

Evaluation Nurses' Practices toward Neonatal Resuscitation in the Delivery Room

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الخلاصة:

الهدف: تهدف الدراسة إلى تقييم ممارسات الممرضات تجاه إنعاش الوليد في غرفة الولادة وإيجاد العلاقة بين هذه الممارسات والصفات الديموغرافية للممرضات. **المنهجية:** دراسة وصفية نفذت في المستشفيات التعليمية (مستشفى اليرموك، مستشفى الكرامة، مستشفى الكرخ للولادة، ومستشفى الكاظمية) في مدينة بغداد للفترة من 12 أيلول 2011 لغاية 22 نيسان 2012. تم عينة البحث بالطريقة التصادفية غير الاحتمالية ل (40) ممرضة يعملن في صالة الولادة. جمعت المعلومات من خلال استبانة مصممة ومكونة من 46 فقرة وملئت بطريقة المقابلة، تم تحديد الثبات للاستبانة من خلال الدراسة الاستطلاعية وحددت مصداقيتها من قبل مجموعة من الخبراء. تم تحليل البيانات من خلال استخدام الإحصاء الوصفي الذي يتضمن التكرارات والنسب المئوية واستخدام الإحصاء الاستنبائي الذي شمل معامل ارتباط بيرسون ومربع كاي. **النتائج:** أشارت نتائج الدراسة بأن أغلب الممرضات ممن يعملن في صالة الولادة مستواهن ضعيف عن إنعاش الوليد في صالة الولادة **التوصيات:** أوصت الدراسة بتحسين ممارسات الممرضات حول إنعاش الوليد في صالة الولادة وذلك بإقامة برنامج تثقيفي وتدريب عن إنعاش الوليد في صالة الولادة.

Abstract:

Objective: The study aims to evaluation of nurses' practices toward neonatal resuscitation and find the relationship between the nurses' practices and their demographic characteristics. **Methodology:** A descriptive study was carried out in 4 teaching hospitals (Al-Yarmouk Teaching Hospital, Al-Karama Teaching Hospital, Al-karkh Hospital for Deliver, and Al-Kadhimiya Teaching Hospital) in Baghdad City from the 12th September 2011 to 22th April 2012. A purposive (non probability) sample of (40) nurses who are working in the delivery room in these hospital. The data was collected through using constructed questionnaire, which comprises (46), items add filled by using interview technique. The reliability of the questionnaire was determined through a pilot study and validity through a panel of experts. The data were analyzed through the application of descriptive statistic frequency, percentage, and the application of inferential statistical procedures, which include Pearson correlation coefficient and chi-square. **Results:** the finding of the study was indicated that the nurses have poor practices about neonatal resuscitation in the delivery room. **Recommendation:** the study recommended that nurses 'practices should be improved toward neonatal resuscitation in the delivery room.

Key words: Evaluation, Nurses' Practices, , Neonatal Resuscitation.

Introduction

The neonatal resuscitation program, it means the intervention required to ensure the safe and healthy transition of the newborn from the intrauterine environment to extrauterine life. The scope of interventions is broad and may include drying, stimulation, and providing warmth to the newborn or may extend to full cardiopulmonary support including intubation, ventilation, cardiac compressions, and pharmacologic intervention (Kenner, 2004).

Neonatal resuscitation is a complex procedure that requires the use of specialized knowledge and skills of the nurses. Appropriate assessment and

resuscitation is an important part of neonatal care provided during the first minutes of life. Nurses are often in the frontline of neonatal resuscitation. Appropriate education and training of nurses staff in is essential if the standard of care delivered to babies in the delivery or operation room is to be improved and maintained (Kelley,.2005).

The World Health Organization (WHO) estimates that more of than one – third (16 million) global death each year are from cardiovascular disorder, and more than a third of death each year in newborn (immediately after birth) and (3.3 million) are from acute respiratory failure and shock (Donnell 2004).

More than 100 million babies are born annually world-wide. Resuscitation of the newly born presents a different set of challenges than resuscitation of the adult or even the older infant. The transition from a fluid-filled environment in which the placenta severs as the gas – exchange organ for the fetus (intrauterine environment), to spontaneous breathing of air requires dramatic physiological change to the newly born within the first minutes to hours after birth represent the challenge for the newborn to continue the life (Billing, 2010).

Approximately 5% to 10% of the newly born population require some degree of active resuscitation at birth (e.g., stimulation to breath), and approximately 1% to 10% born are required assisted ventilation (Davis, 2006).

More than 5 million neonatal deaths occur worldwide each year. It has been estimated that birth asphyxia account for 19% of these deaths, suggesting that the outcome might be improved for more than 1 million neonatal per year through implementation of simple resuscitation techniques (Frankel, 2004).

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 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 skills and experienced is best achieved through regular effective training (Polit,2008).

