Evaluation Nurses' Practices toward Application of Apgar Scores for Newly Born Baby at Delivery Room in Baghdad City

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Abstract:

The study title evaluate nurses' practices toward application of Apgar scores for newly born baby at delivery room in Baghdad city for the purposes of finding the relationship between the nurses' practices and their demographic characteristics.

A descriptive study was carried out in teaching and non teaching hospitals (Al-Numan General Hospital, Al-aluwa Delivery Hospital in Baghdad City from the 10th September 2012 to 10th January 2013. A purposive (non probability) sample of (20) nurses who are working in the delivery room in these hospital. The data was collected through using constructed questionnaire which comprises (25) 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 that including frequency, percentage, and the application of inferential statistical procedures, which include Pearson correlation coefficient, mean of score, standard deviation and chi-square.

The finding of the study there was no statistical significance differences between the nurses' practices and their demographic characteristics espial educational level, years of experience in the delivery room, years of employment in the nursing, and the finding of the study was indicated that the nurses have poor practices about application of Apgar scores for newly born baby at delivery room. The study recommended that nurses 'practices should be improved toward application of Apgar scores for newly born infant at delivery room throughout establishment of educational program.

Key wards: Evaluation, Nurses' Practices, Apgar scores.

الخلاصة:

تهدف الدراسة إلى تقييم ممارسات الممرضات تجاه تطبيق مقياس أبكار على الوليد في غرفة الولادة وإيجاد العلاقة بين هذه الممارسات والصفات الديموغرافية للممرضات.

دراسة وصفية نفذت في المستشفيات (مستشفى العلوية للولادة ومستشفى النعمان) في مدينة بغداد/ دائرة صحة بغداد الرصافة للفترة من 10 أيلول 2012 لغاية 10 كانون الثاني2013. تم جمع عينة البحث بالطريقة التصادفية غير الاحتمالية لـ (20) ممرضة يعملن في صالة الولادة. جمعت المعلومات من خلال استمارة أستبيانية مكونة من 25 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 ألاستبياني الذي شمل معامل ارتباط بيرسون ومربع كاي.

أشارت نتائج الدراسة بأن اغلب الممرضات ممن يعملن في صالة الولادة أظهرمستوى الممارسات ضعيف حول كيفية تطبيق مقياس أبكار على الوليد في صالة الولادة**.**

أوصت الدراسة بتحسين ممارسات الممرضات حول كيفية تطبيق مقياس أبكار على الوليد في صالة الولادة وذلك من خلال إقامة برنامج تثقيفي وتدريبي عن كيفية تطبيق مقياس أبكار على الوليد في صالة الولادة.

Introduction:

The Apgar score is an objective method of quantifying the newborn's condition and is useful for conveying information about the newborn's overall status and response to resuscitation and should provided training to hospital delivery room nurses to standardize skills to reduce neonatal morbidity and mortality

and increase successful assessment during the first few critical minutes after birth [1].

The score is named for the preeminent American anesthesiologist Dr. Virginia Apgar who invented the scoring method in 1952, and devised a scoring system that was a rapid method of assessing the clinical status of the newborn infant at 1 minute of age and the need for prompt intervention to establish breathing [2].The Apgar score is now used worldwide to quickly assess the health of newborn infant one minute and five minutes after birth. At one minute Apgar score measures how well the newborn tolerated the birthing process. At 5-minute Apgar score assesses how well the newborn is adapting to the environment [3].

The Agar score quantifies and summarizes the response of the newly born infant to the extra uterine environment and if they need resuscitation.

Three elements are include respirations, heart rate, and color will be used to decide how and when to resuscitate, two additional elements, muscle tone and reflex irritability, reflect neurologic status, at one and five minutes after baby is born, the nurse will assess five vital areas of newborn health status. The Agar score uses measures of 0, 1, or 2 for each category, with the best possible total score equaling 10 in table-1[5].

Table-1: Apgar Scores

Sign	Score		
	0	**1**	**2**
Heart rate	Absent	Slow (< 100 beat/min)	>100 beat/min
respirations	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion	Active motion
Reflex irritability	No response	grimace	Cough, sneeze, cry
Color	Blue or pale	Pink body, blue extremities	Completely pink

Haddad, et al (2000) was mentioned that the score of seven to 10 is normal and indicates your newborn in good condition [6].

