The fetus leaves the uterine environment, which has been completely life sustaining for oxygenation, nutrition, excretion and thermo regulation. Simultaneously the baby has to make major adjustment in respiratory and circulatory system as well as controlling body temperature. These initial adaptations are crucial to the baby subsequent wellbeing and should be understood and facilitated by the midwife at the time of birth. Respiratory and cardiovascular changes are interdependent and concurrent<sup>3</sup>. Sometimes, a baby has difficulty making the transition to the world. Being born prematurely having a difficult or birth defects can make changes more challenging. Fortunately for these babies special newborn care with resuscitation is required<sup>4</sup>.

Resuscitation means restoration of life. It is arrival from apparent death. Process of birth is hazardous for the neonates as all body systems undergo some changes. The baby has to cope up with this transition of life.<sup>5</sup> Resuscitation of newborn presents a different set of challenges than resuscitation of the adult or an infant. The transition from placental gas exchange in a liquid filled intrauterine environment to spontaneous breathing of air requires dramatic physiological changes within the first minute to hours after birth.<sup>6</sup>



Perinatal 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 ante partum. The remaining newborns are identified until time of birth<sup>7</sup>. 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<sup>8</sup>.

The birth of healthy newborn baby is one of the precious gifts of nature. Every year 245 million children are born out of which 8 million deaths are neonatal deaths. In India about 2-3 million babies are born every year (45 babies per min) and of these 15 million die during first 28 days of life. The overall neonatal mortality in India is 46 per 1000 live births. To achieve reduction in neonatal mortality, it is mandatory for specific programmes and strategies<sup>9</sup>.

Although the birth process is an arduous experience for the infant, the effects are normally temporary and do not affect future growth and development. Few exceptions relates to oxygen deprivation and nerve injuries. If brain cells are without enough oxygen for even a few minutes, they die and cause a permanent brain damage. If the birth is difficult there may be permanent brain injury to nerves causing muscle paralysis and a variety of serious developmental problems<sup>10</sup>. The global burden of neonate deaths is estimated to be 5 million of which 3.2 million deaths occur during the first week of life. Almost a quarter of the burden of neonatal mortality is shared by India with three babies dying every minute, and every fourth baby born being low birth weight. The problems faced by neonates vary significantly in different parts of the Globe and even among developing nations there is much heterogeneity in the causes of neonatal morbidity and mortality<sup>11</sup>. More than 5 million neonatal deaths occur worldwide each year. It has been estimated that birth asphyxia accounts for 19% of these deaths, suggesting that the outcome might be improved for more than 1 million neonates per year through implementation of simple resuscitative technique.<sup>12</sup>

Newborn care is of immense important for proper development and healthy life of a baby. Neonatal resuscitation program has been launched in India since 1990. This program provides a uniform systematic and action- oriented approach to the resuscitation of the newborn.



Prospective evaluation of the resuscitation program in teaching hospitals has revealed the use of rational resuscitation practices and a significant decline in asphyxia related death. Birth asphyxia is an important cause of preventable neonatal mortality and morbidity in developing countries. Of the 26 million births each year in India, 4-6 % of neonates fail to establish spontaneous breathing at birth. These babies can be helped if health care professionals present at the time of birth are skilled in the art of neonatal resuscitation<sup>13</sup>.

Although more than 10% of neonates born in the India require resuscitation. Availability of well trained personnel skilled in neonatal resuscitation can result in a significant decline in neonatal morbidity and mortality. One important aspect of performing a successful resuscitation is having a good understanding of the complex dynamics of fetal/neonatal physiology and the adaptations that must be made to transition to extra uterine life. This knowledge will allow one to better serve the resuscitative needs of the neonate.<sup>14</sup> Neonatal resuscitation skills are essential for health care providers who are involved in the delivery of newborns. The transition from fetus to newborn requires intervention by a skilled individual or team in approximately 10% of all deliveries. This figure is concerning because 81% of all babies in the India are born in small hospitals, PHC's and other rural facilities the volume of delivery service may not be perceived to economically justify the continues in hospital presence of personnel with high risk delivery room experience.<sup>15</sup> The science underlying neonatal resuscitation is growing exponentially in quantity and quality. So too is the knowledge of effective methodologies that facilitate acquisition and maintenance of the cognitive technical and behavioral skills necessary for successful resuscitation of the neonate<sup>16</sup>.

