

Assessment Quality of Nursing Care Provided to Neonates with Respiratory Distress Syndrome at Intensive Care Unit in AL- Nasiriyah City Hospitals

تقييم جودة الرعاية التمريضية المقدمة لحديثي الولادة الذين يعانون من متلازمة كرب التنفس في وحدة العناية المركزة في مستشفيات مدينة الناصرية

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الخلاصة

الهدف: تهدف الدراسة الحالية إلى تقييم المتغيرات الديموغرافية من (العمر، المستوى التعليمي، وخبرة الممرضات في وحدة العناية المركزة)، تقييم جودة الرعاية التمريضية المقدمة لمرضى كرب التنفس وإيجاد العلاقة بين جودة الرعاية التمريضية مع المتغيرات الديموغرافية من (العمر، المستوى التعليمي، وخبرة الممرضات في وحدة العناية المركزة).

المنهجية: دراسة وصفية أجريت في وحدة العناية المركزة في مستشفيات مركز مدينة الناصرية وشملت (مستشفى بنت الهدى التعليمي، مستشفى محمد الموسوي للأطفال ومستشفى الحويبي التعليمي)، فترة الدراسة من التاسع عشر من شهر كانون الأول عام ٢٠١٦ إلى السادس عشر من شهر شباط عام ٢٠١٧. حيث أختيرت عينة غير احتمالية "غرضية" من (١٠٠) مريض من مرضى كرب التنفس في وحدة العناية المركزة. لتحقيق أهداف الدراسة صمم الباحث أداة الدراسة (الإستبانة) مكونة من جزأين، الجزء الأول شمل الصفات الديموغرافية ويحتوي على (٨) فقرات والجزء الثاني شمل جودة الرعاية التمريضية ويحتوي على (٣) محاور. وتم حساب ثبات الإستبانة من الدراسة الإستطلاعية بإستخدام معامل الثبات كرونباخ ألفا وكان (٠,٨١) وحددت المصادقية بواسطة مجموعة من الخبراء مكونة من (١٨) خبير والمتخصصين في هذا المجال. **النتائج:** أظهرت نتائج دراسة تقييم جودة الرعاية التمريضية للممرضات لمرضى كرب التنفس الوليدية في وحدة العناية المركزة، أن التكافؤ (٧٥%) النسبي كان تحت نقطة القطع (٥.١)، وبعدها بواسطة الإختبار القبلي والبعدي.

الإستنتاج: أوضحت النتائج وجود علاقة إحصائية بين جودة الرعاية التمريضية مع المتغيرات الديموغرافية من (العمر، المستوى التعليمي، وخبرة الممرضات في وحدة العناية المركزة) عند مستوى الدلالة القيمة $P < 0.05$.

التوصيات: توصي الدراسة الحالية بتوفير برامج تثقيفية تقام للممرضات حول جودة العناية التمريضية لكرب التنفس الوليدية وتوفير الكتيبات والكراسات للممرضات لتحسين معرفتهم حول متلازمة كرب التنفس الوليدية.

ABSTRACT

Objectives: The study aims: To assess Demographic Characteristics like (age, level of nursing education and nurse's experience in the intensive care unit), To assess quality of nursing care and to detect the association between the quality of nursing care with Demographic Characteristics like (age, level of nursing education and nurses experience in the intensive care unit).

Methodology: A descriptive quantitative design is carried out at Intensive Care Unit in AL- Nasiriyah City Hospitals include Bent Al-Huda Teaching Hospital, Muhammad AL-Mawsawi pediatric Hospital and Al-Hububi Teaching Hospital, the study period from 19 Dec, 2016 to 16 Feb, 2017. A non-probability (Purposive) of (100) nurses at intensive care unit to provide care for neonate with respiratory distress syndrome.

To achieve the objective of the study the researcher has established the constructed questionnaire, which consists of two part 1: which include sociodemographic data form that consist of 8-items and part 2 include quality of nursing care that consist of three domains. Reliability of this determined by using Cronbach reliability rate (0.81), also through a pilot study and the validity through a panel of (18) experts. The data were described statistically and analyzed through use of the descriptive and inferential statistical analysis procedures.