A score of 10 is very unusual. Almost all newborns lose one point for blue hands and feet and mentioned that any score less than seven indicates the baby needs assistance making the transition to life outside the womb, 5-7 mild asphyxia, 3-5moderate asphyxia and 0-3 sever asphyxia. The nurse should record the scores in the baby's birth record; complete documentation of the events taking place during resuscitation if needed must also include a narrative description of intervene tions performed and their timing. The Apgar score should be assigned every 5 minutes for up to 20 minutes to assess the effectiveness of the intervention or treatment [7].

Methodology:

A descriptive study was conducted on nurse who works in delivery room from the 10th September 2012 to 10th January 2013. The study was conducted at two teaching and non teaching hospitals (Al-Numan General Hospital, Al-aluwa Teaching Hospital for Delivery in Baghdad City).

A purposive (non probability) sample of (20) nurses who are working in the delivery room. The data was collected through using especial constructed questionnaire, which comprises two parts:

Part I: Demographic Characteristics

The demographic characteristics for the nurses include nurses' age, level of education, marital status, numbers of years of employment in nursing, years of experience in the delivery room, and having information about Apgar score and source of information.

Part II: Nurses' Practice:

This part is concerned with data that related to the nurses' practices and comprised of (25) items, these items were rated according to a (3) point rating scale as (always, sometimes, never) and 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 using constructed questionnaire format.

The validity of the questionnaire determine through a panel of (10) experts the reliability of the questionnaire was determine through a pilot study. The data was analyzed through the application of descriptive statistic frequency, percentage, and the application of inferential statistical procedures, which include Pearson correlation coefficient, mean of score, standard deviation and chi-square.

Results and Findings:

Table-2 are showing that (40%) of nurses at age (30-39 years), (40%) of nursing college graduate, (50%o) were married, (80.0%) lived center of Baghdad, (35.0%) have 16 years and more practices in delivery room, and (40%) of them had (11 – 15) years of employment in nursing., 75.0 have information about Apgar score, 40% of them the source of information about Apgar score from academy study.

Table-3 shows the frequencies (F) and percentages (%) of nurses' practices toward application Apgar score.

The result in table- 4 indicates that no statistical significant association between nurse's practices with their demographic characteristics (P value > 0.05).

Table-2: Sample distribution, according to their demographic characteristic

No.	Demographic characteristics	Nurses' Distribution	
		Frequency	Percentage %
1.	Age (years)	Frequency	Percentage %
	Less than 20	2	10.0
	20 - 29	6	30.0
	30 - 39	8	40.0
	40 and more	4	20.0
	Total	20	100
2.	Level of education		
	Midwifery school	6	30.0
	Institute of graduate	6	30.0
	Nursing college graduate	8	40.0
	Total	20	100
3.	Marital status		
	Single	3	15.0
	Married	10	50.0
	divorced	3	15.0
	Widowed	4	20.0
	Total	20	100
4.	Residence		
	Center of Baghdad	16	80.0
	Others	4	20.0
	Total	20	100
5.	Years of practice in delivery room		
	Less than one year	1	5.0
	1 - 5	3	15.0
	6 – 10	5	25.0
	11 – 15	4	20.0
	16 years and more	7	35.0
	Total	20	100

6.	Years of employment in nursing		
	Less than 1 year	1	5.0
	1 - 5	3	15.0
	6 – 10	2	10.0
	11 – 15	8	40.0
	16 and more	6	30.0
	Total	20	100
7.	Have information on Apgar score		
	Yes	15	75.0
	No	5	25.0
	Total	20	100
8.	Source of information on Apgar score		
	Medical magazines & Books	2	10.0
	Workshops	3	15.0
	Academy study	8	40.0
	Video & Films	4	20.0
	Internet	3	15.0
	Total	20	100

Table-3: Distribution nurses' practices toward application Apgar score

Practices Items		F	Percentage %
1. Apgar score is an objective method of quantifying the newborn's condition is use at 1, 5 and 10 minutes after birth	Never	6	30.0
	Sometimes	8	40.0
	Always	6	30.0
Total		20	100
2. Apgar score is useful for conveying information about the newborn's overall status and response to resuscitation	Never	5	25.0
	Sometimes	10	50.0
	Always	5	25.0
Total		20	100
3. Apgar score including five signs must be measurement & evaluate, the score 0, 1, or 2.	Never	7	35.0
	Sometimes	10	50.0
	Always	3	15.0
Total		20	100
3.1.Measure 0 (Very weak)	Never	7	35.0
	Sometimes	9	45.0
	Always	4	20.0
Total		20	100
3.2.Measure 1 (Mild to moderate)	Never	10	50.0
	Sometimes	5	25.0
	Always	5	25.0
Total		20	100
3.3. Measure 2 (Good condition)	Never	9	45.0
	Sometimes	6	30.0
	Always	5	25.0
Total		20	100
4. The five signs or category, must be checked:			
4.1 Respirations			
4.1.1 Not breathing = 0	Never	7	35.0
	Sometimes	8	40.0
	Always	5	25.0
Total		20	100
4.1.2. Weak cry, irregular breathing = 1	Never	6	30.0
	Sometimes	8	40.0
	Always	6	30.0

