RESEARCH ARTICLE

ASSESSMENT OF STUDENT'S KNOWLEDGE ON NEONATAL RESUSCITATION

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ABSTRACT

Resuscitation of the neonate presents a different set of challenges than resuscitation of the adult or even the older infant or child. For resuscitation measures consider being successful, it requires accurate understanding by the nursing students working in the delivery room, postnatal and neonatal units to have adequate skills for prompt neonatal resuscitation technique. The research design adopted for the study was descriptive research design. The study was conducted in selected Nursing College at Mangalore. The samples comprised of 100 nursing students. The samples were selected using purposive sampling technique. Data was collected using demographic proforma, structured knowledge questionnaire on neonatal resuscitation. Data was analyzed using descriptive and inferential statistics. **Result: (**69%) were had average knowledge regarding neonatal resuscitation, (60.50%) were had adequate knowledge on meaning structure and functions regarding neonate, (50.36%) were had knowledge on initiation step of neonatal resuscitation technique and (35.50%) were had adequate knowledge regarding applying chest compression during neonatal resuscitation. The study concluded that Nursing students, as the key personnel in acquiring adequate knowledge regarding management of neonatal resuscitation, practical training programme regarding neonatal resuscitation should consider in the nursing education to ensure acceptable neonatal outcome.

Key words: Knowledge, Neonatal Resuscitation, Students

INTRODUCTION:

Birth of a healthy neonate baby is one of the greatest gifts of the nature. The mechanism of birth takes only a few hours, but it is the finest period of life. Since it is the most precarious period of life, it is associated with largest number of deaths as compared to any other phase of life [1].

After birth, the airways and the alveoli must be cleared of foetal lung fluid so that the lungs can operate as a functional respiratory unit providing adequate gas exchange [2]. Pulmonary blood flow must increase, and natural respirations must be well established. In uterus, most of the blood circulation is shunted away from the pulmonary system and directed to the placenta where foeto-placental gas exchange occurs [3].

Oxygen is important for every part of the human life. Without it, the cells that make up our organs - brain and other body parts- will die [4]. Before birth, the foetus acquired oxygen from the placenta. After birth, the umbilical cord is denched by artery forceps and slotted, after the baby start natural breathing pattern will start [5]. If the baby is not able to start breathing immediately after

birth, baby may even die due to lack of oxygen. A proper resuscitation technique helps the baby to promote normal breathing [6].

Resuscitation of the neonate presents a different set of challenges than resuscitation of the adult or even the older infant or child [7]. 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 [8].

Determination of the need for resuscitative efforts should begin immediately after birth and proceed throughout the resuscitation process [9]. An initial complex of signs (Meconium in the amniotic fluid or on the skin, cry or respirations, muscle tone, color, term or preterm gestation) should be evaluated rapidly during physical examination of neonate [10].

Evaluation and intervention for the newly born are often concurrent processes, especially when there is lack or less than one trained provider is present. To promote educational growth, this process is often taught as a

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sequence of distinct steps. The appropriate response to abnormal findings also depends on the time elapsed since birth and how the infant has responded to previous resuscitative measures [11].

Spontaneous breathing after birth is not a problem for most babies. However, one in twenty babies might require help with breathing at birth[12]. It is not always possible to know in advance which babies will need this help since up to half of them (who require resuscitation) have no identifiable risk factors before birth. Hence resuscitation must be awaited at each birth [13].

Approximately 5% to 10% of the neonate population require some degree of active resuscitation at birth (e.g., stimulation to breathe), and approximately 1% to 10% born in the hospital are reported to require assisted ventilation [14]. More than 5 million neonatal deaths occur worldwide each year[15]. It has been accounted that birth asphyxia accounts for 19% of these death rate among children, suggesting that the outcome might be improved for more than 1 million infants per year through implementation practicing of simple resuscitative techniques [9].

Effective neonatal resuscitation is essential in reducing the sequel of birth asphyxia estimated to have a mortality of 2 million a year with 99% of deaths in developing countries [16]. For resuscitation measures consider being successful, it requires accurate understanding by the nursing students working in the delivery room, postnatal and neonatal units to have adequate skills for prompt neonatal resuscitation technique [17].

