

## Assessment of Nurse's Practices toward Care of Neonates with Hypoglycemia at Neonatal Intensive Care Unit in Al-Nasiriya City

### الخلاصة:

**خلفية البحث:** تهدف الدراسة الحالية إلى تقييم ممارسات الممرضين تجاه رعاية حديثي الولادة المصابين بنقص السكر في الدم في وحدة العناية المركزة لحديثي الولادة في مدينة الناصرية ومعرفة العلاقة بين ممارسات الممرضين وخصائصهم الاجتماعية والديموغرافية بما في ذلك: (الجنس، العمر، المستوى التعليمي، الحالة الزوجية، وسنوات خدمتهم في التمريض، وسنوات الخدمة في وحدة العناية المركزة، وعدد الدورات التدريبية المتعلقة بالموضوع).

**الهدف:** تقييم ممارسات الممرضة تجاه رعاية حديثي الولادة المصابين بنقص السكر في الدم وتحديد العلاقة بين بعض المتغيرات الديموغرافية مثل ((الجنس، العمر، المستوى التعليمي، الحالة الاجتماعية، سنوات خدمتهم في التمريض، سنوات الخدمة في التمريض)، NICU، وعدد الدورات التدريبية المتعلقة بالموضوع).

**المنهجية:** تم استخدام التصميم الوصفي في الدراسة الحالية في الفترة من 1 / ايلول / 2020 إلى 30 / آذار / 2021. أجريت الدراسة على عينة غير محتملة (عينة هادفة) لـ (40) ممرضاً يعملون في وحدات العناية المركزة لحديثي الولادة في مدينة الناصرية. شكل استبيان لغرض البحث ويتألف من جزأين الجزء الأول بما في ذلك الخصائص الاجتماعية والديموغرافية والجزء الثاني بما في ذلك قائمة التحقق من الممرضات الممارسة حول نقص السكر في الدم حديثي الولادة. تم تحديد مصداقية الاستبيان من خلال دراسة تجريبية وصلاحيّة الاستبيان من خلال لجنة مكونة من (12) خبيراً. تم وصف البيانات إحصائياً وتحليلها من خلال استخدام مناهج التحليل الإحصائي الوصفي والاستنتاجي والتي يتم تطبيقها باستخدام SPSS الإصدار 22.0.

**النتائج:** أظهرت نتائج الدراسة الحالية أن (52.5٪) من الممرضات في سن (26-30) سنة. فيما يتعلق بجنس الممرضات، فجميعهن من الإناث، من حيث المستوى التعليمي (42.5٪) من الممرضات حاصلات على بكالوريوس تمريض. ينتج أيضاً عن سنوات خدمة الممرضات، (77.5٪ و 100٪) من الممرضات لديهم (1-5) سنوات من الخدمة في التمريض ووحدة العناية المركزة لحديثي الولادة على التوالي. فيما يتعلق بالمشاركة في الدورة التدريبية المتعلقة بنقص السكر في الدم عند حديثي الولادة، فقد شارك (17.5٪ و 2.5٪) من الممرضات في جلسة تدريبية (1-2 و 3-4). وفقاً لنتائج الممرضات الممارسة في الاختبار، فإن الممرضات لديهم مستوى منخفض من الممارسة تجاه نقص السكر في الدم عند الأطفال حديثي الولادة. أشارت الممرضات إلى أن متوسط مستوى الدرجة يوجد مستوى تقييم منخفض قدره 40 (100٪) عند مستوى (1-1.66) ومتوسط الدرجة والانحراف المعياري ( $0.087 \pm 1.25$ ).

**الاستنتاجات:** أظهرت الدراسة أن مستوى ممارسة الممرضات المنخفض تجاه نقص السكر في الدم عند الأطفال حديثي الولادة أثناء الدراسة.

**التوصيات:** جلسة تدريبية للممرضات حول كيفية رعاية حديثي الولادة المصابين بنقص السكر في الدم. وتقييم ممارسات رعاية الأطفال حديثي الولادة للممرضات في وحدة العناية المركزة لحديثي الولادة.

**الكلمات المفتاحية:** التقييم، ممارسات التمريض، رعاية حديثي الولادة، نقص السكر في الدم، العناية المركزة لحديثي الولادة.

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## ABSTRACT

**Background:** The present study aims to assess Nurse's practices toward care of neonates with hypoglycemia at neonatal intensive care unit in Al-Nasiriya City and find out the relationship between nurse's practices and their socio-demographic characteristics including: (gender, age, level of education, marital status, their years of service in nursing, years of service in NICU, and number of training session related to the subject).