Results: The findings of the present study indicate that assessment quality of nursing care in neonatal respiratory distress syndrome for nurses at intensive care unit, since their relative sufficiency (75%) were under cutoff point (1.5), There was significant relationship between quality of nursing care and demographic characteristics like (age, level of nursing education and nurses experience in the intensive care unit by P value < 0.05).

Recommendations: The study recommended to providing educational program for nurses for improving quality of nursing care of neonatal respiratory distress syndrome and Providing updating booklets, pamphlets and boosters for nurses to upgrading their knowledge about neonatal respiratory distress syndrome.

Keywords: Neonate, Quality Nursing Care, Respiratory Distress Syndrome.

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Introduction

Newborn is delivered at preterm, term or full term and have no problems but some newborns may have medical problems related to factors that occur before birth such as any health problems or habits of the mother and certain birth defects are likely to lead to early delivery, the earliest premature infants are likely to have problems with transition to newborn life especially breathing problems caused by respiratory distress syndrome⁽¹⁾. Neonatal respiratory distress syndrome or neonatal RDS, also known as Hyaline Membrane Disease (HMD) may occur if the lungs aren't fully developed in the preterm infant that causes a primary deficiency of surfactant and a reduced alveolar surface area available for gas exchange⁽²⁾. Surfactant is a substance produced in the lungs which lines the alveoli and prevents them from collapsing, it is not normally secreted in sufficient quantities until approximately the 29-30th week of gestation and as a result most preterm infants born before this gestation will be surfactant deficient⁽³⁾.

Respiratory distress is one of the most common reasons an infant is admitted to the neonatal intensive care unit, fifteen percent of term infants and 29% of late preterm infants admitted to the neonatal intensive care unit develop significant respiratory morbidity; this is even higher for infants born before 34 weeks' gestation it is seen almost exclusively in preterm infants but may also be associated with multifetal pregnancies, infants of diabetic mothers, cesarean section delivery, cold stress, asphyxia and a family history of respiratory distress syndrome⁽⁴⁾. Quality of care is probably much more complex, therefore as nurses who are involved in quality improvement or implementation of evidence-based practice, must be faced with the question of how to measure quality of care⁽⁵⁾.

Babies with respiratory distress syndrome have the best outcome, it is essential that they have optimal supportive care including maintenance of a normal body temperature, proper fluid management, good nutritional support and support of the circulation to maintain adequate blood pressure and tissue perfusion, temperature, fluid and nutritional management radiant warmers can be used for initial stabilization in the delivery suite and for accessibility in the neonatal intensive care unit optimal management depends on the diagnosis and the degree of prematurity, we would advocate a stepwise approach to respiratory support with frequent reassessment and a low threshold for escalation of treatment⁽⁶⁾.

Objectives:

To assess Demographic Characteristics like (age, level of nursing education and nurse's experience in the intensive care unit)

1. To assess quality of nursing care.
2. To detect the association between the quality of nursing care with (age, level of nursing education and Nurses experience in the intensive care unit).

Methodology

A descriptive quantitative design is carried out at Intensive Care Unit in AL- Nasiriya City Hospitals include Bent Al-Huda Teaching Hospital, Muhammad AL-Mawsawi pediatric Hospital and Al-Habobi Teaching Hospital, from 19 Dec, 2016 to 16 Feb, 2017.

The data were described statistically and analyzed through use of the descriptive and inferential statistical analysis procedures.

Self-administrative questionnaire was constructed by the investigator for the present study through the review of available literature and related previous studies. The constructed questionnaire consisted of two parts: The Part 1 include sociodemographic data which consist of 8-items; the part 2 that include quality of nursing care which consist

of three domains. These items were rated to two levels of Likert scale and scored as follows: I know (2), Don't know (1). Nurses' knowledge toward respiratory distress syndrome was calculated as two levels and scored as follows: Pass = (1.50-2.00) and Fail = (1-1.49) with cutoff point (0.05) with pass score with relative sufficiency R.S (75%).

Relevancy, and adequacy of the questionnaire were done by using (18) of a panel of experts to determine the content validity of the instrument in order to achieve the present study's objectives.