Worldwide approx. one million babies die per year due to asphyxia out of which approx. 3 Lakhs is contributed by our country. A single intervention-resuscitation-deals with the problem of birth asphyxia as it occurs. The need for resuscitation should always be anticipated. Thus every birth attendant should be skilled in newborn resuscitation. Basic resuscitation, done correctly, will help most, even where only few resources and simple training are available. Neonatal resuscitation means to revive or restore life to a baby from the state of asphyxia. The aim of neonatal resuscitation program is to teach the steps necessary to ventilate a newborn baby that is not breathing and protect the life of baby. Ninety per cent of



newly born babies make the transition from intrauterine to extra uterine life without difficulty. They require little or no assistance to begin spontaneous and regular respiration. Approx. 10% of newborn require some assistance to begin breathing at birth and only about 1% may need extensive resuscitative measures to survive.<sup>17</sup>

Evidences from the above studies shows that delay in the establishment of resuscitation may lead to brain damage, asphyxia, nerve damage in newborn. So, asphyxia should be treated as early as possible. The nurses lack their knowledge regarding emergency care to be provided to the neonates at risk, like neonatal resuscitation and in this perspective; thus the investigators felt the need to take up the study, as the researchers had themselves been a bed-side nurse for some period of time and has worked in different medical and surgical areas. Therefore the investigators had decided to assess the knowledge of staff nurses regarding neonatal resuscitation working in selected hospital with view to develop a self-instructional module (SIM) to enhance their knowledge. The investigators also found that this study will help the staff nurses to increase their knowledge regarding neonatal resuscitation which in turn help to reduce brain damage and neonatal mortality rate (NMR) in India.

## **2. OBJECTIVES OF THE STUDY**

- To assess the pretest knowledgescore of staff nurses regarding resuscitation of neonate after birth.
- To assess the posttest knowledge score of staff nurses regarding resuscitation of neonate after birth.
- To evaluate the effectiveness of Self Instructional Module by comparing pretest and posttest knowledge score on neonatal resuscitation among staff nurses working in selected hospital Srinagar.
- To find out the association between pretest knowledge score with demographic variables (age, gender, education, and working experience) among staff nurses in selected hospital Srinagar.

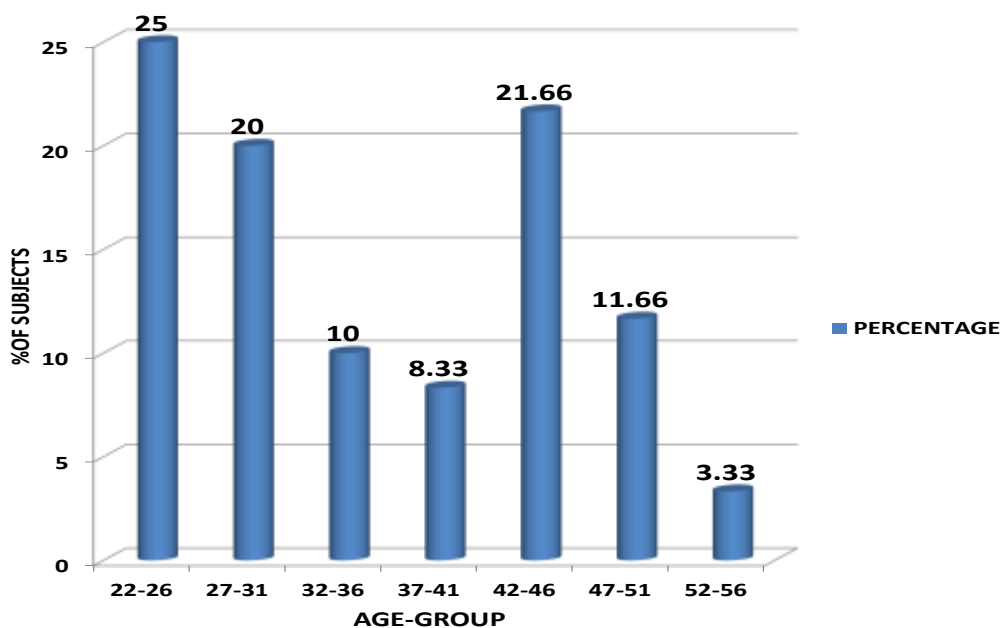


### 3. METHODOLOGY

A pre-experimental study design was conducted to assess the knowledge of staff nurses regarding neonatal resuscitation in selected hospital Srinagar. 60 subjects were selected by purposive sampling technique. Structure Knowledge questionnaire was adopted to collect the information from the participants in selected hospital Srinagar. The tool consisted of demographic variables and staff nurses. Prior to data collection informed consent was obtained from the participants. The data was analyzed using descriptive and inferential statistics.