**Objective:** To assess nurse's practices toward care of neonates with hypoglycemia and to determine the Relationship between Some Demographic Variable Such as ((gender, age, level of education, marital status, their years of service in nursing, years of service in NICU, and number of training session related to the subject).

**Methodology:** A descriptive design used in the present study established was for a period from 1th \ September \ 2020 to 30th \ march \ 2021. The study was conducted on non-probability (purposive sample) of 40 nurses working at neonatal intensive care units in Al-Nasiriya city. A questionnaire format for the research purpose and composed of two part the first part including socio-demographic characteristics the second part including check list of nurses practice toward neonatal hypoglycemia. The reliability of the questionnaire was determined through a pilot study and the validity through a panel of (12) experts. The

data were described statistically and analyzed through the use of descriptive and inferential statistical analysis approaches which are applied by using SPSS version 22.0.

**Results:** The results of the present study showed that (52.5%) of nurses at age (26-30) years. Regarding to nurses gender, all of them are females. Regarding to educational level, (42.5%) of nurses have nursing bachelor graduated. Also result about years of service of nurses, (77.5% & 100%) of nurses has (1-5) years of service in nursing and in NICU respectively. Regarding to participating in training session related to hypoglycemia in neonate, (17.5% & 2.5%) of nurses have participate in (1-2 & 3-4) training session. According to the finding of the nurses' practice at the test the nurses have low level of practice toward neonatal hypoglycemia. Nurses indicated that the level mean of the score, there is low level of assessment of 40 (100%) at level (1-1.66) the mean of score and standard deviation are (1.25±0.087).

**Conclusion:** The study showed that low nurses' level of practice toward neonatal hypoglycemia during study.

**Recommendation:** Nurses' training session on how to care for a neonate with hypoglycemia. Follow-up and evaluation of nurses' neonatal care practices in the NICU.

**Keyword:** Assessment, Nurse's Practices, Care of Neonates, Hypoglycemia, Neonatal Intensive care.

## INTRODUCTION

One of the most common causes for neonatal intensive care unit admission is hypoglycemia. Since different amounts of blood glucose were used to describe hypoglycemia, the true occurrence of neonatal hypoglycemia varies greatly across different studies. When BG levels of (47 mg/dL) and (36) mg/dL were used for hypoglycemia diagnosis, the

incidences of (51%) and (19%) in infants with risk factors for hypoglycemia were used, respectively (1).

Hypoglycemia in newborns is significant because it is a common condition linked to brain injury and poor neuron growth. Despite the fact that the concept of neonatal hypoglycemia is debatable, treatment thresholds have been defined and are used throughout clinical practice. Neonatal hypoglycemia

affects up to 15% of otherwise healthy infants, and it is common in resource-poor countries (2).

Hypoglycemia affects approximately 17% of babies admitted to the neonatal intensive care unit (NICU). Hypoglycemia is estimated to be more common in developing countries due to higher rates of low birth weight and intrauterine growth restriction (IUGR), as well as insufficient nutrition and inadequate treatment (3).

When it comes to neonatal hypoglycemia, nurses are the first line of defense. Careful observation and evaluation, as well as an understanding of which infants are most vulnerable to negative outcomes, are required. As a result, all neonatal nurses are required to follow the algorithm (4).

In the diagnosis of neonatal hypoglycemia, nurses played an important role. It happens as a result of a general examination of the mothers' and newborns' information and medical histories, as well as the identification of the risk factor for neonatal hypoglycemia. To detect early signs and symptoms of neonatal hypoglycemia, a general examination of the newborn's body systems (neurological, respiratory, cardiovascular, and gastrointestinal) is performed. Send a blood sample for glucose testing, and be responsible for maintaining a normal level of glucose and avoiding hypo and hyperglycemia (5).

## AIMS OF THE STUDY

1. To assess nurse's practices toward care of neonates with hypoglycemia.
2. To determine the Relationship between Some Demographic Variable Such as (gender, age, level of education, marital status, their years of service in nursing, years of service in NICU, and number of training session related to the subject).

