

Assessment of Nurses' Knowledge toward Neonatal Resuscitation

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Abstract

Background: Neonatal resuscitation is the set of interventions provided at the time of birth to support the establishment of breathing and circulation. 136 million births annually, (approx. 5-10%) require simple stimulation at birth to help them breath like rubbing and drying. Basic resuscitation with a bag-and-mask is required for an estimated 6 million (approx. 3-6%) of these babies each year, and is sufficient to resuscitate most neonates with secondary apnea.

Methods: A Descriptive cross-sectional design is used through the present study in order to :To assess the nurses knowledge concerning cardiopulmonary resuscitation to neonatal and To find out the relationship between the knowledge scores of the nurses and their selected demographic variables of age, gender, level of education, years of experience, and training session. The period of the study is from The study was carried out from 20th December 2018 up to march 28th, 2019. A Non-probability (purposive) sample of (60) nurses who are working in the delivery rooms in (Al-Zahra Hospital, AL-Forat general Hospital Al-Hakeem general Hospital and Al- Manathera hospital) are included in the study sample. The data are collected through using a well-designed questionnaire that consist of (2) parts: Part I: Demographic data. This part consists of (8) items, including age, gender, Marital Status, years of experience, Level of education, Economic state, Residency, Training course in cardiopulmonary resuscitation ,and number of training courses. And Part 2: Information of the Nurses Knowledge toward Neonatal Resuscitation in the Delivery Rooms: This part of the questionnaire is consisting of (22) questions about Neonatal Resuscitation in the Delivery Rooms . the validity through (12) experts from different specialties (Face Validity) for reviewing the study instrument. The data was analyzed through using of the descriptive and inferential statistical analysis approaches.

Results: The findings of the present study indicate that the Overall assessment for nurses Knowledge about the neonatal cardiopulmonary resuscitation are Fair. Also there is a there is a highly significant association between the nurses Knowledge concerning cardiopulmonary resuscitation to neonatal and their (Years of Experience, Hospital Name, No. of training course), while there is a non-significant relationship with the remaining demographic and clinical data.

Key Words: *Assessment, Nurse, Knowledge, Neonatal , Resuscitation .*

Introduction

Cardiac arrest in the pediatric population is fewer often of cardiac source than a result of long hypoxemia secondary to ventilation, insufficient oxygenation, and circulation (shock). Some causes include suffocation, injuries, smoke inhalation, apparent life-threatening event, and infection. But In small babies the small size of the airway may easily be compromised by improper

positioning with the chin resting on the chest. This is easy to remedy by positioning the infant with the chin elevated (but not hyperextended) so the airway is open. This is common in neonates or infants who are not positioned properly in an infant seat or car restraint seat, Respiratory arrest is associated with a well survival rate than cardiac arrest ^{2,3}. (CPR) is a lifesaving technique which is beneficial in various emergencies.

CPR is essential in cases of asphyxia, near-drowning, electrocution injuries, heart attacks, or any other situation in which a person's heartbeat or breathing has stopped. This includes a combination of rescue breathing and chest compressions, which keep oxygenated blood flowing to the brain and other vital organs until more definitive medical treatment can restore a normal heart rhythm. When the heart stops, the absence of oxygenated blood can cause irreparable brain damage in only a few minutes. Death will occur within 6 minutes¹⁰. During the 1960s, (CPR) was developed as a method of rescuing healthy individuals who suffered a cardiac or respiratory arrest, over approximately short period of about 45 years in the evolution of hospital practice (CPR) has been elevated from its original position as a new experimental technique to its modern status as a clinically universal procedure. As a result of this, all hospital-based health care professionals are expected to be proficient and able to perform this life-saving procedure⁵.

In 2008, the newborn mortality rate in Poland was predictable to be 7.6%. To deliver effective resuscitation, the medical personnel must understand the differences between adult and newborn management. Proper knowledge of newborn resuscitation can prevent the consequences of perinatal asphyxia. An organized knowledge and awareness of the requirement to undertake resuscitative measures in the neonatal play an essential role in proper, early diagnoses, suitable management and reducing the number of complications in newborns with life-threatening conditions. Unfortunately, the literature does not offer any reports on newborn CPR in the practice of emergency medical services (EMS) teams. Therefore, studies that assess the level of knowledge of advanced resuscitative procedures in newborns among the emergency medical personnel are necessary¹⁴.

Neonatal resuscitation is the set of interventions provided at the time of birth to support the establishment of breathing and circulation. Of 136 million births annually, an estimated 10 million (approx. 5-10%) require simple stimulation at birth to help them breathe like rubbing and drying. Basic resuscitation with a bag-and-mask is required for an estimated 6 million (approx. 3-6%) of these babies each year, and is sufficient to resuscitate most neonates with secondary apnea¹¹.