### 4. RESULT:

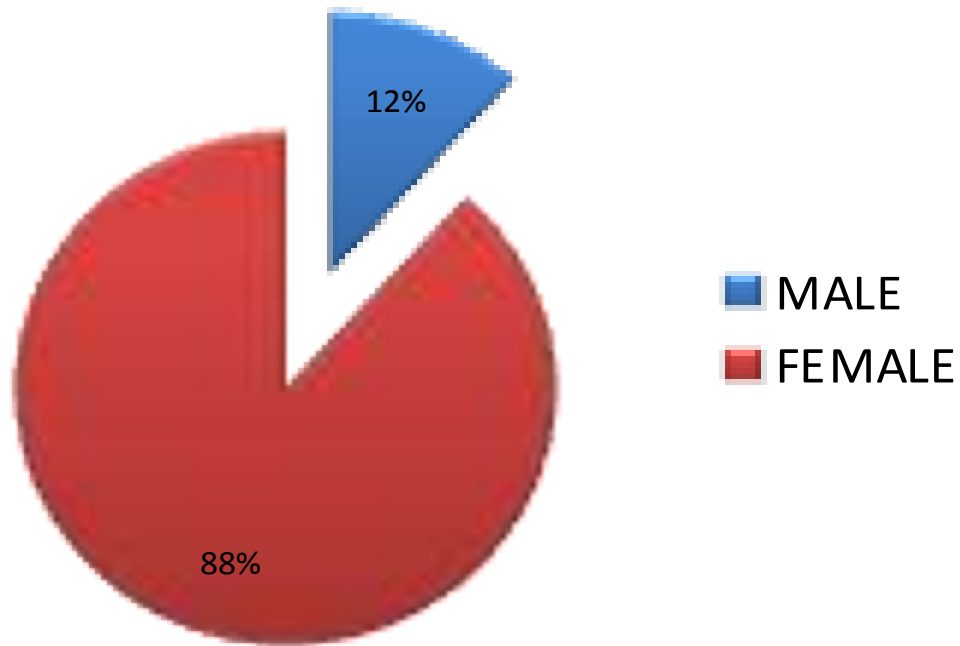
**Figure 1:** Distribution of study subjects (staff nurses) according to their age.



The data presented in figure 1 revealed out of 60 study subjects that majority of 15(25%) respondents were in the age group of 22-26 years, 13(21.66%) were in the age group of 42-46 years, 12(20%) were in the age group of 27-31 years, 7(11.66%) were in the age group of 47-51 years, 6(10%) were in the age group of 32-36 years, 5(8.33%) were in the age group of 37-41 years, 2(3.33%) were in the age group of 52-56 years.



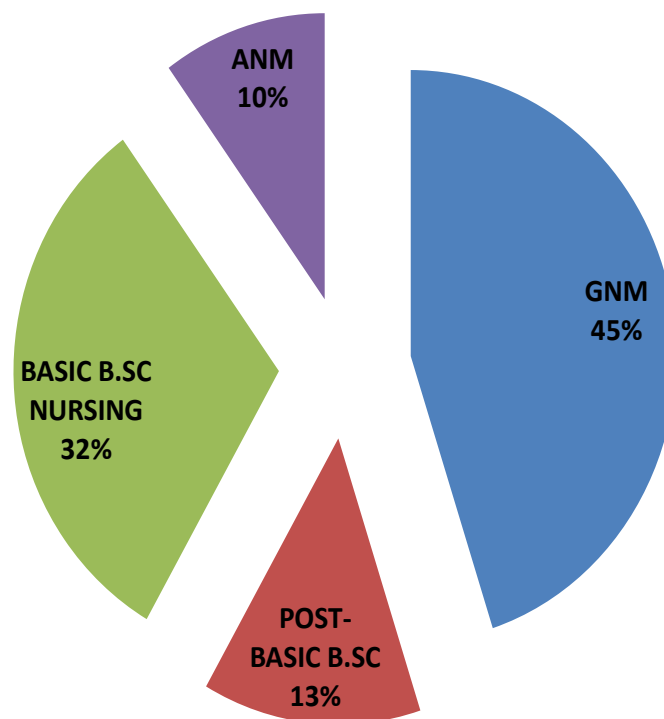
**Figure 2:** Distribution of study subjects (staff nurses) according to their Gender.



