

(Assessment of nurses' knowledge toward The Continuous Positive Airway Pressure (CPAP) Machine in Neonatal Intensive Care Unit at Al-Diwanyia City Hospitals)

(تقييم معارف الممرضين تجاه جهاز ضغط المجربالهوائي الايجابي المستمر في وحدة العناية المركز ةلحديثي الولادة فيمستشفيات مدينةالديوانية)

Dr. Afifa Radha Aziz *, Murtadha Abbas Abdul-Hamza **

* Assist Prof, Pediatric Nursing Department, College of Nursing/ University of Baghdad, E: mail afifa Redha

** MSc Student, Pediatric Nursing, Ministry of health, Al-Diwanyia Health Directorate/AL-Hamza General Hospital

الخلاصة:

الهدف: تقييم معارف الممرضين المتعلقة بجهاز ضغط المجربالهوائي الايجابي المستمر في وحدة العناية المركز ةلحديثي الولادة فيمستشفيات مدينةالديوانية، ولايجاد العلاقة بين معارف الممرضين المتعلقة بجهاز ضغط المجربالهوائي الايجابي المستمر في وحدة العناية المركز ة والمعلومات الديموغرافية الاجتماعية.

المنهجية: دراسة وصفية أجريت في وحدة العناية المركز ة في مستشفيات مركز مدينة ال ديوانية وشملت (مستشفى النسائية والأطفال التعليمي ومستشفى الحسين للأطفال)، فترة الدراسة السادس والعشرون من كانون الأول من العام 2016 ولغاية الخامس عشر من أيار من العام 2017. عينة غير احتمالية (غرضية) هادفة من (24) ممرض، ممن يعمل في وحدة العناية المركز ةلحديثي الولادة فيمستشفيات مدينةالديوانية. أداة الدراسة اشتملت على الاستبيان الذي يحوي خمسة أجزاء رئيسية. دقة الاستبيان حددت من خلال الاتساق الداخلي من خلال دراسة تجريبية. صدق محتوى استبيان حدد من خلال مجموعه من الخبراء. وقد تم تحليل البيانات من خلال تطبيق التكرارات الوصفية والنسب المئوية والمتوسط من النتيجة والتحليل الاحصائي الاستنتاجي.

النتائج: أظهرت الدراسة عدم وجود علاقة ذات دلالة إحصائية بين عمر الممرضين ، جنس الممرضين ، سنوات الخدمة في مجال التمريض ، المستوى التعليمي للممرضين، عدد سنوات الخبرة في وحدة العناية المركز ةلحديثي الولادة ، الدورات التدريبية حول جهاز ضغط المجربالهوائي الايجابي المستمر ومعارفهم المتعلقة بجهاز ضغط المجربالهوائي الايجابي المستمر عند مستوى الدلالة القيمة $P < 0.05$. وخلصت

الدراسة الى ان نسبة عالية من الكادر التمريضي هم من خريجي اعدادية التمريض ومعظمهم قد شاركوا في دورات تدريبية متعلقة بجهاز ضغط المجربالهوائي الايجابي المستمر.

الاستنتاج: (1) اغلب عينة الدراسة كانوا من الاناث (2) اغلب اعمار عينة الدراسة كانت بين (25-29) سنة. (3) نسبة عالية من عينة الدراسة شاركت في الدورات التدريبية المتعلقة بجهاز ضغط المجربالهوائي الايجابي المستمر.

التوصيات: اوصت الدراسة بما يلي : (1) ضرورة تطوير مهارات الممرضين. (2) إعطاء فرصة للمشاركة في الدورات التدريبية لتحسين الرعاية التمريضية المقدمة للطفل تحت جهاز ضغط المجربالهوائي الايجابي المستمر. (3) وتوفير الكتيبات والكراسات للممرضات لتحسين معرفتهم

حولجهاز ضغط المجربالهوائي الايجابي المستمر

مفاتيح الكلمات: تقييم معارف ، جهاز ضغط المجربالهوائي الايجابي المستمر ، وحدة العناية المركز ةلحديثي الولادة.

Abstract- Objectives: To assess nurses' knowledge toward The Continuous Positive Airway Pressure (CPAP) Machine in Neonatal Intensive Care Unit at Al-Diwanyia City Hospitals and to find out the relationships between the nurses' knowledge concerning The Continuous Positive Airway Pressure (CPAP) Machine in Neonatal Intensive Care Unit and socio-demographic information.

