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A quasi-experimental study to assess the effectiveness of lecture-cum demonstration regarding the neonatal cardio-pulmonary resuscitation algorithm among the nursing students in selected nursing colleges at Bangalore

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ABSTRACT

Approximately 5% to 10% of the newly born population require some degree of active resuscitation at birth (eg, stimulation to breathe), and approximately 1% to 10% born in the hospital are reported to require assisted ventilation. 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 infants per year through implementation of simple resuscitative techniques. Although the need for resuscitation of the newly born infant often can be predicted, such circumstances may arise suddenly and may occur in facilities that do not routinely provide neonatal intensive care. Thus, it is essential that the knowledge and skills required for resuscitation be taught to all providers of neonatal care.

Objectives of the study

1. To assess the existing level of knowledge of nursing students regarding neo-natal cardio-pulmonary resuscitation algorithm in both control and experimental group with the help of structured knowledge questionnaire
2. To assess the effectiveness of lecture- cum demonstration regarding neo-natal cardio-pulmonary resuscitation algorithm.
3. To determine the association between the knowledge of nursing students regarding neo-natal cardio- pulmonary resuscitation algorithm with their demographic variables.

HYPOTHESIS

H1-There will be significant difference between post-test knowledge score of nursing students in experimental and control group regarding neonatal cardio- pulmonary resuscitation algorithm after the lecture-cum demonstration class.

H2-There will significant association between post-test knowledge scores of nursing students with their selected demographic variables in both experimental and control groups.

Organization of study findings

The data were collected were tabulated, analyzed and interpreted using descriptive and inferential statistics. The data have been presented under the following sections:

Section 1 Description of selected socio demographic variables of the nursing students

Section 2 Analysis and interpretation of pre-test and post-test score of knowledge on neonatal cardio- pulmonary resuscitation algorithm.

Section 3 Comparison of knowledge level between pre-test and post-test score

Section 4 Effectiveness of lecture-cum demonstration programme.

Section 5 Association of post-test knowledge with socio demographic variables.

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METHODS

Research Approach was quasi-experimental quantitative Approach. Design: Non randomized control group Pre-Test Post-Test Design. **Purpose**: to assess the effectiveness of lecture-cum demonstration regarding the neonatal cardio-pulmonary resuscitation algorithm among the nursing students in selected nursing colleges at Bangalore. Study Setting was selected schools in Bengaluru. **Population**: Nursing students in Bengaluru. Sample Size was 100, 50 experimental and 50 control, Technique Data Collection Instruments is Structured Interview with Questionnaire. Data Analysis done by Percentage and Frequency, Standard Deviation, unpaired t Test and Chi-Square Test.

Results

The pre-test values shows that, in experimental group, 76% (38) of nursing students had poor knowledge, 24%(12) of nursing students had average level of knowledge and none of them have good knowledge. In control group, 56%(28) of nursing students had poor knowledge, 44%(22) of nursing students had average knowledge and none of them have good knowledge. The post-test values shows that, in experimental group, 0%(0) of nursing students had poor knowledge, 64%(32) of nursing students had average level of knowledge and 36%(18) of them have good knowledge. In control group, 48%(24) of nursing students had poor knowledge, 52%(26) of nursing students had average knowledge and none of them have good knowledge. The value of unpaired t test was 13.04 which shows a huge difference in pre-test and post-test knowledge.

INTERPRETATION

The pre-test finding showed that, most of the nursing students had inadequate knowledge. Regarding the knowledge, there is a huge increase in the knowledge of nursing students after the administration of structured teaching programme. Regarding the association of demographic variables, they didn't show any type of association with the knowledge score.

Key words-: Effectiveness, lecture-cum demonstration, cardio-pulmonary resuscitation.