The data presented in figure 2 revealed that majority of 53(88%) respondents out of 60 were in the age group of 22-26 years, 7(12%) were in the age group of 42-46 respectively.

**Figure 3:** Distribution of study subjects (staff nurses) according to their professional qualification.

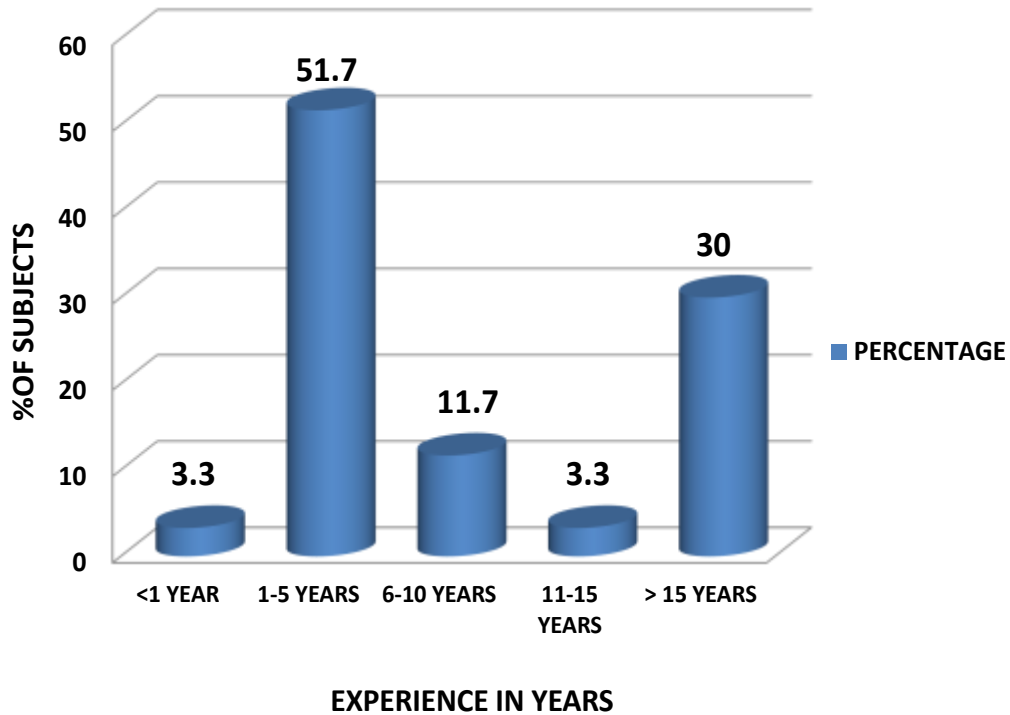




The data presented in figure 3 revealed that out of 60(100%) respondents, 27(45.0%) had GNM qualification, 19(31.7%) had B.Sc Nursing qualification, 8(13.3%) had post Basic B.Sc Nursing a qualification and 6(10%) had ANM qualification.

**Figure 4:** Distribution of study subjects (staff nurses) according to their working experience.





The data presented in figure 4 revealed that out of 60 study subjects 31(51.7%) , were having 1-5 years of experience , 18(30%) were having greater than 15 years of experience, 7(11.7%) were having 6-10 years of experience, 2(3.3%) were having 11-15 years of experience , 2(3.3%) were having less than one year of experience.

**Table 1: Showed Mean, Median & Standard Deviation of Pre and Post-Test Knowledge Regarding neonatal resuscitation Among Staff Nurses in selected hospital Srinagar.**



**TABLE 1:PRETEST- POST TEST KNOWLEDGE SCORES.**

KNOWLEDGE SCORES.	MEAN SCORE	S.D	MIN.	MAX.	RANGE	MEDIAN
PRE-TEST SCORE	23.05	4.925	13	34	21	23
POST-TEST SCORE	46.60	1.564	43	50	7	46

The table 1: showed that the mean score of pretest knowledge of the subjects is **23.05** and Standard deviation **4.925** whereas the mean score of posttest knowledge of the subject is **46.60** and standard deviation is **1.564**.