METHODOLOGY: a descriptive study was carried out at Neonatal Intensive Care Unit at Al-Diwanyia City Hospitals During the period from December 26th -2016 to the 15th of May -

2017. A non-probability (purposive) sample of (24) nurses, who worked at Neonatal Intensive Care Unit at Al-Diwanyia City Hospitals. The tool of the study included a questionnaire, which has five main parts. The Reliability of questionnaire was determined through internal consistency and through a pilot study, and the content validity of the questionnaire was determined through an expert panel. The data were analyzed through the application of descriptive frequencies, percentages, mean of score and the inferential statistical analysis.

RESULTS: The study revealed that there is no statistical significant association between nurses' age, nurses' gender, nurses' level of education, years of service in nursing field, nurses' years of services in NICU, nurses' training course and their knowledge toward The Continuous Positive Airway Pressure (CPAP) Machine follow up (p value > 0.05). The present study concluded that high percentage of staff nurses were graduate junior high nursing and most of them had been participated in training courses about CPAP.

CONCLUSIONS: (1) Most study sample was females. (2) Mostly the ages of study sample were (25-29) Year. (3) A High percentage of the sample had been participated in training courses about CPAP.

RECOMMENDATION: (1) The study recommended the necessity to develop the nurses' skills. (2) Policy should be initiated to providing a special educational course about Neonates with Continuous Positive Airway Pressure (CPAP) Machine. (3) Providing updating booklets, pamphlets and boosters for nurses to upgrading their knowledge about Continuous Positive Airway Pressure (CPAP) Machine.

I. INTRODUCTION

Continuous Positive Airway Pressure (CPAP) is a noninvasive method for applying a constant distending pressure level (above atmospheric) during inhalation and exhalation to support spontaneously breathing newborn infants with lung disease. CPAP is an "open-lung approach" used to manage newborn infants predisposed to developing airway instability, edema, and atelectasis⁽¹⁾. CPAP is employed in infants with acute respiratory failure to correct hypoxemia. It permits a higher inspired oxygen content than other methods of oxygen supplementation, increases mean airway pressure, and will improve ventilation to collapsed areas of the lung. The recruitment of under ventilated lung is similar to the use of positive end expiratory pressure (PEEP) in the intubated mechanically ventilated patient⁽²⁾. Nasal continuous positive airway pressure (CPAP) is the most widely used non-invasive continuous distending airway pressure modality and a cornerstone of modern neonatal care. Whereas there has been emphasis on understanding which devices and pressure sources best implement CPAP, the optimal duration of this therapy is less well studied. At birth, premature infants have life-threatening anatomic and physiologic immaturities of the respiratory system. CPAP attenuates this pathophysiology until sufficient stability develops and continuous distending pressure is no longer needed⁽³⁾. Initial respiratory support of all spontaneously breathing preterm infants with respiratory distress may be provided by CPAP, rather than intubation. A randomized controlled trial (ARCT) enrolling 2358 infants born at < 30 weeks gestation demonstrated that CPAP is beneficial when compared to initial tracheal ventilation and PPV in reducing threat of intubation and duration of mechanical ventilation without any short term disadvantages⁽⁴⁾. Continuous Positive Airway Pressure (CPAP) applying via the nasal route to children presenting with clinical pneumonia (tachypnea plus retractions and/or nasal flaring Continuous distending pressure during the expiratory phase of respiration has been used clinically for a number of years the use of CPAP in spontaneously breathing hypoxic newborn infants,

and this therapy is in widespread use today. Measured physiological effects of CPAP include increased functional residual capacity, decreased intrapulmonary shunting, increased tidal volume, and decreased airway resistances⁽⁵⁾. Continuous positive airway pressure (CPAP) therapy has been used for many decades to treat acute hypoxemic respiratory failure (ARF) due to acute pulmonary edema, and pneumonia. Not only can it reduce the work of breathing, but it may also recruit alveoli and improve functional residual capacity. In ARF the work of breathing may increase such that the metabolic demand for oxygen increases to 25 per cent of total oxygen delivery. If cardiac function is depressed, oxygen delivery is reduced to vital organs and cardiac ischemia will exacerbate the cardiopulmonary decline⁽⁶⁾. Continuous positive airway pressure (CPAP) is the first line therapy for moderate to severe obstructive sleep apnea syndrome (OSAS). Both randomized controlled studies and observational cohort studies have demonstrated beneficial effects in terms of cardiovascular, metabolic, daytime vigilance and quality of life Outcomes⁽⁷⁾.

