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Original Research Article

Nurse's Performance towards Resuscitation for Newborn Baby

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Abstract: ***Objectives***: the study aimed to evaluate Nurse's Performance towards resuscitation for newborn baby. ***Methodology***: The performance of nurses regarding resuscitation received investigation during a description-based research that took place across delivery and operating rooms of al batool teaching hospital. This evaluation spanned from 20 August 2024 till 12 January 2025. Non probability (purposive sample) was used in the current study, Data collection used an observational instrument that included both nurse socio-demographic characteristics and their performance within neonatal resuscitation protocols. ***Results***: Most of the study participants within age group (31-40) years old with percentage (n=32; 49.2%), followed by those with age group (21-30) years old (n=16; 24.6%), majority of them who female with percentage (n=45; 69.2%) concerning with educational qualification there were (diploma degree) in nursing. The majority of responders somewhat practiced newborn resuscitation the total evaluation with poor in the most of the study instrument. ***Conclusions***: The availability of resuscitation tools and guidelines, which impacted newborn resuscitation among responders, are two aspects of the health system that impacted the practice of neonatal resuscitation.

Keywords: Nurses, Performance, Resuscitation, newborn baby.

INTRODUCTION

Newborn resuscitation needs to be provided by skilled nursing staff to lower both infant death numbers and rates of illness [1]. Approximately 3.7 million newborn deaths and 3.3 million stillbirths' worldwide each year. Neonatal fatalities amount to 38% of total deaths occurring below five years old within the first 28 days and 75% of total neonatal deaths occur during the first seven days. Annual mechanical ventilation needs exist for six million newborns. Hospitals in high-income countries have established resuscitation training for breathing support and birth asphyxia management in neonates yet this practice remains nonroutine in low-middle income countries [2]. The main objective of newborn child resuscitation services is to establish immediate breathing functions and blood circulation for the infant after delivery. The annual number of 136 million newborns includes approximately 10 million who need basic stimulation and drying for resuscitation and proper breathing. A total of 6 million babies (approximately 3-6%) require basic resuscitation using a bag-and-mask each year because this method effectively saves most neonates experiencing secondary apnoea. The research indicates that basic stimulation techniques combined with neonatal resuscitation Stage 1 help numerous babies suffering from birth asphyxia recover their breathing normally [3]. Wet and dry supplies along with bag and mask resuscitators need to be readily available to birth attendants for successful newborn resuscitation. Competence and experience of birth personnel drive the resuscitation success rate. Systematic evaluations demonstrate that short, interactive training sessions using didactic and simulation-based teaching effectively increased the knowledge and skills

and teamwork while improving confidence levels of healthcare personnel [4]. Staff nurses need comprehensive training for both standard care and baby emergency intervention to lower the number of deaths from improper resuscitations. Multiple research findings reveal nurses lack the most effective methods for performing CPR. The researcher conducted this study to evaluate Neonatal Resuscitation from the perspective of health care providers [5].

The occurrence of complications during childbirth remains higher among residents in deprived socioeconomic neighborhoods. The two regions of sub-Saharan Africa and south-east Asia together comprise more than one third of birth-related deaths while recording extremely low rates of professional birth attendance. These hospital areas lack medical resources and staff trained in resuscitation practices so they continue operations without essential equipment. Success in newborn resuscitation requires anticipation followed by proper planning along with exact evaluation and immediate support initiation. A person must be assigned to monitor newborns during every childbirth process. The person selected for this position should have expertise along with experience in performing CPR techniques and alternative forms of resuscitation that include positive pressure ventilation (PPV). That individual or another person accessible within short reach must have the training to execute entire resuscitation procedures including medicine administration and endotracheal intubations [6]. Simple resuscitative treatments together reduce infant mortality and improve health outcomes by preventing instances of most postnatal death. Stimulation in combination with suction and bag mask 4 ventilation method shows practical and economical effectiveness in saving most newborns who need medical assistance in areas with limited resources. Medical authorities do not recommend complex intervention methods because such procedures are only rarely required during resuscitation. The annual infant mortality rate can increase only if facilities address missed opportunities by providing complete emergency obstetrical treatment with neonatal resuscitation to all birthing women [4].