METHODOLOGY:

A Descriptive study was conducted on nurse who works in delivery room from 12th September 2011 to 22th April 2012. The study was conducted at three teaching hospitals (Al-Yarmouk Teaching Hospital, Al-Karama Teaching Hospital, Al-karkh Hospital for Delivery, and Al-Kadhimiyia Teaching Hospital). A purposive (non-probability) sample of (40) nurses who are working in the delivery room. The data will be collect through using specially constructed questionnaire, which comprises two parts:

Part I: Demographic Characteristics:

The demographic Characteristics for the nurses include nurses' age, level of education, marital status, number of years of employment in nursing, years of experience in the delivery room and number of training courses.

Part II: Nurses' Practices

This part is concerned with data related to the nurses' practices and comprised of (46) items, each items consist of 3 items, the items were rated according to a (3) point rating scale as (always, sometimes, never) the level of the scale were scored as (3 for always, 2 for sometimes, 1 for never). The investigator held a direct interview to obtain data from nurses and used constructed questionnaire format that answered by interview. The validity of the questionnaire determine through a panel of (10) experts the reliability of the questionnaire will determine through a pilot study. The data will analyze through the application of descriptive statistic frequency, percentage, and the application of inferential statistical procedures, which include Pearson correlation coefficient and chi-square.

RESULTS

Table (1): Sample distribution, according to their demographic characteristic

<i>demographic characteristics</i>	<i>Nurses' Distribution</i>	
	<i>No</i>	<i>%</i>
1.Age (years): Less than 20	3	7.5
20---29	7	17.5
30---39	12	30.0
40---49	10	25.0
50 and more	8	20.0
Total	40	100
2. Level of education: Midwifery school	9	22.5
Secondary nursing school graduate	16	40.0
Institute of graduate	15	37.5
Total	40	100
3. Marital status: Single	8	20.0
Married	26	65.0

Divorced	3	7.5
Widowed	3	7.5
Total	40	100
4. Residence: Center of Baghdad	31	77.5
Others	9	22.5
Total	40	100
5. Years of practice in maternal operation room: Less than 1 year	3	7.5
1 – 5	15	37.5
6 – 10	10	25.0
11 – 15	6	15.0
16 years and more	6	15.0
Total	40	100
6. Years of employment in nursing: Less than 1 year	0	0
1 – 5	12	30.0
6 – 10	13	32.5
11 – 15	5	12.5
16 years and more	10	25.0
Total	40	100
7. Training of Neonatal Resuscitation Program (NRP): Yes	12	30.0
No	28	70.0
Total	40	100
7.1. Type of NRP training: Theory	26	65.0
Practice	14	35.0
Total	40	100

7.2. Place of NRP training: Inside country	40	100.0
Outside country	0	0
Total	40	100
8. Have information on NRP: Yes	37	92.5
No	3	7.5
Total	40	100
9. Source of information on NRP		
Source of information on NRP: Medical magazines & Books	11	27.5
Workshops	16	40.0
Academy study	5	12.5
Video & Films	5	12.5
Total	40	100

This table shows that most of nurses age group (30%) were of age (30-39 years), (40%) Secondary nursing school graduate, (65%) of nurses are married, (77.5%) were lived in center of Baghdad, (37.5%) years of practice in maternal operation room were (1-5years), and (23.5%) of them had (6-10) years of employment in nursing, (70%) of nurses had no training neonatal resuscitation (NR), (65%) theory training of NR, (100%) inside country training of NR, and (92.5%) have information on NR, (40%) source of information on NR from workshops.

Table 2: level of nurses' practices for each items within 3 scale by total frequencies, percentage.

Items		Nurses' Practices	
		F	%
1.Neonatal care: 5 items	P	24	60.0
	A	14	35.0
	G	2	5.0
Total		40	100
2. Neonatal resuscitation supplies and equipment:9 items	P	12	30.0
	A	28	70.0

	G	0	0
Total		40	100
3.Apgar score: 6 items	P	17	42.5
	A	12	30.0
	G	11	27.5
Total		40	100
4. Steps of neonatal resuscitation 22 items	P	8	20.0
	A	32	80.0
	G	0	0
Total		40	100
5. Endotracheal intubation: 8 items	P	18	45.0
	A	21	52.5
	G	1	2.5
Total		40	100
6. Chest compression: 3 items	P	24	60.0
	A	16	40.0
	G	0	0
Total		40	100
7. Medication administration: 1 items	P	20	50.0
	A	20	50.0
	G	0	0
Total		40	100
Total score: 46 items	P	12	30.0
	A	28	70.0
	G	0	0
Total		40	100
P=0.0001 (Highly significant)			

Level of nurses' practices, P= poor, A= Acceptable. G= Good, F= Frequency, %= Percentages

This table shows that the level of nurses' practices are considered poor.