Objectives of the study

To find out demographic characteristics of nurses like age, gender, level of education ...etc.

To assess nurses' knowledge toward children with continuous positive airway pressure machine.

Finding out the relationship between nurses' knowledge toward CPAP and their general information characteristics such as (age, gender, nurses' educational level, years of experience in hospitals and years of experience at respiratory care unit).

II. METHODOLOGY

Administrative Arrangement:-After getting the approval of the council of Nursing College for the study, the researcher submitted a detailed description including the objectives and methodology of the study to the Ministry of Planning (Central Statistical Organization and to the Al-Diwanyia Health Directorate (Training and Development department) in order to obtain an official permission.

SETTING OF THE STUDY: To obtain a comprehensive data, the study was conducted in selected hospitals in Al-Diwanyia City, where Neonatal Intensive Care Units are available at the following Pediatric Teaching Hospitals: AL-Hussein Pediatric Hospital and The Pediatric and Maternity Teaching Hospital in Al-Diwanyia city, Iraq. The study was carried out during the period from (26December 2016 to 15 May 2017).

DESIGN OF THE STUDY:A descriptive quantitative design was carried out to assess the nurses' knowledge toward The Continuous Positive Airway Pressure (CPAP) Machine in Neonatal Intensive Care Unit.

THE SAMPLE OF THE STUDY: A non-probability (purposive) sample of (24) nurses was chosen. All of them working in Neonatal Intensive Care Units (NICU) at Pediatric Teaching Hospitals.

THE STUDY INSTRUMENTS: For the purpose of the present study, a questionnaire was conducted by the researcher, Scale of the questionnaire is (Yes or No)(36 questions) the correct answer code was (2) and the wrong answer code was (1).

The study instrument consisted of (5) parts. Part I: Socio-demographic information of the nurses. Part II: General information about Continuous Positive Airway Pressure (CPAP) Machine: It consists of (7) items. Part III: Nurses' knowledge about the Uses of (CPAP) Machine for premature babies and newborns. It included (10) items. Part IV: Nurses' knowledge about the Contraindications for using of the (CPAP) Machine for newborn and premature infants. It included (11) items. V: Nurses' knowledge about the Fundamentals for using CPAP Machine and The sign for (CPAP) failure in the treatment of respiratory distress syndrome. It included (8) items.

DATA COLLECTION:The data were collected through the utilization of the self-administrative questionnaire; the data were collected from (25) nurses at intensive care unit to provide care for neonate with Continuous Positive Airway Pressure (CPAP) Machine.

STATISTICAL ANALYSIS: The following statistical data were obtained by using the analysis approach (SPSS) to analyze and assess the data of the study Descriptive Data Analysis and Inferential statistical analysis.

III. RESULTS

Table(1): Distribution of the Study Sample According to their Sociodemographic Characteristic.

Variables	No.	%	
Ages (years)	20-24 years	6	25
	25-29 years	12	50
	30-34 years	4	16.7
	35-39 years	1	4.2
	40 years and more	1	4.2
	Total	24	100
Gender	Male	11	45.8
	Female	13	54.2
	Total	24	100
Level of education	graduate nursing Course	-	-
	Graduate Nursing school	2	8.3
	graduate Junior high nursing	10	41.7
	Graduate Institute of Nursing	8	33.3
	Graduate of the College of Nursing and over	4	16.7
	Total	24	100
Years of service	1-5 years	16	66.7
	6-10 years	5	20.8
	11-15 years	2	8.3
	16-20 years	1	4.2
	21 years and more	-	-
	Total	24	100
Years of experience in neonatal intensive care unit	1-5 years	18	75
	6-10 Years	6	25
	11-15 Years	-	-
	16 years and more	-	-
	Total	24	100
Training course about CPAP	Yes	15	62.5
	No	9	37.5
	Total	24	100
No. of training course	1-2	10	66.7
	3-4	5	33.3
	5-6	-	-
	7 and more	-	-
	Total	15	100

No. = number, %= percentage

This table (1) shows that 50% of the study sample was between (25-29) years of age, females were 54.2%, 41.7% had graduate Junior high nursing, 66.7% had (1-5) years of services, 75% of them had (1-5) years of experience in neonatal intensive care unit, 62.5% of them participated in intensive care courses for newborn, from the 15 nurses who participated in intensive care courses for newborn 66.7% of them had (1-2) courses.