Significance of the study:

The World Health Organisation reports that birth asphyxia is a contributing factor in 20% of the five million newborn fatalities that occur annually. Therefore, one million neonates annually may benefit from competent neonatal resuscitation. Resuscitation of asphyxiated newborns is more effective when administered promptly and precisely. It is possible to increase neonatal survival rates and decrease neonatal mortality rates by adequate resuscitation at birth. On rare occasions, neonatal resuscitation is necessary, and its primary focus is on alleviating respiratory issues, not cardiac events [7]. Simple resuscitative techniques can save 90% of infant fatalities, significantly lowering neonatal mortality rates. Most infants can be revived with basic resuscitation stimulation, suction, and bag mask ventilation; neonatal resuscitation is also cost-effective even in low resource situations. When a baby is in trouble, the nurse is the first person the family interacts with in a hospital setting [8]. The purpose of the study is to determine where nurses' expertise is lacking in relation to newborn resuscitation. The Ministry of Health, medical institutions, academics, and individuals will all reap the benefits of this as it enhances actions to decrease neonatal mortalities [4].

Objective of the study:

The purpose of this research is to assess the effectiveness of the nursing staff at Al-Batool Teaching Hospital in the area of newborn resuscitation during childbirth.

METHODOLOGY

Design of the study:

Quantitative study (Descriptive study design) was carried out to evaluate nurse's performance towards neonatal resuscitation at al Batool Teaching Hospital. The present study started from the period of 20 th of August 2024 to 12 th of January 2025, in order to give comprehensive insight about nurses performance towards resuscitation.

Sample of the study:

There were 65 nurses in the sample, and the ones working the morning shift were not eligible for the study. The final count of nurses was 65, and they were chosen using a non-probability sampling method.

Study instrument:

Part one: The age, gender, marital status, monthly income, education level, and number of years of nursing experience are seven factors that make up a socio-demographic characteristics sheet.

Part two: Statements on the checklist were designed to gather data on respondents' monitoring of newborn resuscitation practices. And including the procedure regarding the guideline related to WHO. For newborn r; esuscitation.

Scoring system for practicing about neonatal resuscitation

It was one score for correct answer and in correct answer was give zero score. The scores were classified as the following:

- Poor (Less than 60%)

- Fair (60% - 80%)
- Good (more than 80%)

Data collection

Neonatal resuscitation practices were also assessed using an observation checklist. The opinions of the medical superintendent, hospital administrator, and unit in-charges were gathered using key informant interview guides. The principal researcher moderated the conversations while taking notes on the opinions of the respondents.

Statistical Data Analysis: (SPSS, 21 version)

- Descriptive Data Analysis
- Inferential Data Analysis

Ethical Considerations:

It is necessary to consider moral issues during the evaluation period, among these ethical considerations are the following: -Informed consent. -Do no harm. -Confidentiality. –Anonymity.

RESULTS

Table 1: Distributions of Participants According to Demographic Characteristics (N = 65)

Variables	F	%
Age		
21-30	16	24.6
31-40	32	49.2
41-50	15	23.1
above 50	2	3.1
Total	65	100.0
Gender		
male	20	30.8
Female	45	69.2
Total	65	100.0
Level of Education		
Secondary nursing school	9	13.8
Associate degree (Diploma)	33	50.8
Bachelor's degree	21	32.3
post graduate degree	2	3.1
Total	65	100.0
Marital Status		
Unmarried	16	24.6
Married	25	38.5
Widowed	15	23.1
Divorced	9	13.8
Total	65	100.0
Monthly income		
Sufficient	12	18.5
Somewhat sufficient	40	61.5
Un sufficient	13	20.0
Total	65	100.0
Years of experience in nursing		
≤ 1 year	7	10.8
1-3 years	34	52.3
≥ 3 years	24	36.9
Total	65	100.0
Participation in training courses		
Yes	16	24.6
No	49	75.4
Total	65	100.0

F= frequency, %= percent

Most of the study participants within age group (31-40) years old with percentage (n=32;49.2%), followed by those with age group (21-30) years old (n=16; 24.6%), majority of them who female with percentage (n=45; 69.2%)

concerning with educational qualification there were (diploma degree) with percentage (n= 33; 50.8%) most of them and followed with Bachelor's degree with percent (n=21; 32.3%). Also this table show that most of the study participant were married with percentage (n= 25; 38.5%), majority of the study participant with years of experience in nursing were (1- 3) years with percentage (n=34; 52.3%) The majority of the study participant who did not participant in course training with percentage (n= 49; 75.4%).