The internal consistency of the instrument was determined through a pilot study and the computation of Alpha Correlation Coefficient (Cronbach's Alpha). The result of the reliability was ($r = 0.810$) and such an estimation was statistically adequate which means that the questionnaire had adequate level of internal consistency and equivalence measurability.

The data were collected through the utilization of the self-administrative questionnaire; the data were collected from (100) nurses at intensive care unit to provide care for neonate with respiratory distress syndrome.

The data is analyzed through the application of descriptive and inferential statistical approaches, which were performed through the computation of the following: frequencies, percentage, and means of scores, standard deviation, relative sufficiency, alpha correlation coefficient and chi-square test.

Results:

Table (1): Distribution of Nurses According to the Demographical Characteristics:

Demographical Characteristics	Groups	Frequency	Percent
Age	≤ 20 years	8	8.0
	21 – 25	61	61.0
	26 – 30	19	19.0
	31 – 35	4	4.0
	36 – 40	5	5.0
	> 40 years	3	3.0
Marital status	Married	57	57.0
	Single	43	43.0
level of education	Secondary nursing school	57	57.0
	Nursing Institute	21	21.0
	College of nursing	21	21.0
	High education in nursing	1	1.0
Residency	Urban	99	99.0
	Rural	1	1.0
Years of experience in the field of pediatric nursing	< 2 years	50	50.0
	2-5 years	40	40.0
	6-9 years	5	5.0
	> 9 years	5	5.0
Years of experience in the neonatal intensive care unit	<2 years	50	50.0
	2-5 years	40	40.0
	6-9 years	5	5.0
	> 9 years	5	5.0
Nurse were able to participate in the training of neonatal intensive care unit	NO	18	18.0
	1-3 training	64	64.0
	4-6 training	10	10.0
	> 6 training	8	8.0
participate to training in the field of neonatal respiratory distress syndrome care	NO	49	49.0
	1-3 training	40	40.0
	4-6 training	8	8.0
	> 6 training	3	3.0

Table (1) indicated that (61%) of the nurses within age group of (21 – 25) years. With respect to the marital status, the majority of the sample (57%) are married of the whole sample.

Regarding to the level of education, the greater number of them secondary nursing school and they are (57.0%) of the sample. Concerning to the residency, about 99% of sample were living in urban. Related to years of experience the results show that half of the sample 50% have less than two years of experience in neonatal care unit and pediatric nursing filed. Concerning training in neonatal intensive care unit, 64% of the sample have participate in (1-3) training courses. 40% of the sample who participate in the training courses have (1-3) training courses related to neonatal respiratory distress syndrome care.

Table (2): Knowledge of the Nurse's Practice to Use Personal Protection Equipment and Tools.

No	Items	Nurses response				M.S	Report
		know	F	Don't know	F		
1.1	You must wash hands with soap and water before and after the completion of the tasks and duties.	90	90. 0	10	10. 0	1.9	P
1.2	Time of hand washing (40–60 second).	33	33. 0	67	67. 0	1.3 3	F
1.3	Unnecessary to wash hands when touching surfaces and solids.	61	61. 0	39	39. 0	1.3 9	F
1.4	You must wash hands when touching blood, body fluids and secretions and contaminated materials.	87	87. 0	13	13. 0	1.8 7	p
1.5	Necessary of wash hands before wearing gloves.	11	11. 0	89	89. 0	1.1 1	F
1.6	A nurse don't need to wash her hands after removing gloves .	60	60. 0	40	40. 0	1.4	F
2.1	Necessity of wear the gloves before touching the patient.	88	88. 0	12	12. 0	1.8 8	P
2.2	You shouldn't wear the gloves for avoid touching contaminated surfaces and materials.	77	77. 0	23	23. 0	1.2 3	F
2.3	Is not advisable to wear gloves when cannula and the suction of fluids procedure.	76	76. 0	24	24. 0	1.2 4	F
2.4	Preferably wearing gloves when touching blood, body fluids and secretions	89	89. 0	11	11. 0	1.8 9	P
2.5	Removal and exchange gloves after the completion of the tasks and duties before leaving nurse the baby bed.	45	45. 0	55	55. 0	1.4 5	F
3.1	Wearing mask when begin to work	90	90. 0	10	10. 0	1.9	P
3.2	Unnecessary to wear the mask when approaching the child.	69	69. 0	31	31. 0	1.3 1	F
4.1	It shouldn't be safe waste disposal.	60	60. 0	40	40. 0	1.4	F
4.2	You must get rid of waste contaminated with blood and body fluids and secretions in designated places.	76	76. 0	24	24. 0	1.7 6	P
4.3	Unnecessary to sort the waste into general, medical, sharp and chemical waste.	84	84. 0	16	16. 0	1.1 6	F