Table (2):Distribution of Nurses Responses towardCPAPKnowledge

No.	Questions	True answer		False answer		M. S	Ass.
		f	%	f	%		
General information about device (CPAP)							
1.1	Maintenance of an increased (positive) trans pulmonary pressure during the inspiratory & expiratory phase of respiration.	16	66.7	8	33.3	1.67	M
1.2	Itworks to increase the effort during the process of breathing	3	12.5	21	87.5	1.12	L
1.3	It Conserves surfactant	4	16.7	20	83.3	1.17	L
1.4	It Increase the lung compliance	5	20.8	19	79.2	1.21	L
1.5	The unit of measurement for (CPAP) Machine is (Cm H2O).	9	37.5	15	62.5	1.38	M
1.6	It fails to work if the child continues the status of the chest retraction, asphyxia and snoring.	3	12.5	21	87.5	1.12	L
1.7	From its complication is Nasal obstruction.	5	20.8	19	79.2	1.21	L
Uses of device (CPAP) for premature babies and newborns							
2.1	It is used for patients with respiratory distress syndrome (RDS).	12	50	12	50	1.50	M
2.2	The Machine uses for treat Apnea of premature babies.	3	12.5	21	87.5	1.12	L
2.3	It can be used in case of premature baby with respiratory dysfunction and bradycardia movement.	-	-	24	100	1	L
2.4	It used if there was a possibility to infect the child with Pneumothorax.	1	4.2	23	95.8	1.04	L
2.5	If the child has bleeding in the upper gastrointestinal tract is used.	1	4.2	23	95.8	1.04	L

No.	Questions	True answer		False answer		M. S	Ass.
		f	%	f	%		
2.6	Used to eliminate excessive respiratory secretions of Baby.	-	-	24	100	1	L
2.7	When there is pulmonary bleeding may not use the (CPAP) Machine.	2	8.3	22	91.7	1.08	L
2.8	Used when low peak respiratory desired pressure in infants.	9	37.5	15	62.5	1.38	M
2.9	It works to increase intracranial pressure (ICP) for premature.	3	12.5	21	87.5	1.12	L
2.10	The goal of (CPAP) is to reduce the need for respiratory tube in emergencies.	4	16.7	20	83.3	1.17	L
Contraindications to use device (CPAP) for newborn and premature babies							
3.1	There is no mind to use the machine despite of the certain birth defects in the respiratory tract of a child its present, such as cleft lips or cleft palate.	4	16.7	20	83.3	1.17	L
3.2	It can be used in case of severe cardiovascular instability, such as low blood pressure.	3	12.5	21	87.5	1.12	L

3.3	If the child is unconscious and does not respond to stimuli, cannot use the (CPAP) machine in this condition.	8	33.3	16	66.7	1.33	L
3.4	It contraindicates the Machine in the case of pneumonia.	4	16.7	20	83.3	1.17	L
3.5	It Prevents use if the child suffers from nausea and vomiting.	4	16.7	20	83.3	1.17	L
3.6	If the child has surgery in the stomach, that does not affect the use of CPAP machine.	1	4.2	23	95.8	1.04	L
3.7	Abdominal distention is one of the most complication that can be happen.	8	33.3	16	66.7	1.33	L
3.8	Use of the machine does not reduce the proportion of urine and sodium excretion output.	-	-	24	100	1	L
3.9	The machine is not effective in the case of meconium aspiration.	-	-	24	100	1	L
3.10	CPAP Machine prevent to use in the case of Post-extubation in preterm VLBW infants.	-	-	24	100	1	L
3.11	CPAP cannot be used together with the Nebulizer.	-	-	24	100	1	L