INTRODUCTION

The measure of a civilization is how it treats its weakest members," said Mahatma Gandhi. New-borns are undisputedly the weakest members of our society. Globally, neonatal deaths now account for over 40% of the under-5 deaths, and must be addressed to accelerate progress towards the Sustainable Development Goal – 3 (SDG3), since reducing the neonatal mortality to 12 per 1000 live births by 2030 is one of the targets under SDG3. India is the epicenter of world's neonatal mortality with every fourth dying new-born of the world being Indian. Close to 700,000 new-borns die every year in India – a horrifying rate of 2 neonatal deaths every minute. Preterm birth complications (34%), infections (21%), and birth asphyxia (24%) are the three topmost causes of neonatal mortality worldwide. Mortality risk is highest on the first day of life contributing up to 36% of all neonatal deaths – most of these due to birth asphyxia.[1]

Apart from neonatal deaths, two worrisome aspects are very closely linked to birth asphyxia. First, many health facilities do not keep detailed records of fresh still births (FSB). National still birth estimates suggest that around 600,000 still births occur every year in India. Of these, 30% are attributed to the intra-partum causes, mostly birth asphyxia. However, due to various social, legal and moral pressures and stigma surrounding a neonatal death, misclassifications of neonatal deaths as FSBs are common whether deliberately or unknowingly. Thus, the real asphyxia-related mortality includes many unreported still births,

and thus far exceeds the reported numbers. Second, mortality is just a small 'tip of the iceberg' of the impact of birth asphyxia. Worldwide more than one million children surviving birth asphyxia annually go onto suffer its long-term consequences – cerebral palsy, learning disorders and other disabilities.[2]

On the brighter side, birth asphyxia operates mainly in the first few minutes immediately after birth, and hence, unlike the other two causes, provides a narrow but definite window of opportunity. If appropriate actions are taken in this narrow timeframe – essentially the First Golden Minute of life – a big load of neonatal mortality is largely preventable. For this, it is crucial whoever is likely to attend a birth in the capacity of a health personnel, needs to be identified and trained in these steps of basic neonatal resuscitation – preparation for birth; new-born assessment at birth to identify whether it is breathing well on its own or needs assistance; initial steps viz. providing warmth, clearing airway as necessary, thorough drying, and stimulation to start breathing; and positive pressure ventilation by bag and mask, if needed. These simple steps can be learnt by any healthcare personnel, and are sufficient to manage almost 99% of new-borns as advanced resuscitative measures like chest compression and medications are known to be required in hardly 1% of the births.[3]

Helping Babies Breathe (HBB)' by the American Academy of Paediatrics (AAP) is a simple, evidence-based training curriculum in basic new-born resuscitation for birth attendants [6]. The Indian Academy of Paediatrics (IAP) and the Government of India have prepared a similar basic resuscitation training program called 'Navjaat Shishu Suraksha Karyakram' in government and 'Basic Neonatal Care and Resuscitation Program' in private sector. The Neonatal Resuscitation Program – First Golden Minute (NRP-FGM) Project of IAP aims to train 200,000 birth attendants through a network of trainers from its own members and partner organizations.[4]

India's health goal for the year 2000 included reducing infant mortality to 60 per 1000 live births and perinatal mortality to less than 25 per 1000 live births. Every minute 20 children under the age of five years die, i.e., 30,000 children die every-day and 10.6 million children die each year as the statistics quoted by WHO in 2005. Those have proved a threat to human life, especially in increasing the morbidity and mortality. The government is trying its best to improve children's life through various laws, regulations, training programmes, and polices delivered through the healthcare system. Among them the national population policy in the year 2000 has put forward a goal to reduce infant mortality rate below 30 by 2010. So, if the student nurses and staff nurses in the NICU and delivery room are being trained to give effective cardio pulmonary resuscitation (CPR), they could contribute to the reduction of the mortality rate.[5]

NEED FOR THE STUDY

Resuscitation of the newly born infant presents a different set of challenges than resuscitation of the adult or even the older infant or child. The transition from placental gas exchange in a liquid-filled intrauterine environment to spontaneous breathing of air requires dramatic physiological changes in the infant within the first minutes to hours after birth.[6]

Approximately 5% to 10% of the newly born population require some degree of active resuscitation at birth (eg, stimulation to breathe),1 and approximately 1% to 10% born in the hospital are reported to require assisted ventilation.2 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 infants per year through implementation of simple resuscitative techniques.3 Although the need for resuscitation of the newly born infant often can be predicted, such circumstances may arise suddenly and may occur in facilities that do not routinely provide neonatal intensive care. Thus, it is essential that the knowledge and skills required for resuscitation be taught to all providers of neonatal care.[7]

With adequate anticipation, it is possible to optimize the delivery setting with appropriately prepared equipment and trained personnel who are capable of functioning as a team during neonatal resuscitation. At least 1 person skilled in initiating neonatal resuscitation should be present at every delivery. An additional skilled person capable of performing a complete resuscitation should be immediately available.