Total		20	100
4.1.3. Strong cry = 2.	Never	5	25.0
	Sometimes	7	35.0
	Always	8	40.0
Total		20	100
4.2. Heart rate			
4.2.1. Absent heartbeat = 0.	Never	8	40.0
	Sometimes	7	35.0
	Always	5	25.0
Total		20	100
4.2.2. Slow heartbeat (less than 100 beats per minute) = 1.	Never	5	25.0
	Sometimes	8	40.0
	Always	7	35.0
Total		20	100
4.2.3. Adequate heartbeat (more than 100 beats per minute) = 2.	Never	10	50.0
	Sometimes	7	35.0
	Always	3	15.0
Total		20	100
4.3. Muscle tone	Never	5	25.0
	Sometimes	10	50.0
	Always	5	25.0
Total		20	100
4.3.2. Some flexing or bending = 1.	Never	10	50.0
	Sometimes	6	30.0
	Always	4	20.0
Total		20	100
4.3.3. Active motion = 2.	Never	7	35.0
	Sometimes	7	35.0
	Always	6	30.0
Total		20	100
4.4.Reflex response			
4.4.1. No response = 0.	Never	10	50.0
	Sometimes	7	35.0
	Always	3	15.0
Total		20	100
4.4.2. Grimace = 1.	Never	11	55.0
	Sometimes	7	35.0
	Always	2	10.0
Total		20	100
4.4.3. Vigorous cry or withdrawal = 2.	Never	10	50.0
	Sometimes	6	30.0
	Always	4	20.0
Total		20	100
4.5. Color of the skin			
4.5.1. Pale or blue = 0.	Never	5	25.0
	Sometimes	8	40.0
	Always	7	35.0
Total		20	100
4.5.2. Normal color body but blue extremities= 1.	Never	6	30.0
	Sometimes	7	35.0
	Always	7	35.0
Total		20	100
4.5.3. Normal color = 2.	Never	5	25.0
	Sometimes	6	30.0

		Always	9	45.0
Total			20	100
5. The nurse integrates for each category, with the best possible total score equaling 10.	Never		10	50.0
	Sometimes		5	25.0
	Always		5	25.0
Total			20	100
6.1. 0-3 Severe Birth Asphyxia they needed apply resuscitation steps	Never		7	35.0
	Sometimes		7	35.0
	Always		6	30.0
Total			20	100
6.2. 4-6 Mild to Moderate Asphyxia needed simple resuscitation measurement	Never		8	40.0
	Sometimes		6	30.0
	Always		6	30.0
Total			20	100
6.3. 7+ Normal no need for resuscitation	Never		6	30.0
	Sometimes		7	35.0
	Always		7	35.0
Total			20	100

Table-4: Mean of score and standard deviation relation to their demographic characteristics.

Demographic characteristics	Mean ± SD
Age < 20	248.33±5.03 (243-253)
20---29	245.57±8.46 (232-256)
30---39	248.17±5.80 (237-258)
40 and more	251.40±17.24 (225-281)
P value	0.835
Level of education Midwifery school	241.89±8.70 (231-252)
Graduate of institute	247.94±9.75 (224-258)
Nursing college graduate	252.13±11.84 (237-281)
P value	0.556
Marital status Single	246.75±7.69 (232-256)
Married	247.35±12.39(224-281)
Divorced	256.33±5.86 (252-263)
Widowed	250.67±2.31 (248-252)
P value	0.559
Residence -Center of Baghdad	248.68±10.71 (225-281)
-Others	246.33±11.75 (224-263)
P value	0.575
Years of practice in delivery room	248.33±5.03 (243-253)
< 1	246.20±11.61 (225-269)
1--5	248.00±5.87 (238-256)
6--10	254.17±16.62 (234-281)
11—15	
16 years and more	247.17±11.63 (224-256)

P value	0.686
Years of employment in nursing: < 1 year	247.33±6.69 (232-254)
1 -- 5	247.38±12.07 (225-269)
6 —10	245.60±4.77 (241-253)
11 -- 15	251.40±15.28 (224-281)
16 and more	246.00±5.87 (242-257)
P value	0.742

Cont. table (4).