No.	Questions	True answer		False answer		M. S	Ass.
		f	%	f	%		
Fundamentals in the use of device CPAP							
4.1	Pressure FIO2 for treatment of Respiratory Distress Syndrome (RDS) should be start at 4 Cm H2O.	-	-	24	100	1	L
4.2	Pressure FIO2 for treatment of Apnea of Prematurity (AOP) should be start at 5 Cm H2O.	-	-	24	100	1	L
4.3	The sign for (CPAP) failure in the treatment of respiratory distress syndrome is worsening respiratory distress and/or hypoxemia.	11	45.8	13	54.2	1.46	M
4.4	Recurrent episodes of apnea is not a sign for CPAP failure in the treatment of Apnea of premature infants.	4	16.7	20	83.3	1.17	L
4.5	Chronic obstructive pulmonary disease (COPD) the maximum level of the pressure (CPAP) machine to be provided is 10cm H2O.	-	-	24	100	1	L
4.6	Congestive heart failure (CHF) the maximum level of the pressure (CPAP) machine to be provided is 5cm H2O.	-	-	24	100	1	L
4.7	The appropriate position for the child when using the CPAP machine be lifting the head and put a pillow under it.	2	8.3	22	91.7	1.08	L
4.8	There is no need to match the size of the probe with a premature baby's nose.	8	33.3	16	66.7	1.33	L
Total score of nurses' knowledge		Poor (36-48)		Acceptable (49-60)		Good (61-72)	
		No.	%	No.	%	No.	%
		24	100	-	-	-	-

f= frequency, %= percentage, M. S= mean of score, Ass.= assessment, level of assessment: (1-1.33) = low = L, (1.34-1.67) = moderate = M, (1.68-2.00) = high = H

This table shows that, the nurses had low level of assessment when respond to the scale items except the items (1.1, 1.5, 2.1, 2.8, 4.3) the nurses had moderate level. According to the total score of nurses' knowledge, they had a poor level of knowledge.

Table (3): Distribution and Association of Nurses' Knowledge with Their Age.

Variables	Nurses' Knowledge	
	No.	Mean ± S.D.
Age (Years)		
20-24	6	1.16±0.015
25-29	12	1.16±0.014
30-34	4	1.15±0.017
35-39	1	1.17±0
40 and more	1	1.17±0
Total	24	1.16±0.014
		F =0.389 d.f.= 4 P = 0.814

$\bar{x} \mp S. D.$ = Arithmetic Mean (\bar{x}) and Std. Dev. (S.D.), No. = Number of frequencies, F = Fisher test, d.f. = degree of freedom, P = probability value.

This table shows that there is no statistical significant association between nurses' age and their knowledge concerning CPAP machine (p value > 0.05).

Table (4): Distribution and Association of Nurses' Knowledge with Their Gender.

Variables	Nurses' Knowledge	
	No.	Mean ± S.D.
Gender		
Male	11	1.16±0.014
Female	13	1.16±0.014
Total	24	1.16±0.014
		F =0.032 d.f.= 1 P = 0.859

$\bar{x} \mp S. D.$ = Arithmetic Mean (\bar{x}) and Std. Dev. (S.D.), No. = Number of frequencies, F = Fisher test, d.f. = degree of freedom, P = probability value.

This table shows that there is no statistical significant association between nurses' gender and their knowledge concerning CPAP machine (p value > 0.05).

Table (5): Distribution and Association of Nurses' Knowledge with Their Level of Education.

Variables	Nurses' Knowledge	
	No.	Mean ± S.D.
Level of Education		
graduate of the School of Nursing	2	1.15±0.021

graduate Junior high nursing	10	1.16±0.015
Graduate Institute of Nursing	8	1.17±0
Graduate of the College of Nursing and over	4	1.15±0.17
Total	24	1.16±0.014
		F =1.809 d.f. = 3 P =0.178

$\bar{x} \pm S. D.$ = Arithmetic Mean (\bar{x}) and Std. Dev. (S.D.), No. = Number of frequencies, F = Fisher test, d.f. = degree of freedom, P = probability value.

This table shows that there is no statistical significant association between nurses' level of education and their knowledge concerning CPAP device (p value > 0.05).

Table (7): Distribution and Association of Nurses' Knowledge with Their years of service.