Nurses trained in the basic skills of resuscitation at birth should attend at every delivery. Ideally, at least two nurses should be responsible solely for the care of the neonate at birth. A nurse should be trained in advanced life support techniques for the newly born which should be available for all deliveries considered at high risk for neonatal resuscitation should be a good skill and experienced is best achieved through regular effective training (Khudhair, 2008).⁴

Methods and Materials

Design of the Study:

A descriptive cross-sectional design was adopted in the current study to achieve the early stated objectives.

The period of the study is from 20th December 2018 up to March 28th, 2019.

Setting of the Study:

The study was conducted at Al-Najaf Health Directorate in 4 teaching hospitals (Al-Zahra Hospital, AL-Forat general Hospital Al-Hakeem general Hospital and Al-Manathera hospital).

Sample of the Study:

A Non-probability (purposive) sample of (60) nurses who are working in the delivery rooms in these hospitals are included in the study sample.

Including Criteria:

1. All nurses who deal with neonate in the delivery room.
2. Different ages and level of education.
3. Both gender (male and female).

Exclusion Criteria:

1. Nurses work in the other medical wards e.g. emergency unit, CCU, ICU and respiratory care unit.
2. Nurses who do not voluntarily agree to participate in the study.

Study Instrument:

An assessment tool was adopted and developed by the researcher to assess the Nurses' Knowledge toward

Neonatal Resuscitation in the Delivery Rooms . The complete instrument of the study consists of (2) parts:

Part I: Demographic data and Part 2: Information of the Nurses Knowledge toward Neonatal Resuscitation in the Delivery Rooms

Data Collection:

The data collection is done by applying of the developed questionnaire with the aid of arranged interview. The researcher uses structured self-report technique with nurses as they were individually interviewed in the delivery room by using the English version of the questionnaire by the same questionnaire for all those nurses who were included in the study sample . The data collection process has started from December 2018 to March 2019. The interview technique spends about 20-25 minutes for each subject.

Validity of the Instrument:

The questionnaire validity faces validity for the initial developed instrument which is specified through panel of (12) experts (with experience of > 5 years at their jobs field.

Statistical Analysis

The data were analyze through application of the descriptive and inferential data analysis methods, included:

1. Descriptive Data Analysis: Tables (Frequencies, Percentages) and Statistical figures (Bar Charts).

2-Inferential Data Analysis:

This approach used to test the statistical hypothesis, which includes: two tailed t-test for comparison between means of groups ,and Pearson correlative –factor for measuring the association between the studies variables

Study Results and Findings

Table (1) Statistical distribution of nurses by their Socio-Demographic Data (n 60).

Items	Sub-groups	Study group Total = 60	
		Frequency	Percentage
Age / Years	19-26	41	68.3
	27-34	13	21.7
	35-42	6	10.0
Gender	Female	49	81.7
	Male	11	18.3
Marital Status	Married	39	65.0
	Single	21	35.0
Levels of Education	Secondary nursing school	38	63.3
	Institute	10	16.7
	College	11	18.3
	M.Sc.	1	1.7
Economic Status	Sufficient	24	40.0
	Barely sufficient	27	45.0
	Insufficient	9	15.0
Years of Experience	1-5	48	80.0
	5-10	8	13.3
	11-15	4	6.7
Hospital Name	Al-Zahraa	20	33.3
	Al-Hakeem	10	16.7
	Al-Forat	10	16.7
	Al-Manathera	20	33.3
Residence	Urban	43	71.7
	Rural	17	28.3

Cont... Table (1) Statistical distribution of nurses by their Socio-Demographic Data (n 60).

Training course in neonatal resuscitation Field	Yes	49	71.7
	No	11	18.3
place of training course	No	11	18.3
	In Iraq	47	78.3
	Outside of Iraq	2	3.3
No. of training courses	0	11	18.3
	1	29	48.3
	2	15	25.0
	3	3	5.0
	4	2	3.3

This table shows statistical distribution of nurses by their socio-demographic data, it explains that the majority of the nurse subgroup are nurses with ages between (19-26) years old (68.3%), Regarding gender the study results revealed that the majority (81.7) are female , those who live urban residents (71.7%), Concerning the marital status the highest percentage

(65%) are married, , Regards the nurses education the study show that (63.3%) are Secondary nursing school, those with somewhat adequate economic status (45%) are Barely sufficient ,the place of training course in Iraq (78.3%), the No. of training courses (48.3%) ,and those with (1-5) years of experience (80%), and finally those with one training courses (48.3%

Table (2) Overall mean of scores and assessment for nurses’ knowledge about related to cardiopulmonary resuscitation to neonatal(60n)

Questions No. = 22	MS	RS	Assessment
Overall Knowledge	1.43	47.78	Fail

Table (2) According to the table (3.4), the Overall mean of scores for nurses’ knowledge related to neonatal cardiopulmonary resuscitation was (1.43) which is considered (pass)this mean overall Knowledge of nurses about CPR is Fair .