Table 2: Nurse's Performance Related to Neonatal Resuscitation

Items	Observation 1		Observation 2		Observation 3		*Mean (SD)	Assess
	PAA. (F%)	FAA. (F%)	PAA. (F%)	FAA. (F%)	PAA. (F%)	FAA. (F%)		
Hands infant a warm towel, dries them off, plays with them, and then covers them with a dry towel.	54 (83.1%)	11 (16.9%)	51 (78.5%)	14 (21.5%)	44 (67.7%)	21 (32.3%)	1.17 ± 0.37	Poor
Notes time of delivery	52 (80%)	13 (20%)	48 (73.8%)	17 (26.2%)	58 (89.2%)	7 (10.8%)	1.20 ± 0.40	Poor
Monitors patient temperature (uses warm resuscitative and warm cloths)	43 (66.2%)	22 (33.8%)	35 (53.8%)	30 (46.2%)	38 (58.5%)	27 (41.5%)	1.34 ± 0.48	Fair
Positions airway in neutral position	43 (66.2%)	22 (33.8%)	38 (58.5%)	27 (41.5%)	35 (53.8%)	30 (46.2%)	1.34 ± 0.47	Fair
If meconium present, identifies indication for endotracheal intubation	25 (38.5%)	40 (61.5%)	21 (32.3%)	44 (67.7%)	25 (38.5%)	40 (61.5%)	1.62 ± 0.49	Fair
If secretions present, lightly suctions the mouth then nose	45 (69.2%)	20 (30.8%)	43 (66.2%)	22 (33.8%)	52 (80%)	13 (20%)	1.31 ± 0.46	Poor
Assesses breathing (looks, listens and feels)	30 (46.2%)	35 (53.8%)	26 (30%)	39 (60%)	20 (30.8%)	45 (69.2%)	1.54 ± 0.50	Fair
Notifies the patient's care provider of the necessity for mechanical ventilation while gradually decreasing their heart rate and respiration rate	48 (73.8%)	17 (26.2%)	41 (63.1%)	24 (36.9%)	45 (69.2%)	20 (30.8%)	1.26 ± 0.44	Poor
Uses appropriate bag and mask size	31 (47.7%)	34 (52.3%)	30 (46.2%)	35 (53.8%)	31 (47.7%)	34 (52.3%)	1.52 ± 0.50	Fair
Provides assisted ventilation correctly (30- 50 bpm)	33 (50.8%)	32 (49.2%)	35 (53.8%)	30 (46.2%)	29 (44.6%)	36 (55.4%)	1.49 ± 0.50	Fair
Checks for chest rise during assisted ventilation	45 (69.2%)	20 (30.8%)	43 (66.2%)	22 (33.8%)	51 (78.5%)	14 (21.5%)	1.31 ± 0.47	Poor

* The mean score is for the three observations, F= frequency, %= percent, (SD) standard deviation,
PAA.: Partially achieved action, FAA.: Full achieved action
Cut-off-point: 1-1.33 = Poor, 1.34-1.66 = Fair, 1.67-2 = Good

DISCUSSION

Part 1: Discussion of the Demographics Characteristics:

Concerning participants' age, Most of the study participants within age group (31-40) years old with percentage (n=32;49.2%), followed by those with age group (21-30) years old (n=16; 24.6%), this findings agree with Mohamed Ali, Amany Elsayed, *et al*., who study that Evaluate Nurse's Practice Regarding Neonatal Resuscitation at Zagazig University Hospitals [9] who show that more than half of studied nurses their age above 30 years and agree with the study for Abd El-Moniem *et al*., [10], who reported in thesis entitled "Performance of Health Care Providers regarding Helping Babies Breathe during Neonatal Resuscitation" in Egypt, that more than half of studied nurses aged above 30 years with Mean ± SD 33.31±1.14 years and more than one third of them were diploma of nursing education.