Variables	Nurses' Knowledge	
	No.	Mean ± S.D.
years of service		
1-5 years	16	1.16 ±0.13
6-10 years	5	1.16 ±0.16
11-15 years	2	1.15±0.021
16-20 years	1	1.17±0.0
Total	24	1.16±0.014
		F = 0.366 d.f. = 3 P = 0.778

$\bar{x} \pm S. D.$ = Arithmetic Mean (\bar{x}) and Std. Dev. (S.D.), No. = Number of frequencies, F = Fisher test, d.f. = degree of freedom, P = probability value, < = Less than, ≥ = equal and more.

This table shows that there is no statistical significant association between nurses' years of services and their knowledge concerning CPAP device (p value > 0.05).

Table (8): Distribution and Association of Nurses' Knowledge with Their years of service in NICU.

Variables	Nurses' Knowledge	
	No.	Mean ± S.D.
years of service in NICU		
1-5 years	18	1.16 ±0.14

6-10 years	6	1.16 ±0.15
Total	24	1.16±0.014
		F = 0.062 d.f. = 1 P = 0.806

$\bar{x} \mp S. D.$ = Arithmetic Mean (\bar{x}) and Std. Dev. (S.D.), No. = Number of frequencies, F = Fisher test, d.f. = degree of freedom, P = probability value, < = Less than, ≥ = equal and more.

This table shows that there is no statistical significant association between nurses' years of services in NICU and their knowledge concerning CPAP device (p value < 0.05).

Table (9): Distribution and Association of Nurses' Knowledge with Their Training course about CPAP.

Variables	Nurses' Knowledge	
	No.	Mean ± S.D.
Training course about CPAP		
Yes	15	1.16±0.015
No	9	1.17±0.01
Total	24	1.16±0.014
		F = 2.301 d.f.= 1 P = 0.144

$\bar{x} \mp S. D.$ = Arithmetic Mean (\bar{x}) and Std. Dev. (S.D.), No. = Number of frequencies, F = Fisher test, d.f. = degree of freedom, P = probability value, ≥ = equal and more.

This table shows that there is no statistical significant association between nurses' training course and their knowledge concerning CPAP device (p value > 0.05).

IV. DISCUSSION

The data analysis of the present study as shown in Table (1) of the sociodemographic variables reveal that the majority of the participants age that 12 (50%) in the study sample were within (25-29) years, this results supported by Otheeb, (2016) study (Assessment of Nurses' Knowledge and Practices toward Isolation Techniques among Children with Hepatitis at Pediatric Teaching Hospitals in Baghdad City). who mentioned that most of his study sample were within (20-29) years⁽⁸⁾. Concerning to the nurses' gender, most of nurses in the study sample were female 13 (54.2 %) these results supported by Obaid et al., (2016) study (Nurses' Knowledge Concerning Neonatal Sepsis In Neonatal Intensive Care Units At Pediatric Teaching Hospitals In Baghdad City).who mentioned that the most of his study sample was female 40 (70%)⁽⁹⁾. In regard to the level of education, most of nurses 10 (41%) in the study sample were graduate Junior high nursing working in the Neonatal Intensive Care Unit, these results agree with Al-Jubouri, (2014) study

(Assessment of Nurse's Knowledge about Nosocomial Infection at Hospitals in Baghdad City)⁽¹⁰⁾. In relation to the number of years of experiences in nursing field 16 (66%) of nurses in the study sample had services of (1-5) years in the employment, As for years of experience in Neonatal Intensive Care Unit 18 (75%) of nurses had expert ≥1 years of provide in care for children, these results agree with Hammod, (2016) in her study (Effectiveness of an Educational Program on Nurses Knowledge Concerning Complications Prevention of Mechanical Ventilation at Intensive Care Unit in Al- Hussein Teaching Hospital at Nasiriya City). who mentioned that most of her study sample had experience 1-4 years were 17 (68.0%)⁽¹¹⁾. The results of the study also reveals that nurses participants in session of Continuous Positive Airway Pressure (CPAP) machine training (37%) who did not having training sessions This results supported by Al- Ftawy, (2011) in his study (Determination of Nurses' knowledge Toward Care Provided to Patients with Acute Myocardial Infarction in Al-Najaf City).Who mentioned that 18 (47.4%) who did not have training sessions⁽¹²⁾. The findings of the study sample showed that there is no statistical significant association between nurses' age, nurses' gender, nurses' level of education, years of service in nursing field, nurses' years of services in NICU, nurses' training course and their knowledge

toward The Continuous Positive Airway Pressure (CPAP) Machine at (p value > 0.05).