f =frequency, M. S= mean of score, R. S= relative sufficiency, P=pass, F=fail

Table(2) shows that knowledge of the nurse's practice to use personal protection equipment and tools is (pass) in items (1.1, 1.4, 2.1, 2.4, 3.1 and 4.2), while (fail) in all other items.

Table (3): Knowledge Related to the Nurse's toward Child Management and Nursing Care (cut off point = 1.5, R. S= 75%).

No	Items	Nurses response				M.S	Report
		kno w	F	Don' t kno w	F		
1	Must be taken patients history form relative.	68	68. 0	32	32. 0	1.6 8	P
2	The child must be placed in the incubator for the purpose of maintaining the temperature.	85	85. 0	15	15. 0	1.8 5	P
3	Reduce the number of times to open the incubator.	45	45. 0	55	55. 0	1.4 5	F
4	Sterilizing the incubator after child discharge and input another child.	30	30. 0	70	70. 0	1.3	F
5	Necessary to input a cannula in the vein if possible, or in the umbilical cord.	90	90. 0	10	10. 0	1.9	P
6	Give oxygen to the child and as needed.	87	87. 0	13	13. 0	1.8 7	P
6-1	Oxygen ratio is determined by pulse oximetry.	29	29. 0	71	71. 0	1.2 9	F
6-2	It is not possible to give oxygen by nasal cannula.	75	75. 0	25	25. 0	1.2 5	F
6-3	Oxygen can be given to the child by mask.	83	83. 0	17	17. 0	1.8 3	P
6-4	It is not possible to give oxygen by incubator.	90	90. 0	10	10. 0	1.1	F
6-5	Mask must be changed for each child before giving oxygen.	19	19. 0	81	81. 0	1.1 9	F
6-6	Unnecessary to be the size of mask appropriate to child age .	83	83. 0	17	17. 0	1.1 7	F
6-7	Necessary to check fill level of cylinder by oxygen.	34	34. 0	66	66. 0	1.3 4	F
6-8	Give oxygen by mask does not scratch the child's nose.	94	94. 0	6	6.0 6	1.0	F
6-9	For the purpose of humidified oxygen must humidifier chamber filled with water.	75	75. 0	25	25. 0	1.7 5	p
7-1	For the purpose of operating (CPAP) it must be connected to electricity.	87	87. 0	13	13. 0	1.8 7	p
7-2	Preferably change nasal cannula with its contents in (CPAP) which are single use.	23	23. 0	77	77. 0	1.2 3	F
7-3	must be fill humidifier chamber of (CPAP) with water.	70	70. 0	30	30. 0	1.7	p
7-4	Unnecessary to run the heater at (CPAP) for heating the water.	65	65. 0	35	35. 0	1.3 5	F
7-5	Must not be reach the water heated to a temperature of 36 C ⁰ .	57	57. 0	43	43. 0	1.4 3	F
7-6	To remove mucous secretions from the nose does not favor that the water contains salts.	60	60. 0	40	40. 0	1.4	F
7-7	Keep nasal cannula into nose and according to the size of	48	48.	52	52.	1.4	F