Table (3) Correlation between nurses’ knowledge and their demographic data

Demographic Data	Correlation Coefficient	Significance P value
Age	0.27	0.1
Gender	0.003	0.98
Residence	0.17	0.18
Marital Status	0.12	0.33
Educational Status	0.25	0.28

Cont... Table (1) Statistical distribution of nurses by their Socio-Demographic Data (n 60).

Economic Status	0.2	0.29
Years of Experience	0.36	0.02
Hospital Name	0.56	0.0002
Training course in neonatal resuscitation field	0.18	0.36
Places of training course	0.17	0.39
No. of training course	0.47	0.009

Table (3) reveals that there is a highly significant association between the nurses Knowledge concerning cardiopulmonary resuscitation to neonatal and their (Years of Experience, Hospital Name, No. of training course), while there is a non-significant relationship with the remaining demographic and clinical data

Discussion

Neonatal resuscitation has the potential of altering the outcome of intra-partum and post-partum events. In order to ensure intact survival of newborns, it is desirable that the labor room should be provided with necessary equipment, staffs and facilities. The health professionals and the staff nurses working in this area should have sufficient knowledge and good practices to save a newborn¹¹. Table (3.1) shows statistical distribution of nurses by their socio-demographic data, it explains that the majority of the nurses subgroup are : nurses with ages between (19-26) years old (68.3%) This result supported by Winkelman et.al, (2009), and their findings indicate that the more of the studied nurses were between (20-30) years old.

Regarding gender, the results reveal, that the Majority are (53%)of subjects are female. There is no doubt that males are the least number, because the objective sample is nurses working in delivery rooms , so the majority of the nurse are female. This result supported by Mahaling,(2015) found the majority of the Staff nurses were female. And those who live urban residents (71.7%) this outcome is agree with study done by Ma`ala and Khudhair (2012)⁶ who concluded in there results that the nurses who live in the center of the city was (77.5%). The nurses who is married (65%) this outcome agree with study done by Ma`ala and Khudhair

(2012)⁶ who concluded in there results that nurses who is married was (65%) , female (81.7%) this outcome agree with study done by Suresh et al., (2017) who concluded in there results that All the 93 participants were female nurses, those with somewhat adequate economic status (45%), Those who have a Secondary nursing school education (63.3%) this outcome agree with study done by Ma`ala and Khudhair., (2012)⁶ who concluded in there results that nurses who is Secondary nursing school graduate was (40%), and those with (1-5) years of experience (80%) This result is agree with (15; 1; 12), their findings indicate that the majority of nurses years of experience were less than 5 years. and finally those with one training courses (48.3%) this outcome is agree with study done by Ma`ala and Khudhair., (2012)⁶ who concluded in there results that (30%) of nurses had training courses in neonatal resuscitation.

Table (3) show that there is a high-significant relationship between the mothers knowledge and their (Years of Experience, No. of training course, Hospital Name), while there is a non-significant relationship with other demographic and clinical data

These study results are supported by sarhan et al.,(2017) who indicated that there is a high significant effect of Years of Experience, No. of training course, and office Name on their nurses' knowledge

The present study is agreement with the previous studies sarhan et al.,(2017) ; Al-Janabi,2014 .founds that there is a non-significant between (gender, age group,) on their nurses knowledge toward CPR procedure.

While for the Educational Status there is non-significant between Educational Status and nurses knowledge toward CPR procedure. This result is

disagree with sarhan et al.,(2017) was found there is highly significant between CPR knowledge and level of education.

The present study show there is no relationship between the nurses' knowledge toward cardiopulmonary resuscitation procedure and their Training course in neonatal resuscitation field, Places of training course and No. of training course. This result supported by Al-Janabi,2014 . found that there is no relationship between the nurses' knowledge toward cardiopulmonary resuscitation procedure and their years of work experience, Area of Assignment, Formal training, and CPR Performance on patient.

Conclusion

Based on the study results, the study concludes the following :

1. Most nurses have insufficient knowledge about cardiopulmonary resuscitation to neonatal
2. There is a great need of introducing periodic and routine Neonatal Resuscitation training programs that may improve the skills of nursing personnel working in delivery room.
3. The researcher can conclude that the majority of the nurses had poor knowledge concerning cardiac arrest and cardiopulmonary resuscitation.
4. The great member of study sample are female.
- 5 .Study sample with age between (19-26) years old
6. There is a strong effect of educational levels of nurses on cardiopulmonary resuscitation.

Recommendations :

Based on the study results and conclusion, the study recommends that:

An educational program should be designed and implemented to increase nurses information about Neonatal CPR in order to reduce or prevent complications.

Increase health education of the nurses working in the operation or delivery room about neonatal resuscitation through regular training

Providing scientific booklet , publication and journal about neonatal cardiopulmonary resuscitation .

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the University of Kerbala and all experiments were carried out in accordance with approved guidelines.

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