**Table: - 2Analysis of Level of knowledge score of subjects regarding neonatal resuscitation.**



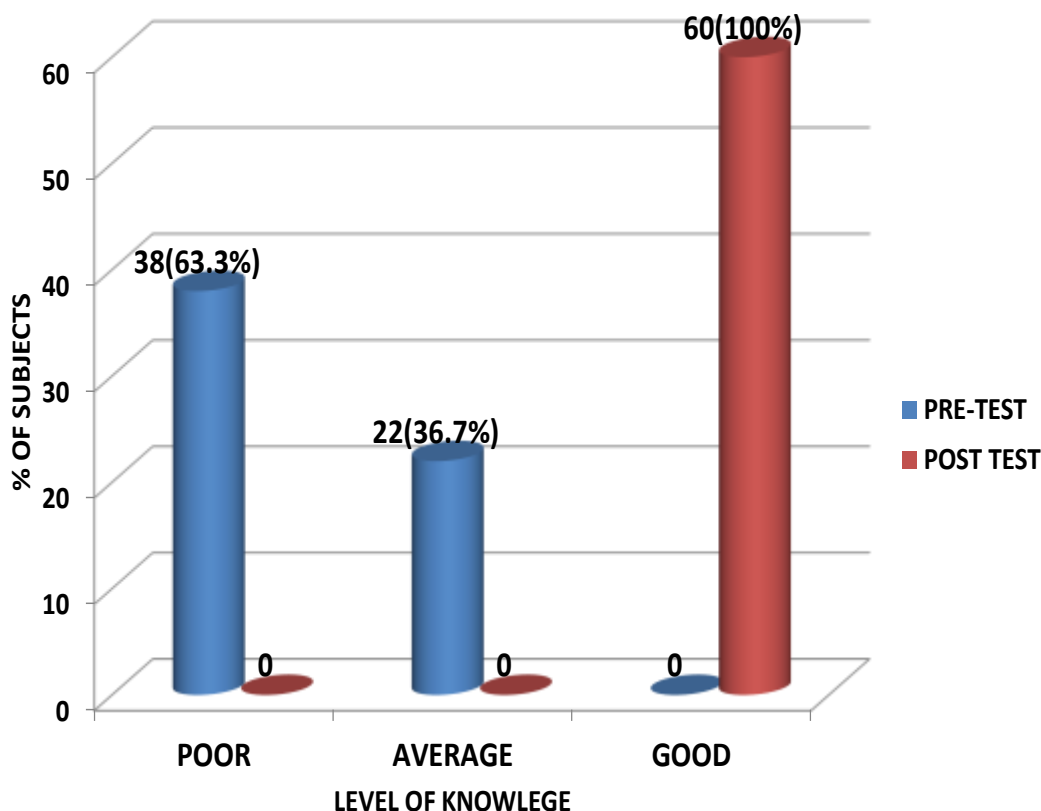
**TABLE 2: ANALYSIS OF LEVEL OF KNOWLEDGE SCORE OF SUBJECTS REGARDING NEONATAL RESUSCITATION.**

**N=60**

LEVEL OF KNOWLEDGE	PRE-TEST n(%)	POST-TEST n(%)
<b>POOR</b>	<b>38 (63.3%)</b>	<b>0 (0%)</b>
<b>AVERAGE</b>	<b>22(36.7%)</b>	<b>0 (0%)</b>
<b>GOOD</b>	<b>0(0%)</b>	<b>60 (100%)</b>
<b>TOTAL</b>	<b>60 (100%)</b>	<b>60 (100%)</b>

Table 2 showed the Analysis of the level of knowledge scores, shows that in pre test **38 (63.3%)** of subjects had poor level of knowledge, **22(36.7%)** had average level of knowledge and none of the subjects had good level knowledge, while as in post-test all of the subjects **60 (100%)** had good level of knowledge, none of subjects had average as well as poor level of knowledge.

**Figure 5: Analysis of Level of knowledge score of subjects regarding neonatal resuscitation.**



The data presented in figure 4 revealed that out of 60 study subjects **38 (63.3%)** of subjects had poor level of knowledge, **22(36.7%)** had average level of knowledge and none of the subjects had good level knowledge, while as in post-test all of the subjects **60 (100%)** had good level of knowledge, none of subjects had average as well as poor level of knowledge



Table 3:- Analysis Of Effectiveness Of Self Instructional Module By Comparing Pretest And Posttest Knowledge Score Regarding Neonatal Resuscitation Among Staff Nurses.