	the child.		0		0	8	
7-8	Clean nasal cannula when needed.	66	66.	34	44.	1.6	P
			0		0	6	
7-9	Mask preferably covers the child's mouth and eyes.	72	72.	28	28.	1.2	F
			0		0	8	
7-10	Provide the child of oxygen through (CPAP) and as needed.	71	71.	29	29.	1.7	P
			0		0	1	
7-11	Should not be breathing tube monitor as well is installed and is puncture.	67	67.	33	33.	1.3	F
			0		0	3	
7-12	Materials become contaminated after it finishes procedure.	37	37.	63	63.	1.3	F
			0		0	7	
8	Assist the doctor in give surfactant substance.	20	20.	80	80.	1.2	F
			0		0		
9	Should be withdrawn fluids and secretions from the mouth of the child by suction	72	72.	28	28.	1.7	P
			0		0	2	
10	Provide mouth care and around .	45	45.	55	55.	1.4	F
			0		0	5	
11	Provide a child with i.v fluids to avoid dehydration and as needed.	69	69.	31	31.	1.6	P
			0		0	9	
12	Administer of medication as prescribe.	86	86.	14	14.	1.8	P
			0		0	6	
13	Maintain calm in the child's ward.	74	74.	26	26.	1.7	P
			0		0	4	

f=frequency, M. S= mean of score, R. S= relative sufficiency, P=pass, F=fail

Table (3) shows that knowledge related to the nurse's toward child management and care is (pass) in items (1, 2, 5, 6.3, 6.9, 7.1, 7.3, 7.8, 7.10, 9, 11, 12 and 13), while (fail) in all other items

Table (4): Knowledge Relating to Observation and Monitoring of Child Care (cut off point = 1.5, R. S=75%).

No	Items	Nurses response				M.S	Repo
		know	F	Don't know	F		
1	Necessary monitor blood glucose.	33	33.0	67	67.0	1.33	F
2	Necessary monitor respiratory rate.	86	86.0	14	14.0	1.86	P
3	Unnecessary monitor pulse rate.	18	18.0	82	82.0	1.18	F
4	Does not favor measure the child temperature.	84	84.0	16	16.0	1.16	F
5	Must be measure the oxygen ratio in the blood continuously.	37	37.0	63	63.0	1.37	F
6	Observe cyanosis and monitor of the child.	77	77.0	23	23.0	1.77	P
7	Observe and monitor tube of (CPAP)from the puncture or warp.	12	12.0	88	88.0	1.12	F
8	Unnecessary to observe the color of the skin.	54	54.0	46	46.0	1.46	F
9	It does not require observe and monitor the child consciousness.	95	95.0	5	5.0	1.05	F
10	A nurse monitoring the water level in the humidifier chamber of oxygen cylinder.	35	35.0	65	65.0	1.35	F
11	Check the water level in heat chamber of (CPAP).	19	19.0	81	81.0	1.19	F
12	Change the baby's position continuously to prevent the bed sore.	43	43.0	57	57.0	1.43	F
13	Do not we should observe and monitor signs of dehydration.	74	74.0	26	26.0	1.26	F
14	Do not we should observe and monitor chest movement.	72	72.0	28	28.0	1.28	F
15	Monitor signs of hypothermia such as (Decrease activity – cool extremity).	32	32.0	68	68.0	1.32	F
16	Maintaining umbilical cord clean.	79	79.0	21	21.0	1.79	P
17	Monitor the temperature of the water in a humidifier chamber (CPAP).	41	41.0	59	59.0	1.41	F
18	Incubator temperature monitoring.	38	38.0	62	62.0	1.38	F
19	Should be encourage the mother to breastfeed, even though the child was dyspnea.	65	65.0	35	35.0	1.35	F
20	Should not be observe and assess the newborn response to therapy.	82	82.0	18	18.0	1.18	F
21	Maintaining the confidentiality of the child information.	89	89.0	11	11.0	1.89	P
22	Encourage mother's skin-to-skin contact by kangaroo position	34	34.0	66	66.0	1.34	F
23	Documentation of all procedures and duties carried out by the nurse in the child chart.	99	99.0	1	1.0	1.99	P

f=frequency, M. S= mean of score, R. S= relative sufficiency, P=pass, F=fail

Table (4) shows that knowledge relating to observation and monitoring of child care is (pass) in items (2, 6, 16, 21 and 23), while (fail) in all other items

Table (5): The association Between Demographic Characteristic with Nurses' Knowledge Toward Quality of Nursing Care in Neonatal Respiratory Distress Syndrome.