Have information on Apgar score: Yes	52.17±13.00 (224-281)
No	246.43±9.53 (225-269)
P value	0.127
Source of information on Apar score: -Medical magazines & books	252.09±13.63 (224-281)
-Workshops	245.13±9.76 (225-258)
-Academy study	253.00±9.38 (245-269)
-Video & Films	246.20±8.35 (237-256)
-Internet	245.00±9.64 (234-252)
P value	0.405

Discussion:

This study focused on the nurses who often working in delivery room in the hospitals of Al-Rssfa sector.

Throughout the course of the present study (table 2), shows that the age of (40%) of the nurses were (30-39 years), (40%) of nursing college graduate, which how agrees with [8] who mentioned that the educational level of the nurses can affect on the standard care of the neonate, the nurse should learn who to applied the Apgar score, the first test given to newborn in the delivery room after baby birth.

The test was designed to quickly evaluate a newborn's physical condition and to determine any immediate need for extra medical or emergency care. (50%) of nurses are married, (80%) lived in center of Baghdad city which agrees with [4] who mentioned that the hospitals in the center of the city providing qualified nurses on the maternity unit and the number of births in the center of the city is larger than peripheral thus need more practical nurses, and mentioned that hospitals in the center of the city can providing prenatal services and be prepared to provide neonatal care, staffing guidelines, policies, protocols and best practices for standards of care for neonatal.

In relation to nurses' years of experiences in maternal delivery room, that greater percentage of them had more than (35.0%) have 16 years and more practices in delivery room, and (40%) of them had (11–15) years of employment in nursing. This result agrees with [9]. Mentioned that more than one quarter of his sample have 15 years of employment as nurses and more than one third of his sample have 12 years of experience at neonatal unit.

The findings of this study revealed that (75.0%) have information toward application Apgar score, (40%) had their source of information on Apgar score from Academy study [10]. mentioned that the nurses who were trained in the basic skills of assessment the newly born at birth should in attendance every delivery and must have good information about the steps of neonatal care, and training session about Apgar score consider an important to improve nurses' practices at delivery room

to decreased rates of morbidity (disease) and mortality (death).

Table-3 shows that there are differences in their scores in frequencies and percentages of nurses 'practices toward neonate assessment by Apgar score.[11] who stated that the nurse should application the Apgar score to describes the condition of the newborn infant immediately after birth and provides a convenient shorthand for reporting the status of the newborn infant and the response to resuscitation. The Apgar score has been used inappropriately to predict specific neurologic outcome in the term infant.

The Apgar score has limitations, and it is inappropriate to use it alone to establish the diagnosis of asphyxia. An Apgar score assigned during resuscitation is not equivalent to a score assigned to a spontaneously breathing infant.

An expanded Apgar score reporting form will account for concurrent resuscitative interventions and provide information to improve systems of perinatal and neonatal care [12].

Table-4 shows that there is no statistical significant association between nurses' practices toward neonate assessment by Apgar score and their demographic characteristics like age, marital status, residence area and the findings of the study indicated that there was no statistically significant association between nurses' practices and their education level which disagreed with [13] who showed a statistically significant association between nurses' education level and their practices.

The findings that there was no statistically significant association between nurses' practices and their years of employment in the delivery room and years of employment in nursing by [14] was supported their findings show no difference in practice, between staff members with different levels of experience, years of employment in the

nursing felid, qualifications and seniority, and mentioned that the nurses should trained in the basic skills of application of Apgar scores at birth should in attend every delivery. (P value>0.05).

The findings in this study suggested that most of the participating nurses had adequate practices about evaluation, caring of newborn infants, practices of appropriate decisions and actions during application of Apgar scores for newly born at delivery room was low.

Improving the nurses' practices for health education about application of Apgar scores through booklet, video, TV, CDs, and medical magazines.

Conclusion:

The study comes to the following conclusions: There is no statistical significant association between nurses' practice and their demographic characteristics.

The study demonstrated that there was poor nurses' practice at delivery room toward application of Apgar scores for newly born infant at delivery room.

Recommendations:

The study recommended that nurses 'practices should be improved toward application of Apgar scores for neonate inside delivery room throughout establishment of educational program.

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