Neonatal resuscitation and paediatric resuscitation are the standard of practice for all neonatal and paediatric nurse practitioners, midwives, respiratory therapist, staff nurses, and physicians who work in maternity, neonatal and paediatric settings. Neonatal and paediatric resuscitation are the basic emergency procedures for life support in neonates and children. It consists of artificial respiration, cardiac massage and medication. It decides the life of a neonate or a child who is at risk of survival from dependent to independent life.[8]

Globally, the neonatal mortality rate is 5.1 million per annum, of these, five million annual neonatal deaths (98% of the world's total) occur in developing countries. In other words, of 136 million babies born annually, around 10 million babies require assistance to breath. Each year 814.000 neonatal deaths result from intra-partum related events in term babies and 1.03 million babies from complications of prematurity. Still no systematic assessment of mortality reduction or resuscitation has been done.

The current state of neonatal death in India is; three neonates are dying every minute in India and every fourth baby born is low birth weight. India contributes 30% of the global burden of neonatal deaths. In India the number is estimated to be about 1 million, highest for any country. Current neonatal mortality rate in India is 47\1000 live births accounting for almost two third of the infant deaths. Neonatal mortality rate (NMR) shows a wide variation in different states, being the lowest in Kerala (11.5) with highest rate is Chhattisgarh (51.1), Jharkhand (48.6), Uttar Pradesh (47.6) and Madhya Pradesh (44.9). A survey in Karnataka depicts a neonatal mortality rate of 28.9. The world health organization reports that between 4 to 9 million new born have asphyxia of whom an estimated 1.2 million die from birth asphyxia. Approximately 3.2 million still births occur in the developing countries. Birth asphyxia results from events in the antepartum (50%), intra partum (40%) and post-partum (10%) periods.[9]

When a baby is born, he or she has 60 seconds in which to start breathing, most babies start to breathe on their own, but globally, approximately 10 million new born babies can't do it by themselves, and need some assistance at birth. That time this golden minute becomes more important.[9]

All babies need assessment and routine care at birth and for 80-90% of them, this simple care is sufficient. 8-10% of babies who do not breathe at birth will respond to drying, warmth, clearing of the airways and being provided with stimulation to breath. Only 3-6% of babies need bag and mask ventilation in order to initiate breathing. Moreover, only 1% of babies need advanced methods of resuscitation, such as chest compression and medication. Therefore, if focus is placed on the delivery of essential interventions, such as drying,

warmth, clearing the airways, providing them with stimulation to breathe and bag and mask ventilation within one minute of life, many babies can be saved.[10]

METHODOLOGY

Research Approach

The approach is adopted for this study is quasi-experimental quantitative approach.

Research Design

Non randomized control group pre-test post-test design

VARIABLE:

Independent Variable

Lecture-cum demonstration on neonatal cardio-pulmonary resuscitation algorithm among the nursing students

Dependent variable

The knowledge of nursing students regarding neonatal cardio-pulmonary resuscitation algorithm

Extraneous Variables

Age in years, religion, family income, type of family, sources of information, area of residence, course of study, previous knowledge.

Population

In the present study, students studying nursing in selected nursing colleges at Bangalore.

Sample and Sampling Technique:

A sample of 100 nursing students in selected nursing colleges at Bangalore.

Nursing students were selected by non- probability convenience sampling technique.