V. CONCLUSIONS

Most study sample were females, Mostly the ages of study sample were (25-29) Years, a High percentage of the sample had been participate in training courses about CPAP Machine.

VI. RECOMMENDATIONS

Nurses must participate in training course about CPAP inside or outside Iraq. The study recommended the necessity to develop the nurses' skills. In addition, Policy should be initiated to providing a special educational course about Neonates with Continuous Positive Airway Pressure (CPAP) Machine. Providing updating booklets, pamphlets and boosters for nurses to upgrading their knowledge about Continuous Positive Airway Pressure (CPAP) Machine.

REFERENCES

- [1] Diblasi R. Nasal Continuous Positive Airway Pressure (CPAP) for the Respiratory Care of the Newborn Infant. **Respiratory Care**. 2009 September; vol. 54 (9): 1209 – 1235.
- [2] Baudouin S, Blumenthal S, Cooper B, Davidson C, Davison A and Elliott M. Non-invasive ventilation in acute respiratory failure. **British Thoracic Society Standards of Care Committee**. 2002; vol. (57):192–211.
- [3] Bamat N, Jensen E and Kirpalani H. Duration of continuous positive airway pressure in premature infants. **Seminars in Fetal & Neonatal Medicine**. 2016: 1-7.
- [4] Wyllicia B, Bruinenberg J, Roehrd C, Rudigerf M, Trevisanutoc D and Urlesberger B. Resuscitation and support of transition of babies at birth. **Resuscitation**. 2015; vol. 95: 249–263.
- [5] Keenan W. Possible Continuous Positive Airway Pressure Treatment of Children with Pneumonia. **The Journal of Pediatrics**. 2012; Vol. 162 (5): 892-893.
- [6] Simonds A. **Non-Invasive Respiratory Support: A Practical Handbook**. 3rded. London: the United Kingdom, 2007: 57-58.
- [7] Borel J, Tamisier R, Domingos S, Sapene M, Martin F, Stach B, Grillet Y, Muir J, Levy P, Series F and Pepin J. Type of Mask May Impact on Continuous Positive Airway Pressure Adherence in Apneic Patients. **PLOS ONE**. May 2013; vol. 8(5): 1-8.
- [8] Otheeb A and Dr. Aburaghif L. Assessment of Nurses' Knowledge and Practices toward Isolation Techniques among Children with Hepatitis at Pediatric Teaching Hospitals in Baghdad City. **International Journal of Scientific and Research Publications**. 2016; Vol. 6(10): 168-173.
- [9] ObaidKh, Hussein A And Noori A. Nurses' Knowledge Concerning Neonatal Sepsis In Neonatal Intensive Care Units At Pediatric Teaching Hospitals In Baghdad City. **Asian Academic Research Journal Of Multidisciplinary**. 2016; Vol. 3(7): 56-65.
- [10] Al-Jubouri M. Assessment of Nurse's Knowledge about Nosocomial Infection at Hospitals in Baghdad City. **Journal of Kufa for Nursing Science**. 2014; Vol. 4(1):1-6.
- [11] Hammod H and Mohammed S. Effectiveness of an Educational Program on Nurses Knowledge Concerning Complications Prevention of Mechanical Ventilation at Intensive Care Unit in Al- Hussain Teaching Hospital at Nasiriya City. **KUFA JOURNAL FOR NURSING SCIENCES**. 2016; Vol. 6(2): 1-11.
- [12] Al- Ftawy D. Determination of Nurses' knowledge Toward Care Provided to Patients with Acute Myocardial Infarction in Al-Najaf City. **Kufa Journal for Nursing Sciences**. 2011; vol. 2(2): 1-14.

AUTHORS

First Author – Dr. Afifa Radha Aziz, Assist Prof, Pediatric Nursing Department, College of Nursing/ University of Baghdad, E: mail afifa Redha afifa50@yahoo.com
Second Author – Murtadha Abbas Abdul-Hamza, MSc Student, Pediatric Nursing, Ministry of health, Al-Diwanyia Health Directorate/AL-Hamza General Hospital