Regarding gender majority of the study participant who female with percentage (n=45; 69.2%), %) concerning with educational qualification there were (diploma degree) with percentage (n= 33; 50.8%) and most of them and followed with Bachelor's degree with percent (n=21; 32.3%). This results agree with Suresh *et al*., who study of ''Evaluation of Knowledge and Practices on Neonatal Resuscitation among Nurses in Kanyakumari District Hospitals'' and reported that all the studied nurses were female and the majority of them worked at neonatal intensive care unit.

Regarding educational qualification, half of the participants (n=33; 50.8%) have an associate degree "Diploma," with a bachelor's degree holding the second most common (n=21; 32.3%). These results are consistent with those of the study by Abd El-Moniem *et al*., [10] which found that over a third of the participants had a diploma in nursing education.

The majority of the subjects in the study were married, making up 38.5% of the total (n= 25). The majority of the participants in the study were married, which is in line with the findings of the study by abd El Fattah, Neama, A. Negawa, and Z. El Dein [12]. When it came to the number of years of experience in the field, 52.3% of the study's participants (n=34) had between one and three years of experience. The vast majority of the research subjects (n=49, or 75.4% of the total) did not take part in the training sessions. Analysis results support the study findings because half of participants worked within one to five years [12]. Simultaneously this conclusion matches the research results showing 60% of participants worked 0- 0-<1 year and 26% had1-<2 years, 12% had 2-<3 and only 2% worked 3 or more years [13].

Also this findings supported with Ebrahimi *et al*., [14] who mentioned in their study about " Effect of simulation-based CPR education on the knowledge and performance of neonatal intensive care unit nurses" in Iran, that all the studied nurses were female and more two thirds of them had experience more than ten years with mean13.24±4/59 years.in addition These findings corroborated those of a research by Reisman *et al*., [15], who found that one of the biggest obstacles to neonatal resuscitation was a lack of training in the procedure. Most of the neonatal resuscitation-trained nurses were able to perform it when needed, which was also found in a different study conducted in Addis Abeba.

Part 2: discussion of nurse's performance related to neonatal resuscitation

Regarding Table 2 the researcher aimed to ascertain whether the respondents practiced newborn resuscitation. The majority of responders somewhat practiced newborn resuscitation, according to the results. This is because, according to the employed observation checklist, they failed to completely adhere to the WHO's newborn guidelines and procedures. Low rates of ongoing medical education to improve their newborn resuscitation skills could be the cause of this and this and in the total evaluation with poor in the most of the study instrument, this study supported with Hasson *et al*., [7] who found that more than two third of studied nurses had fair practice regarding neonatal resuscitation supplies and equipment and more than half of them had poor practice regarding chest compression. While, half of them had fair practice regarding medication during neonatal resuscitation, Also, Suresh *et al*., [11] was reported the same result regarding chest compression nurses' practice. But this result was disagreed with Kogi *et al*., [16] who found the most of studied nurses had performing chest compressions this difference between the two studies might be related to the small sample size they used. Furthermore, these results are consistent with those of Kamau, Pauline T, *et al*., [17], who examined 46 healthcare workers in six hospitals in Kenya's Uasin Gishu County and found that, out of those evaluated using a combination of written exams and skills tests, 85% were nurses. Although 46% of the candidates passed the written test, no one was able to show mastery of all neonatal resuscitation procedures in the skills evaluation.

CONCLUSIONS

According to the study results, we found that all study skills with poor and fair most of time, and The availability of resuscitation tools and guidelines, which impacted newborn resuscitation among responders, are two aspects of the health system that impacted the practice of neonatal resuscitation. This indicates that elements of the health system ascertain the neonatal resuscitation result.

RECOMMENDATIONS

To make sure that every department is sufficiently equipped for emergencies, the medical superintendent should work with the department heads to assign nurses with expertise in neonatal care. This will make prompt resuscitation easier and newborn resuscitation techniques to enhance the results of deliveries.

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