SAMPLING CRITERIA

Inclusion Criteria

- Nursing students who are regular in class will be included
- Students willing to participate in the study.
- Both male and female students will be included.
- B.Sc. and GNM students will included

Exclusion Criteria

- Other level of students will be excluded.
- ANM and M.Sc. will be excluded
- Irregular students will be excluded.
- Students with disabilities will be excluded

- **Organization of study findings:**
- The data were collected were tabulated, analyzed and interpreted using descriptive and inferential statistics. The data have been presented under the following sections:
- **Section 1** Description of selected socio demographic variables of the nursing students
- **Section 2** Analysis and interpretation of pre -test and post- test score of knowledge on neonatal cardio- pulmonary resuscitation algorithm.
- **Section 3** Comparison of knowledge level between pre-test and post-test score
- **Section 4** Effectiveness of lecture-cum demonstration programme.
- **Section 5** Association of post-test knowledge with socio demographic variables.

FINDINGS OF THE STUDY

- **Description of selected socio demographic variables of nursing students.**
- **Regarding age of the nursing studnents**: 50 samples in experimental group consists of 50% of subjects in the age group 17-22 years, 28% in the age group of 23-28 and the remaining 22% is in the age group 29-34 years. On the other hand, control group consists of, of 54% of subjects in the age group 17-22 years, 34% in the age group of 23-28 and the remaining 12% is in the age group 29-34 years. The majority of nursing students in experimental group were in the age group 17-22 years50% (25) and the majority of nursings students in the same age group 17-22 years 54% (27).
- **Regarding sex of the nursing studnents**, the table data depicts that there are 32% of the male subjects and 68% of the female subjects in the experimental whereas control group consists of 28% males and 72% females. The majority of nursing students in both experimental and cotrol group were females. The percentages and values of female students were 68% (34), 72% (36) respectively.
- **Regarding religion of the nursing studnents**, the data shows that, in the experimental group, the majority of sample were belongs to Hindu religion 40%, 24% is muslims and the remaining 36% of Christians. At the same time the control group consists of 36% of Hindus, 20% of Muslims and 44% of Christians. The majority of nursing students in both experimental and control group were Hindus. The percentage and value of them are 40% (20), 36% (18).
- **Regarding the type of family of the nursing studnents**, the table values represent that, the samples in the experimental group composed of 56% of subjects living in nuclear family and 44% living in extended family. at the same time the control group consists of 60% subjects living in nuclear family and the remianing 40% living in extended family. The majority of nursing students in both experiemental and control group were living in nuclear families. The percentge distribution of them are 56% (28), 60% (30).
- **Regarding course of nursing studnents**, this is observed that, in experimental group, there is 60% of GNM students and 40% of BSc nursing studets, whereas in control group, there is 64% of GNM students and 34% of BSc students. The majoriry of nursing students in both experimental and control group were GNM students. The percentage distribution of GNM students are 60% (30), 64% (32).
- **Regarding family income of the nursing studnents,** the data showing that, regarding the family income, 16%of them had family income less than 10000, 42% of subjets had family income between 10000 and 20000, 24% of subjects had family income between 20000 and 30000, and the remaining 18% had family income more than 30000 in the experimental group. In the con trol group, 20% of subjects had family income less than 10000, 46% had family income between 10000 and 2000, 20% had family income between 20000 and 30000 and the remaining 14% had a familyincome more than 30000. The majority of ursing students in both experimetal and control group had same range of family income 10000-20000. The percentage and value of them are 42% (21), 46% (23).
- **Regarding area of residence of nursing studnents,** 40% of the subjects were living in rural area and 60% were living in the urban area in the experimental group whereas 48% were living in rural area and 44% subjects were living in urban area. The ajority of nursing students experimental group were living in urban area 60% (30) whereas the amjority of nurisng students in control group were living in rural area 48% (24).