Table (3): Mean and standard divisions of nurses' practices relation to their demographical data

Demographic characteristics	Nurses' Practices
	Mean \pm SD Range
1. Age	
<20	172.67 \pm 16.20 (154-183)
20---29	178.57 \pm 9.64 (171-198)
30---39	170.92 \pm 9.84 (154-186)
40---49	172.20 \pm 8.55 (159-184)
=>50	170.88 \pm 9.17 (160-188)
P value	0.536
2. Level of education	
Midwifery school	173.00 \pm 7.23 (163-184)
Graduate of intermediate	172.06 \pm 10.77 (154-188)
Graduate of institute	173.20 \pm 10.47 (159-198)
P value	0.506
3. Marital status	
Single	173.63 \pm 5.34 (166-182)
Married	172.38 \pm 10.42 (154-198)
Divorced	167.67 \pm 8.08 (159-175)
Widowed	178.00 \pm 15.62 (160-188)
P value	0.672
4. Residence	
Center of Baghdad	173.58 \pm 10.18 (154-198)
Others	169.67 \pm 7.78 (159-183)
P value	0.295
5. Years of practice in maternal operation room	
<1	
1--5	175.67 \pm 11.02 (163-183)

6--10	172.93±12.12 (154-198)
11—15	171.70±5.98 (157-180)
16 years and more	175.00±8.99 (159-184)
	170.00±10.64 (160-188)
P value	0.892
<i>6. Years of employment in nursing</i>	
<1 year	
1 -- 5	
6 —10	175.17±11.30 (154-198)
11 -- 15	170.54±9.64 (154-186)
16 and more	177.00±5.57 (172-184)
	170.40±9.30 (159-188)
P value	0.414
<i>7. Training of neonatal resuscitation (NR)</i>	
Yes	169.33±8.74 (157-183)
No	174.14±9.94 (154-198)
P value	0.155
<i>7.1. Type of NR training</i>	
Theory	172.63±8.05 (159-183)
Practices	162.75±6.50 (157-172)
P value	0.060
<i>7.2. Place of NR training</i>	
Inside country	169.33±8.74 (157-183)
Outside country	0
P value	
<i>8. Have information on NR</i>	
Yes	172.70±9.74 (154-198)
No	0

P value	
<i>10. Source of information on NR</i>	
Medical magazines & Books	170.45±8.21 (159-183)
Workshops	178.06±9.80 (157-198)
Academy study	163.00±10.27 (154-175)
Video & Films	172.20±4.55 (168-180)
Internet	169.33±5.51 (163-173)
P value	0.021*

This table indicates that there is no significant association between nurse's practices and their age, level of education, marital status, residence area, years of employment in maternal operation room, years of employment in nursing, training in neonatal resuscitation, type of NR training, place of NR training, did have information on NR and source of information on NR.

DISCUSSION

Neonatal mortality rate per 1000 live births varies from less than 5 in developed countries to 48 in the least developed countries. In Iraq, a recent study shows that the neonatal mortality is 23 per 1000 live births (Niermeyer 2010).

Heide (2006) stated that wherever babies are delivered there should be a nurse with adequate skill and experience in resuscitation immediately after birth.

Table1. Indicated that most of nurses age group (30%) were of age (30-39 years), (40%) graduated of intermediate, (65%) of nurses are married, (77.5%) were lived in center of Baghdad, (37.5%) years of practice in maternal operation room were (1-5years). In relation to the nurses' years of employment in nursing, that greater percentage of them had more than (5-10) years experience and accounted (23.5%), (70%) of nurses had no training neonatal resuscitation (NR), (66.7%) theory training of NR. Training session consider an important to improve nurses' practices in operation room it is appositve effect and supportive for nurses' practices for neonatal resuscitation, (100%) inside country training of NR, and (100%) have information on NR, (40%) source of information on NR from workshops.

The result of the study revealed that there is no significant association between nurses' practices and there demographic characteristics table 1.

Forty six items of the questionnaire used to assess nurses' practices for nurses at maternal operation room. The results indicated that the nurses' practices revealed that their practices is poor level toward neonatal resuscitation in table 2.

Table 3. This table shows that there is no significant association between nurse's practices and their age, level of education, marital status, residence area, years of employment in maternal operation room, years of employment in nursing, training in neonatal resuscitation, type of NR training, place of NR training, did have information on NR and source of information on NR.

The results indicated that no statistical significant association between nurses' practices and there number of training session and their session location ($p>0.05$) (Polit, 1999).

The key to successful neonatal resuscitation is establishment of adequate ventilation, reversal of hypoxia, acidosis, and bradycardia depends on adequate inflation of fluid-filled lungs with air, or oxygen, thus the nurse should be good training and management for neonatal resuscitation (Ogunles, 2008).

Quick and effective resuscitation in the first few minutes of life for newborn is long-term benefit and prevent long term handicap, simple measures such as protection from hypothermia, appropriate head position, suction and recognizing those who need respiratory support can make significant changes in neonatal mortality and morbidity rates (Richmond 2010).

RECOMMENDATIONS

The study recommended that:

1. Qualified the nurses who are working on the maternity unit.
2. Increase health education of the nurses working in the operation or delivery room about neonatal resuscitation through regular training.

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