## METHODOLOGY

- **Study Design:** A descriptive design used in the present study the study was carried out from 1st \ September \ 2020 to \ march \ 2021 on nurses working at neonatal intensive care units in Al-Nasiriya city, to assess the nurses practice toward neonatal hypoglycemia. The study was carried out at NICU in teaching hospitals in Nasiriya city (Bint Al-huda Teaching hospital and Muhammed Al-Musawi Children Hospital).The research sample includes (40) nurses working in NICU. They are selected by using non probability sampling (purposive sample). The study instrument was constructed depending on literature reviews and previous studies related to the neonatal hypoglycemia.
- **Study Setting:** The study was carried out at NICU in teaching hospitals in Nasiriya city (Bint Al-huda Teaching hospital and Muhammed Al-Musawi Children Hospital).

## RESULTS

**Table (1): Distribution of the nurses by their demographic characteristics**

Variables		Frequency	Percent
Age	(20 – 25)	15	37.5
	(26 – 30)	21	52.5
	(31 – 35)	4	10
Gender	Female	40	100
	Total	40	100
Level of education	Nursing High School	16	40.0
	Nursing Institute	7	17.5
	Nursing College	17	42.5

<b>Years of service in nursing</b>	1-5	31	77.5
	6-10	8	20.0
	11-15	1	2.5
<b>Years of service in NICU</b>	1-5	40	100
	6-10	-	-
<b>Marital status</b>	Single	14	35.0
	Married	24	60.0
	Other	2	5.0
<b>Participatin in training session related to NICU</b>	Nor training session	32	80
	(1-2) training session	7	17.5
	(3- 4) training session	1	2.5

Table 2 shows that 21(52.5%) of the sample at age (26-30) years, 40(100%) of them are females, 17(42.5%) of them have nursing college graduated, 31(77.5%) of them have (1-5) years of service in nursing, 40(100%) married, 32(80%) not participate in training session related to NICU.

**Table (2): Distribution the nurses practice toward neonatal hypoglycemia Levels of Assessment Through the "Mean of Score".**

<b>Period</b>	<b>Level of Assessment</b>	<b>Frequency</b>	<b>Percent</b>
<b>Practice Assessment</b>	Low (1-1.66)	40	100
	Moderate (1.67-2.33)	0	0
	High (2.34-3)	0	0
	Total	40	100
	$\bar{x} \pm S. D$	<b>1.25±0.087</b>	

$\bar{X} \pm S.D.$  =Arithmetic Mean ( $\bar{x}$ ) and Std. Dev. (S.D.)

The findings of the study in this table indicate that, according to the mean of the score level of assessment, there is low level of assessment of 40 (100%) at level (1-1.66) the mean of score and standard deviation are (1.25±0.087).

**Table (3): Distribution and difference of nurses practice with demographic characteristics**

<b>Variables</b>	<b>Subgroups</b>	<b>Mean ± S.D.</b>	<b>F</b>	<b>D.F</b>	<b>P.value</b>
<b>Age</b>	(20 – 25)	1.25±.087	8.055	39	0.001
	(26 – 30)				
	(31 – 35)				
<b>Education</b>	<b>Graduate Nursing High School</b>	1.25±.087	7.902	<b>39</b>	0.001
	<b>Graduate Nursing Institute</b>				
	<b>Graduate College Of Nursing</b>				
	<b>Years of service in nursing</b>				
<b>Years of service in nursing</b>	<b>1-5</b>	1.25±.087	1.443	<b>39</b>	0.249
	<b>6-10</b>				
	<b>11-15</b>				
<b>Marital status</b>	<b>Single</b>	1.25±.087	0.041	<b>39</b>	0.96
	<b>Married</b>				
	<b>Other</b>				

S.D. =Standard deviation, ANOVA= Analysis of probability value, NS: Non Significant at  $P > 0.05$ , S: Significant at  $P < 0.05$ , HS: Highly Significant at  $P < 0.01$ .

Table 3 shows that there is significant difference between nurses practice about neonatal hypoglycemia and their age and displays that there is significant difference between nurses practice about neonatal hypoglycemia and their educational level. Also, that there is no significant difference between nurses practice about neonatal hypoglycemia and their years of service in nursing. Finally there is no significant difference between nurses' practice about neonatal hypoglycemia and their marital status.