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SECTION -II

ANALYSIS AND INTERPRETATION OF PRE -TEST AND POST-TEST KNOWLEDGE SCORES OF NURSING STUDENTS REGARDING THE NEONATAL CARDIO-PULMONARY RESUSCITATION

- **TABLE – Mean, Mean percentage and standard deviation for the pre-test knowledge of nursing students.**

KNOWLEDGE ON		**No.of Questions**	**Min – Max score**	**Mean**	**SD**	**% of mean score**
EXPERIMEN	Introduction	4	0-4	1.02	1.25	25.5
	Assessment of new born	7	0-7	3.35	1.68	33.57
	Steps of neonatal CPR	12	0-12	5.36	1.54	44.67
	Post CPR care	5	0-5	1.98	1.48	39.6
	Discontinuing CPR	2	0-2	0.54	1.67	27
TOTAL		**30**	**0-30**	**12.25**	**1.52**	**34.06**
CONTROL	Introduction	4	0-4	1.54	2.5	38.5
	Assessment of new born	7	0-7	3.25	1.9	46.42
	Steps of neonatal CPR	12	0-12	4.58	2.4	38.16
	Post CPR care	5	0-5	1.99	2.9	39.8
	Discontinuing CPR	2	0-2	0.86	1.4	43
TOTAL		**30**	**0-30**	**12.22**	**2.22**	**41.17**

- **TABLE – Mean, Mean percentage and standard deviation for the post-test knowledge of nursing students.**

KNOWLEDGE ON		**No.of questions**	**Min – Max score**	**Mean**	**SD**	**% of mean score**
EXPERIMENTA	Introduction	4	0-4	2.10	2.56	64
	Assessment of new born	7	0-7	5.28	3.25	75.42
	Steps of neonatal CPR	12	0-12	8.24	2.58	68.67
	Post CPR care	5	0-5	2.54	2.96	50.8
	Discontinuing CPR	2	0-2	1	2.47	50
TOTAL		**30**	**0-30**	**19.16**	**2.76**	**61.778**
CONTROL	Introduction	4	0-4	1.56	2.0	39
	Assessment of new born	7	0-7	3.32	1.5	47.42
	Steps of neonatal CPR	12	0-12	4.9	2.2	40.83
	Post CPR care	5	0-5	1.95	2.4	39
	Discontinuing CPR	2	0-2	0.87	1.4	43.5
TOTAL		**30**	**0-30**	**12.67**	**1.9**	**41.66**

Table shows each domain-wise pre-test knowledge of nursing students on cardio pulmonary resuscitation algorithm before the lecture cum demonstration. They are having maximum knowledge in cardio pulmonary resuscitation algorithm **(**51.42%) and minimum knowledge in cardio pulmonary resuscitation algorithm (35.33%). Overall, they are having 42.31% of knowledge.

SECTION -2

TABLE- ANALYSIS OF PRE -TEST AND POST-TEST KNOWLWDGE SCORE OF NURSING STUDENTS IN EXPERIMENTAL AND CONTROL GROUP

LEVEL OF KNOWLEDGE	EXPERIMENTAL GROUP N=50				CONTROL GROUP N=50			
	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	F	%	F	%	F	%	F	%
POOR	38	76	0	0	28	56	24	48
AVERAGE	12	24	32	64	22	44	26	52
GOOD	0	0	18	36	0	0	0	0

- The pre-test values shows that, in experimental group, 76 % (38) of nursing students had poor knowledge, 24 % (12) of nursing students had average level of knowledge and none of them have good knowledge. In control group, 56 % (28) of nursing students had poor knowledge, 44% (22) of nursing students had average knowledge and none of them have good knowledge.

- The post-test values shows that, in experimental group, 0% (0) of nursing students had poor knowledge, 64% (32) of nursing students had average level of knowledge and 36% (18) of them have good knowledge. In control group, 48% (24) of nursing students had poor knowledge, 52% (26) of nursing students had average knowledge and none of them have good knowledge.

SECTION -3

COMPARISON OF KNOWLEDGE LEVEL BETWEEN PRE-TEST AND POST-TEST SCORE

GROUPS	CATEGORIES	MEAN	STANDARD DEVIATION
EXPERIMENTAL GROUP	PRE-TEST KNOWLEDGE	12.25	1.52
	POST- TEST KNOWLEDGE	19.16	2.76
CONTROL GROUP	PRE-TEST KNOWLEDGE	12.22	2.22
	POST- TEST KNOWLEDGE	12.67	2.87

The table data shows that, in experimental group mean is increased from 12.25 to 19.16 and the standard deviation is slightly increased from 1.52 to 2.76.