Demographic data of nurses	variables	Nurses response		Mean \pm S.D.	χ^2	d.f	P. value	Sig
		Don't know	know					
Age	≤ 20 years	2	6					
	21 – 25	40	21					
	26 – 30	10	9	24.6				
	31 – 35	2	2	\pm 1.077	145.4	5	.013	Yes
	36 – 40	2	3					
	> 40 years	1	2					
Marital status	Married	30	27	14.3				
	Single	27	16	\pm .498	28.01	1	.175	No
level of education	Secondary nursing school	39	18					
	Nursing Institute	13	8	16.6				
	College of nursing	5	16	\pm .844	90.75	3	.023	Yes
	High education in nursing	0	1					
Residency	Urban	56	43	19.9				
	Rural	1	0	\pm .100	19.19	1	.633	No
Years of experience in the field of pediatric nursing	< 2 years	31	19					
	2-5 years	23	17	16.5				
	6-9 years	2	3	\pm .796	88.04	3	.036	Yes
	> 9 years	1	4					
Years of experience in the neonatal intensive care unit	< 2 years	35	15					
	2-5 years	20	20	13.6				
	6-9 years	1	4	\pm .542	65.33	3	.020	Yes
	> 9 years	1	4					
the nurse was participating in the training of neonatal intensive care unit	NO	15	3					
	1-3 training	30	34	21.1				
	4-6 training	6	4	\pm .874	80.55	3	.107	No
	> 6 training	6	2					
nurses have participated training in the field of neonatal respiratory distress syndrome care	NO	32	17					
	1-3 training	23	17	17.2				
	4-6 training	2	6	\pm .829	85.68	3	.052	No
	> 6 training	0	3					

SD = Standard Deviation, χ^2 = Chi-square, d.f. = degree of freedom, P-value= Probability value, Sig=significance.

Table(5) reveals that there is a (significant) association between (age factor, level of education and years of experience in the field of pediatric nursing and in the neonatal intensive care unit)and nurses' knowledge toward quality of nursing care in neonatal respiratory distress syndrome by p-value ≤ 0.05 .

It reveals that there is a (no significant) association between (marital status, residency factor and the nurse was participating in the training of neonatal intensive care unit and neonatal respiratory distress syndrome care) and nurses' knowledge toward quality of nursing care in neonatal respiratory distress syndrome by $p\text{-value} \leq 0.05$.

Discussion

Part-I: Discussion of the Demographic Characteristics Related to Nurses.

The results of the study had shown in the table (1) the majority of the study sample at age (21- 25) years. And they are accounted for (61) nurses with percent (61%). This result agrees with Loutfy et al., (2014), Who find that the majority of study sample with age (20-30)⁽⁷⁾.

Concerning to the educational levels, the greater number in the secondary nursing school. the majority of the sample (57) nurses and they accounted for (57%) of the total sample. This result disagrees with Loutfy et al., (2014), that reveals the majority of study sample with bachelor's degree in nursing ⁽⁷⁾. According to the subject's marital status, the majority of the sample are married for (57%) of the total sample. This result agrees with Elsayed et al., (2013), that show the majority of study sample with married nurses ⁽⁸⁾.

Regarding to residency, results greater number of study sample were living in urban (99.0 %)nurses.

Related to years of experience in the neonatal intensive care unit, the results indicated that a highest percentage of the study sample are under 2 years and they are (50.0%) nurses. This result agrees with study done by Ahmed &Abosamra, (2015).This study shows the majority of study sample (68%)have less five years of experience ⁽⁹⁾.

Related to years of experience in the field of pediatric nursing, the results indicated that a highest percentage of the study sample are under 2 years and they are (50.0%)nurses. This result agrees with Elsayed et al., (2013), that show highest percentage of the study sample are under 5 years for nurses⁽⁸⁾.

Concerning to the nurseparticipation in the training courses about of neonatal intensive care unit, around 82% of the sample have been participated in these courses. The majority of sample 51% participate in the training courses that focused on neonatal respiratory distress syndrome care. This result was in disagrees with Elsayed et al., (2013), that show participate in the training program with sample group (No) and they are (41%) nurses⁽⁸⁾.