Many neonates, especially in developing countries, die unnecessarily because of lack of knowledge on neonatal resuscitation have not had the opportunity to learn how to give simple resuscitation[18]. Birth asphyxia (failure to establish breathing at birth) accounts for about 900000 deaths each year and is one of the primary causes of early neonatal mortality [19].

Although the need for resuscitation of the neonate infant often can be envision, such incidences may occur suddenly and in facilities that do not routinely provide neonatal intensive care. Thus, it is important that the knowledge and skills required for resuscitation be taught to all healthcare providers of neonatal care [20]. There is a significant lack of knowledge among student nurses on neonatal resuscitation. The investigator realized that neonatal resuscitation play a major role in early diagnosis, appropriate measure and accordingly, reduction of adverse consequences among neonates.

Handling of such critical aspects requires through knowledge .So investigator has taken up a project to assess the knowledge of nursing students regarding neonatal resuscitation.

OBJECTIVES OF THE STUDY:
1) To assess the knowledge of nursing students regarding neonatal resuscitation.
2) To find the association between knowledge with selected demographic variables.

HYPOTHESIS:
Hypothesis will be tested at (0.05) level of significance.
H_0: There is no association between the knowledge scores with demographic variables.

MATERIALS AND METHODS:
A descriptive approach was selected to carry out the study. The study population comprised of nursing students from selected nursing college at Mangalore. The sample size for the study was 100 nursing students. Prior written permission was obtained from the Yenepoya University Ethics Committee and the school authority. Demographic performa, self structured questionnaire were used to assess the knowledge on neonatal resuscitation. Validity was obtained from experts from various fields. In order to assess the reliability of the self structured questionnaire split half method was used. The calculated value is($r = 0.76$). The tools were sufficient reliable for the purpose of the study. The participants were explained and consent was obtained from the study participants. The participants were assured about the confidentiality of their responses. Data was analyzed using descriptive and inferential statistics.

RESULTS:
1. Sample characteristics
Among 100 nursing students majority (62%) nursing students were in the age group of 22-23 years,(31%) were between the age group 18-20 years , (7%) of students were in the age group of 23-25 years, no one were in the age group 26-30 years. Maximum (85%) were females and (15%) were males, Majority (64%) were Christian ,(31%) were Hindu,(5%) were Muslim and no one were in other religion categories. In the course of study majority (92%) were studying in III [rd] B. Sc nursing and (8%) were Post Basic B. Sc Nursing students. Majority were (67%) were attended the seminar/workshop and (33%) were not attended any seminar/workshop during their study period.