In the control group, the mean is slightly increased from 12.22 to 12.67 and the standard deviation is minutely from 2.22 to 2.87.

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SECTION -4

TABLE-14 EFFECTIVENESS OF LECTURE-CUM DEMONSTRATION

KNOWLEDGE	N	Mean	Standard deviation	df	Independent t- value
EXPERIMENTAL GROUP	50	19.16	2.76	98	13.04 P <0.05
CONTROL GROUP	50	12.67	2.87		

The researcher calculated the independent t value for the tabulated data. The calculated t value is 13.04. Then the researcher compared the calculated t value with the critical value. The critical value for this study with 98 degrees of freedom is (1.997). Since the calculated value is lies beyond the critical value the researcher rejected the Null hypothesis and accepted the alternative hypothesis. That means there is a significant change in the knowledge level of pre-test and post-test value of nursing students in experimental and control group. So, this is evident that the lecture-cum demonstration regarding neonatal cardio-pulmonary resuscitation algorithm was effective in terms of knowledge.

SECTION -5

TABLE- ASSOCIATION BETWEEN POST-TEST KNOWLEDGE SCORE OF NURSING STUDENTS WITH THEIR DEMOGRAPHIC VARIABLES IN EXPERIMENTAL GROUP

VARIABLES	CATEGORY	SAMPLE	RESPONDENTS KNOWLEDGE			P value <0.05	$\chi 2$ value
			Good	Average	Poor		
AGE IN YEARS	17-22 years	25	0	9	3	5.991 df=2	2.59 NS
	23-28years	14	0	5	3		
	29-34 years	11	0	8	2		
GENDER	MALE	16	0	11	3	3.84 df=1	1.91 NS
	FEMALE	34	0	14	5		
RELIGION	HINDU	20	0	19	8	5.991 df=2	2.36 NS
	MUSLIM	12	0	6	0		
	CHRISTIAN	18	0	0	0		
	OTHERS	0	0	0	0		
TYPE OF FAMILY	NUCLEAR	28	0	5	6	3.84 df=1	2.89 NS
	EXTENDED	22	0	20	2		
COURSE	GNM	30	0	14	6	3.84 df=1	1.78 NS
	BSC	20	0	6	1		
FAMILY INCOME	<10000	8	0	7	1	7.81 df=3	3.68 NS
	10000-20000	21	0	1	1		
	20000-30000	12	0	17	6		
	>30000	9	0	0	0		
AREAOF RESIDENCE	RURAL	20				3.84 df=1	1.24 NS
	URBAN	30					

The researcher computed the chi square value for each variable. The chi values for each variable was age (χ^2cal=2.59), gender (χ^2cal=1.91), religion (χ^2cal=2.36), type of family (χ^2cal=2.89), course (χ^2cal=1.78), family income (χ^2cal=3.68), area of residence (χ^2cal=1.24).Then the researcher compared the chi value of each variable with respect critical values. The values were inside the range of critical values for each variable. So the researcher rejected the alternative hypothesis and accepted the null hypothesis for each variable for all the variables. The computed value for type of family was beyond the table value. That is there is no significant association between the demographic variable, for all the variables and their knowledge level in experimental group.

TABLE- ASSOCIATION BETWEEN POST-TEST KNOWLEDGE SCORE OF NURSING STUDENTS WITH THEIR DEMOGRAPHIC VARIABLES IN CONTROL GROUP