Part-II: Discussion of Quality Nursing Care Related to Respiratory Distress Syndrome:

In regarding to the table (2) knowledge of the nurse's practice about use personal protection equipment and tools domain, the sub domains (hand washing) in the light of item (wash hands with soap and water before and after the completion of the tasks and duties) they had pass assessment, this result agrees with study done by Ekwere&Okafor, (2013)⁽¹⁰⁾. While the item (time of hand washing (40–60) second) they had fail assessment, this result agrees with study done by Ekwere&Okafor, (2013)⁽¹⁰⁾. Regarding to hand washing we can see that item responses (unnecessary to wash hands when touching surfaces and solids, necessary of wash hands before wearing gloves & does not need nurse to wash hands after removing gloves) had fail assessment. This result agrees with study done by Mahmood et al., (2015) ⁽¹¹⁾. While the subject (wash hands when touching blood, body fluids and secretions and contaminated materials). They had pass assessment, this result disagrees with study done by Mahmood et al., (2015) ⁽¹¹⁾.

In regarding to the table (2) knowledge of the nurse's practice to use personal protection equipment and tools domain, the sub domains (wear the gloves) in the light of item (necessity

of wear the gloves before touching the patient) they had pass assessment, this result agrees with study done by Iliyasu et al., (2016)⁽¹²⁾. While the subject (we should not wear the gloves for the purpose of avoiding touching contaminated surfaces and materials & Is not advisable to wear gloves when cannula and the suction of fluids procedure) they had fail assessment, this result agrees with study done by Kołpa et al., (2015)⁽¹³⁾. Regarding to wear the gloves we can see that item responses (preferably wearing gloves when touching blood, body fluids and secretions) they had pass assessment, this result agrees with study done by Iliyasu et al., (2016)⁽¹²⁾. While the item (removal and exchange gloves after the completion of the tasks and duties before leaving nurse the baby bed) they had fail assessment, this result agrees with study done by Kołpa et al., (2015)⁽¹³⁾.

Also the table (2) Indicated that knowledge of the nurse's practice to use personal protection equipment and tools domain, the sub domains (Mask) in the light of item (wearing mask when begin to work) they had pass assessment, this result agrees with study done by Iliyasu et al., (2016)⁽¹²⁾. While the item (Unnecessary to wear the mask when approaching the child) they had fail assessment, this result agrees with study done by Egwuenu&Okanlawon, (2014)⁽¹⁴⁾.

In regarding to the table (2) knowledge of the nurse's practice to use personal protection equipment and tools domain, the sub domains (waste management) in the light of items (It should not be disposed of waste safely & Unnecessary to sort the waste into general, medical, sharp and chemical) they had fail assessment, this result agrees with study done by Enwere&Diwe (2013)⁽¹⁵⁾. While the item (Dispose of waste contaminated with blood and body fluids and secretions in their allocated places) they had pass assessment, this result agrees with study done by Mathur et al., (2011)⁽¹⁶⁾. Often patients need to quick procedures and because of the large numbers that are treated by one nurse, leading to the nurse's neglect of personal protective equipment (Researchers).

The table (3) show that knowledge related to the nurse's practice toward child management and nursing care domain, this table show nurse have poor knowledge about nursing care of respiratory distress syndrome, this result agrees with study done by Loutfy et al., (2014)⁽⁷⁾, this result also agrees with study done by Mohammed, (2010), that show poor nurse knowledge about care of respiratory distress syndrome⁽¹⁷⁾. In this table the sub domains (Oxygen therapy) show poor nursing care and nurse knowledge, this result agrees with study done by Mahmood et al., (2015)⁽¹¹⁾.