## DISCUSSION

### - Discussion of the distribution of the nurses by their demographic characteristics table (1).

Regarding to the nurses' demographic characteristic in table (1). The finding indicated that (52.5%) of nurses at age (26-30) years. this results agree with in a descriptive study carried out in Egypt (6, 8). This finding consisted with our finding. Regarding to nurses gender, all of them are females. Study in Iraq found that all of nurses working in NICU were females. This finding consisted with our finding. This finding due to most of nurses working in gynecology and pediatric hospital were female (7).

Regarding to educational level, (42.5%) of nurses have nursing bachelor graduated. In interventional study carried out in Sudan (Effect of the training program on nurses' practice regarding premature nursing care in Pediatric Teaching Hospital Wad Medani, Gezira state, Sudan), they found that most of nurses had bachelor graduated in nursing. This result agrees with our finding (9).

Regarding to the years of service of nurses, (77.5% & 100%) of nurses has (1-5) years of service in nursing and in NICU respectively. Two studies agree with the present study result (12, 10). Regarding to participating in training session related to hypoglycemia in neonate, (17.5% & 2.5%) of nurses have participate in (1-2 & 3-4) training session. Study in Mosul city, Iraq was found that most of nurses had participated in training session related care of neonate in NICU (8).

### - Overall assessment of nurses' practice in present study table (2).

According to the finding of the nurses' practice in table (2), at the pretest the nurses have low level of practice toward neonatal hypoglycemia; study in Iraq was indicated that identification of areas of deficient knowledge among nursing staff represents (13). Also, study in Sudan was found that nurses had poor level of practice toward care of neonate in NICU at the pretest. This finding supported our finding of study (11).

In another descriptive study (Nurse's Knowledge and Practice on the Care of Preterm Infants at Khartoum State Hospitals) in Khartoum state hospital. They found that most nurses had relatively poor knowledge and practices about the aspects of neonate care. These findings supported the present study finding about nurses practice related care of neonatal hypoglycemia in present study (12).

Also, study in Sudan was found that nurses had good level of practice toward care of neonate in NICU in them study. This finding consisted with the present study finding (11).

Study in Baghdad city in the study (impact of training neonatal resuscitation program upon nurses practices in operation room in Baghdad city) found that (75%) of nurses had poor practice about neonatal resuscitation. This finding consisted with the present study finding (13).

Study in Iraq was assessed of nursing staff's knowledge and practice regarding care of premature Babies in Mosul teaching Hospitals found that all of the studied nurses (100%) had satisfactory level of

practice related to weight, and one quarter (25%) of them had satisfactory level of practice related to skin care. This finding supported the present study (8).

#### - Discussion of the difference between nurses practice and demographic characteristics table (3).

According to the difference between nurses' practice and age in table (3), the finding indicates that there is significant difference between nurses' practices toward care neonates with hypoglycemia and their age. Study in Kirkuk City Mustafa was found that there was no significant statistical relationship between nurses' level of practices and their age (10).

According to the difference between nurses' practice and level of education in table (3), the finding indicates that there is significant difference between nurses' practices toward care neonates with hypoglycemia and their educational level. Egyptian study was shown that there was no significant relationship between nurses' practices and level of education (9).

According to the difference between nurses' practice and years of service in nursing in table (3), the finding indicates that there is no significant difference between nurses' practices toward neonates with hypoglycemia and their years of service in nursing. This finding related to most of nurses had few years of experience in nursing field and in NICU and lack of training sessions and workshops about the neonatal hypoglycemia.

According to the difference between nurses' practices and marital status in table (3), the finding

indicates that there is no significant difference between nurses' practices toward neonates with hypoglycemia and their marital status. This result due to the mean score of nurses practice regarding marital status of the single, married and other are in same level, therefore no found any different between them in the mean score at p value (0.05).

#### CONCLUSION

1. All nurses in the study sample working in NICU are females.
2. Most of the study sample is nursing college graduated.
3. Few of the study samples participate in training session related to NICU.
4. Nurses' practices toward neonatal hypoglycemia are low in assessment.

#### RECOMMENDATIONS

1. Nurses' training session on how to care for a neonate with hypoglycemia.
2. Follow-up and evaluation of nurses' neonatal care practices in the NICU.
3. The importance of fully utilizing continuing medical education to provide neonatal hypoglycemia courses for all NICU nurses.

**Ethical Clearance:** All experimental protocol was approved under the College of Nursing, University of Kufa, Iraq and all experiments were carried out in accordance with approved guidelines.

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