## Comparisopn between pretest and posttest knowledge score

KNOWLEDGE	MEAN SCORE	S.D	MEAN DIFFERENCE	P-VALUE
PRE-TEST	23.05	4.925	23.55	<0.001
POST-TEST	46.60	1.564		

- Table 3 showed that the mean posttest knowledge score 46.60 was found to be significantly higher than mean pre-test knowledge score 23.05 and the mean difference is 23.55 ( $p < 0.001$ )
- Therefore, there is significant difference between pre-test and post-test knowledge score, hence  $H_1$  research hypotheses is accepted as  $p < 0.05$  and  $H_0$  null hypotheses (There is no significant difference between the pretest and posttest knowledge scores of staff nurses working in selected hospital regarding neonatal resuscitation) is rejected.
- The mean post-test knowledge score was found to be higher than mean pre-test knowledge score, therefore the SIM is found to effective in increasing the knowledge of the staff nurses regarding neonatal resuscitation.



**Table 4: Analysis of Association Of Pre-Test Knowledge Scores With Selected Demographic Variables.**

CHARACTERISTIC.	CATEGORY	MEAN	S.D	MEAN DIFF.	P-VALUE
AGE (YEARS).	<30	22.06	4.48	1.03	0.109 (NS)
	30-40	23.09	4.30	3.21	
	>40	25.27	5.82	2.18	
GENDER.	MALE	25.29	5.85	2.54	0.249 (NS)
	FEMALE	22.75	4.77		
PROFESSIONAL QUALIFICATION.	GNM	22.58	5.26	0.17	0.602 (NS)
	POST BASIC	22.75	5.23	1.42	
	BASIC B.SC	24.00	4.26	1.25	
WORKING EXP. (YEARS)	<5	22	4.54	2.59	0.046 (S)
	>5	24.59	5.33		
IN-SERVICE EDUCATION.	NO	22.46	4.88	5.29	0.007 (S)
	YES	27.75	3.53		
NEONATAL RESUSCITATION PERFORMED.	<10	22.52	4.58	2.15	0.132 (NS)
	>10	24.67	5.83		

⊙ The data in Table 4 depicted that there was statistically significant association between the pre-test knowledge with selected demographic variables (working experience and In-service education at  $p < 0.05$ ). Hence  $H_2$  was accepted for the two variables. However there was no statistically significant association between pre-test knowledge with these demographic variables (age, gender, professional qualification, number of resuscitation performed at  $p > 0.05$ ). Hence  $H_2$  was rejected for these variables at 0.05 level of significance.



## **5. RECOMMENDATIONS:**

The Following studies can be undertaken in relation to present study

- A similar study need to be undertaken with a large number of samples for better generalization.
- A similar study can be conducted by seeking other variables.
- A true Experimental research approach can be used.
- The study can be conducted among nursing student's to assess their knowledge regardingneonatal resuscitation.
- Setting can be changed by involving more hospitals and nursing homes.
- A comparative study can be conducted to assess the knowledge and attitude regarding neonatal resuscitation among nurses in hospitals.
- A comparative study can be conducted between nurses and students related importance of neonatal resuscitation.

## **6. CONCLUSION:**

The following conclusions were drawn on the basis of the findings of the study.

- Pretest findings showed the Knowledge among staff nurses working in selected hospitals were found poor regarding neonatal resuscitation in pre-experimental group.
- There was improvement in knowledge of study subjects after the implementation of self-instructional module regarding neonatal resuscitation in pre-experimental group.
- The self-instructional module was found effective in improving the knowledge regarding neonatal resuscitation as it was evident from posttest knowledge scores and when compared with pretest knowledge score.
- There wassignificant association between working experience and in-service educationof staff nurses with their pre-test knowledge as ( $p$ -value $<0.001$ ).So $H_2$  was accepted. Howeverthere was no statistically significant association between pre-test knowledge score with these demographic variables (age, gender, professional qualification, number of resuscitation performed) at ( $p >0.05$ ). Hence  $H_2$  was rejected for these variables at 0.05 level of significance.





- This indicated that self-instructional module can remain effective if provided regular basis to nursing students and staff nurses in order to increase the knowledge regarding neonatal resuscitation because they are dealt with pediatric and maternity hospitals and there by reduce the rate of prenatal, neonatal and infant mortality among children.

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