2. Structure knowledge questionnaire score
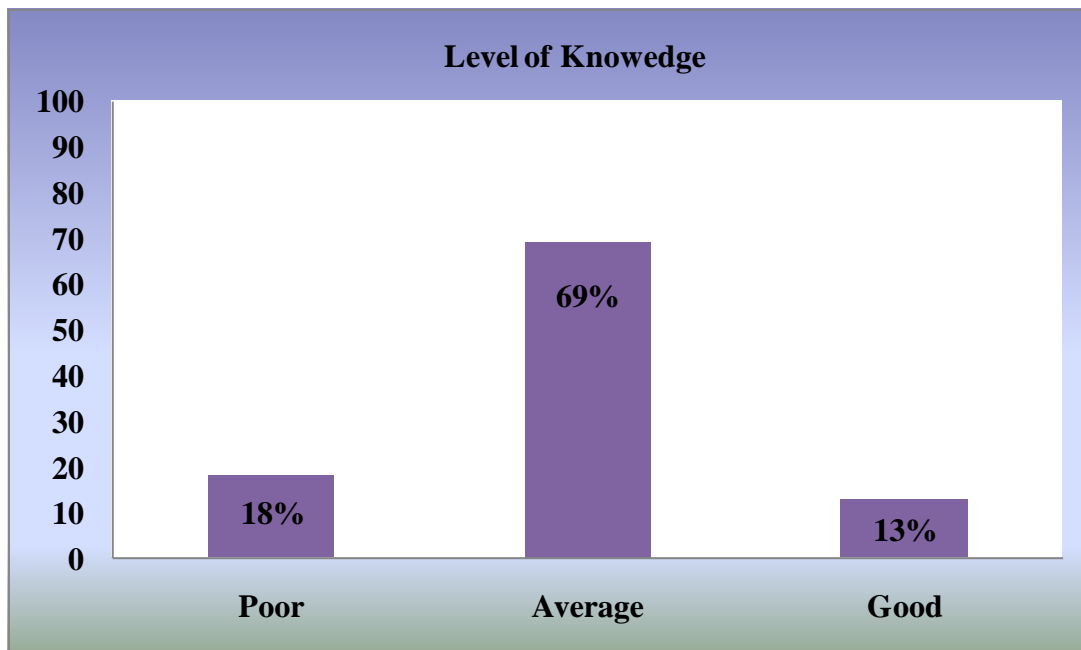
Level of Knowedge

Figure: 1: Distribution of respondents according to the level of knowledge score

Figure: 1: depicts that majority of the samples (69%) were had average knowledge on neonatal resuscitation (18%) were had poor knowledge and (13%) had good knowledge on neonatal resuscitation.

3. Aspect wise assessment of knowledge score on neonatal resuscitation among nursing students

Table 1: Area-wise Mean, Median, SD and Mean percentage of knowledge score of nursing students

N=100

ASPECTS	No. of items	Max possible score	Range	Mean	Median	SD	Mean%
Meaning , Structure and Function	10	10	10-1	6.05	6	2.41	60.50
Initial step of resuscitation	11	11	10-0	5.54	6	2.54	50.36
Bag and Mask ventilation	3	3	3-0	1.29	1	0.94	43.00
Chest compression	4	4	4-0	1.42	1	1.09	35.50
Medication	2	2	2-0	0.86	1	0.72	43.00
Combined	30	30	24-5	15.16	15	4.66	50.53

Table 1 depicts that majority of the samples obtained maximum score in the aspects of meaning, structured and function of neonates (60.50%), and minimum score obtained in the aspects of chest compression is (35.50%).

4. Association between knowledge with demographic variables

Table 2: Association between knowledge score and demographic variables

N = 100

SL. No.	Variables	< Median (<15)	≥ Median (≥15)	χ2 (df)
	Age in years			
	a. 18-20, 20-22	9	23	3.10
	b. 23-25, 26-28	33	36	
	Gender			
	a. Male	6	9	0.028
	b. Female	36	49	
	Religion			
	a. Hindu and Christian	12	24	1.73
	b. Muslim	30	34	
	Course of study			
	a. B. Sc Nursing	37	55	# 0.72
	b. Post basic B. Sc Nursing	5	3	
	Workshop/ seminar attended			
	a. Yes	14	19	0.003
	b. No	28	39	

$\chi2_{(1)}$ = 3.84; p < 0.05; # Yates correction.

Table 2 shows that, there is no association between the selected demographic variables and knowledge scores.

DISCUSSION:

The present study findings are discussed with reference to the findings of similar and contrast studies. Discussion of the findings is based on the sample characteristics, Knowledge scores on neonatal resuscitation and association between the, knowledge score with selected demographic variables among nursing students from selected nursing college at Mangalore. Analysis of the knowledge score on neonatal resuscitation revealed that, majority of the samples (69%) were had average knowledge on neonatal resuscitation (18%) were had poor knowledge and (13%) had good knowledge on neonatal resuscitation. The similar study conducted among health care personnel in Poland results revealed that majority were had average knowledge on neonatal resuscitation.

CONCLUSION:

Nursing students, as the key personnel in acquiring adequate knowledge regarding management of neonatal resuscitation, in this study concluded that Nursing students as average knowledge on neonatal resuscitation. Practical training regarding neonatal resuscitation should consider in the nursing education to ensure acceptable neonatal outcome.

LIMITATION:

Nursing students who are having child health nursing and midwifery subject in a B.sc Nursing and post Basis B.sc Nursing program.

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