VARIABLES	CATEGORY	SAMPLE	RESPONDENTS KNOWLEDGE			P value <0.05	χ2 value
			Good	Average	Poor		
AGE IN YEARS	17-22 years	25	0	9	3	5.991 df=2	1.99 NS
	23-28years	14	0	5	3		
	29-34 years	11	0	8	2		
GENDER	MALE	16	0	11	3	3.84 df=1	2.58 NS
	FEMALE	34	0	14	5		
RELIGION	HINDU	20	0	19	8	5.991 df=2	1.39 NS
	MUSLIM	12	0	6	0		
	CHRISTIAN	18	0	0	0		
	OTHERS	0	0	0	0		
TYPE OF FAMILY	NUCLEAR	28	0	5	6	3.84 df=1	2.17 NS
	EXTENDED	22	0	20	2		
COURSE	GNM	30	0	14	6	3.84 df=1	1.97 NS
	BSC	20	0	6	1		
FAMILY INCOME	<10000	8	0	7	1	7.81 df=3	3.14 NS
	10000-20000	21	0	1	1		
	20000-30000	12	0	17	6		
	>30000	9	0	0	0		
AREAOF RESIDENCE	RURAL	20				3.84 df=1	2.14 NS
	URBAN	30					

The researcher computed the chi square value for each variable. The chi values for each variable was age (χ^2cal=1.99), gender (χ^2cal=2.58), religion (χ^2cal=1.39), type of family (χ^2cal=2.17), course (χ^2cal=1.97), family income (χ^2cal=3.14), area of residence (χ^2cal=2.14).Then the researcher compared the chi value of each variable with respect critical values. The values were inside the range of critical values for each variable. So the researcher rejected the alternative hypothesis and accepted the null hypothesis for each variable for all the variables. The computed value for type of family was beyond the table value. That is there is no significant association between the demographic variable, for all the variables and their knowledge level in control group.

Conclusion:

The finding of the study concludes that the nursing students had moderate knowledge on neonatal cardio-pulmonary resuscitation algorithm. The study suggests that the nursing students require educational instruction for improving the knowledge.

IMPLICATIONS

The findings of the study have implications on the field of nursing education, nursing practice, nursing administration and nursing research.

NURSING EDUCATION

Education is the key component to update and improve the knowledge of an individual. In the present scenario, knowledge on neonatal cardio-pulmonary resuscitation much deficient among the nursing students. If the same study is conducted among the staff nurses, it may contribute knowledge to them. Since the topic is has current importance this should be included in the nursing education.

NURSING ADMINISTRATION

Nurse administrators are the key persons to plan, organize and conduct in- service education programmes. Nurse administrator's support should be necessary to conduct and evaluate health education programmes. They can help to improve the knowledge of the staff nurses working in community departments by providing various teaching programmes with the help of various AV aids. They are in a key position to organize, implement and evaluate educative programmes which will in turn helps to improve the knowledge as well as to meet the future needs and accelerate the standards of community services.

NURSING PRACTICE

Nursing is an art and a science. As a science, nursing is based upon a body of knowledge that is always changing with new discoveries and innovations. When nurses integrate the science and art of nursing into their practice, the quality of care provided to clients is at a level of excellence that benefits clients in numerous ways. They are the key persons of the health team, who plays a vital role in the promotion and maintenance of health. They can provide adequate teaching to both parents and family members so that they will come to know about the recent changes. Hence the nurses should have adequate knowledge to improve the standards of community care. The knowledge regarding neonatal cardio-pulmonary resuscitation may enhance the knowledge of nursing personnel and thereby they can improve the neonatal care.

NURSING RESEARCH

The main goal of the nursing research is to improve the knowledge of nursing students through the implementation of evidence-based practice. The study provides a baseline data for conducting other research studies. The study will be a motivation for the budding researchers to conduct similar studies in large scale. The study will be a reference for the research scholars. Further research works can be conducted with every medical condition to identify most effective knowledge imparting strategies.

LIMITATIONS

1) Assessed the knowledge and attitude within one month of duration.
2) The present study is limited to only sample size of 100.
3) The study was a quasi-experimental study which limits the scope of the study**.**

SUGGESTIONS

1) The findings of the study could be made use by all the nursing, medical personnel & allied sciences.
2) Conduct awareness programmes in community and in-service educations on neonatal cardio-pulmonary resuscitation.

RECOMMENDATION

The investigator recommends the following studies to strengthen community health nursing

1) A similar study can be conducted on a larger sample.
2) A similar study can be conducted for nursing staffs.
3) An experimental study can be conducted for hospital staffs.

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