In this table the sub domains (CPAP therapy) show that the poor nursing care and nurse knowledge. The fact that the work on the new machine, in addition to the failure of the company equipped to train a sufficient number of nurses, as well as did not lack the Continuing Education Unit training courses or nurses (Researcher). this result agrees with study Chen et al., (2016), that show NCPAP education was only (69.2) points⁽¹⁸⁾. In this table the sub domains (Assist the doctor in give surfactant substance) show (60%) that lead to fail assessment, this result agrees with study Mikšová et al., (2014)⁽¹⁹⁾. In regarding to this table the sub domains (provide mouth care and around) show (72.5) that lead to fail assessment, this result agrees with study Afera, (2015)⁽²⁰⁾. In regarding to this table the sub domains (Provide a child with i.v fluids to avoid dehydration and as needed) show (84.5%) that lead to pass assessment, this result agrees with study Ahmed et al., (2014), that show good nursing knowledge about intravenous therapy⁽²¹⁾. In regarding to this table the sub domains (Administer of medication as prescribe) show (93%) that lead to pass assessment, this result agrees with study Tembo, (2016), that show good nursing knowledge about Administer of medication⁽²²⁾. In regarding to this table the sub domains (Preferably the child in supine position) show (55.5%) that lead to fail assessment, this result agrees with study Tembo, (2016)⁽²²⁾.

Related to table (4) nurse knowledge relating to observation and monitoring of child care domain, this table show nurse have poor knowledge about nursing monitor of respiratory distress syndrome. This may be due to large numbers of patients and a shortage of nursing, resulting in an inability to follow patients (Researcher). This result agrees with study done by Elsayed et al., (2013)⁽⁸⁾. This result also agrees with study done by Mikšová et al., (2014) ⁽¹⁹⁾.

Part III: Association Between Demographic Characteristic with Nurses' Knowledge toward Quality of Nursing Care Domains.:

Related to the table (5), age groups, the results show a significant relationship between the age and nurses' knowledge toward quality of nursing care in neonatal respiratory distress syndrome domains. These results agree with Ahmed, (2013), who found significant relation between age and nurses' knowledge ⁽²³⁾. These results also agree with Ahmed et al., (2014), who found significant relation between age and nurses' knowledge ⁽²¹⁾. These results also agree with Ahmed &Abosamra, (2015), who found highly significant relation between age and nurses' knowledge⁽⁹⁾. These results also agree with Aferu, (2015), who found significant relation between age and nurses' knowledge ⁽²⁰⁾. While this result disagreement with Elsayed et al., (2013), who reported that there is a non-significant relation between age and nurses' knowledge⁽⁸⁾. Regarding level of education, the results show that there is a significant relationship between the level of education and nurses' knowledge toward quality of nursing care in neonatal respiratory distress syndrome domains. These results agree with study done by Loutfy et al., (2014), who found highly significant relation between level of education and nurses' knowledge⁽⁷⁾. These results also agree with Ahmed, et al, (2014), who found significant relation between level of education and nurses' knowledge ⁽²¹⁾. These results also agree with Aferu, (2015), who found significant relation between level of education and nurses' knowledge⁽²⁰⁾. While this result disagreement with Elsayed et al., (2013), who reported that there is a non-significant relation between the level of education and nurses' knowledge⁽⁸⁾.

Concerning years of experience in the field of pediatric nursing, the results show that there is a significant relationship between years of experience in the field of pediatric nursing and nurses' knowledge toward quality of nursing care in neonatal respiratory distress syndrome domains. These results agree with Ahmed et al., (2014), who found significant relation between years of experience and nurses' knowledge⁽²¹⁾. These results also agree with Aferu, (2015), who found highly significant relation between years of experience and nurses' knowledge (p.value = 0.000) ⁽²⁰⁾. While these results disagreement with study done by Loutfy et al., (2014), who found a non-significant relation between years of experience and nurses' knowledge⁽⁷⁾.

Related to years of experience in the neonatal intensive care unit, the results show that there is a significant relationship between years of experience in the neonatal intensive care unit and nurses' knowledge toward quality of nursing care in neonatal respiratory distress syndrome domains. These results agree with study done by Ahmed &Abosamra, (2015), who found a highly significant relation between years of experience and nurses' knowledge (p.value = 0.000) ⁽⁹⁾. While these results disagreement with study done by Hammod& Mohammed, (2016), who found a no significant relation between years of experience and nurses' knowledge⁽²⁴⁾.

Recommendation:

1. Educational program for nurses toward quality of nursing care of neonatal respiratory distress syndrome.
2. Providing updating booklets, pamphlets and boosters for nurses to upgrading their knowledge about neonatal respiratory distress syndrome.

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