

# Effectiveness of an Educational Program on Nurses- Midwives Performance about Preterm Labor in Maternity Hospitals at Baghdad City

Bushra Thiab Obead<sup>1</sup>, Iqbal Majeed Abbas<sup>2</sup>

<sup>1</sup>Ph.D., Student, Academic Nursing Specialist, Baghdad Health Directorate Al-Risafa Sector, Ministry of Health, Iraq, <sup>2</sup>Ph.D. Emeritus Professor and Academic supervisor, Baghdad College of Medical Sciences / Nursing Department, Iraq

## Abstract

**Objectives:** determined the effectiveness of an educational program on nurses - midwives performance related to preterm labor and to Identify the relationship between the performance of nurses- midwives and study variables.

**Methodology:** A quasi-experimental design (one group pre & post ) was conducted on non-probability (purposive) sample of forty five nurses- midwives selected during period from (17<sup>th</sup> October 2020 to 1<sup>st</sup> March 2021).The study is conducted at the four maternity hospitals (Baghdad health directorate in Al-Karhk and Al-Risafa) sector. The study sample was selected from obstetric wards and delivery room and neonatal unit .The questionnaire form is consisted of socio-demographic characteristics and Performance of nurses -midwives towards preterm labor through (checklist).

**Result:** The result of study revealed that the (33.3%) of study sample was (26-30) years old with mean and standard deviation ( $\bar{x} \pm SD$ ) is ( $32.68 \pm 8.31$ ) years, and less of half of the study sample was graduated from midwifery secondary school, half of study sample were married, 46.7% of them had less than / equal to (5) year of Experience in Nursing and midwifery field. And (80%) of the them did not performances midwifery as a profession inherited , (78%) of them were working in Government Hospital only , (70%) of (Nurses- Midwives) were not practicing midwifery at midwife home , (91%) of them having knowledge about preterm labor from Practical experience and (30%) of them Suffered from preterm labor during their fertile age.

The result of study revealed there are (low GMS &RS) in most items in pretest period regarding Performance of Nurses – Midwives. While there are (high and moderate GMS &R.S) in all items in post 1 test and post 2 observation (after implementation of the program) for study sample.

**Keywords:** Education, Effectiveness, Nurses-Midwives, Program, Preterm labor and Performance.

## Introduction

Preterm birth (PTB) is still a widespread public health problem responsible for high perinatal mortality and long-term morbidity worldwide despite improved perinatal care programs, it still remains a major leading cause of perinatal mortality, mainly in developing countries <sup>(1)</sup>.

Preterm birth is one of the most troubling problems facing obstetrics today. In spite of all of the available refined research and therapeutic technology, the preterm birth rate has remained the same for the last 40 years. One birth in 10 occurs prematurely. Preterm labor demonstrates itself in a variety of ways. It is essential to differentiate true preterm labor from preterm contractions or other conditions that present with similar symptoms. True preterm labor requires

rapid clinical intervention in the obstetric triage setting  
(2) The prevention of preterm birth may be the most important problem facing maternity care providers (3).

In developing countries, the main causes of preterm births include infectious diseases and poor availability and accessibility of health care resources. In high-income countries, increase in the number of preterm births is linked to conception among older women and increased number of multiple pregnancies as a result of usage of fertility drugs. In some developed countries, medically unnecessary inductions and cesarean section deliveries before full term also increase preterm birth rates. In rich and poor countries, many preterm births remain unexplained (4)

To prevent preterm labor and delivery, a number of strategies have been developed. When choosing a strategy to prevent preterm birth, however, physicians must remember that preterm delivery arises from three separate conditions: iatrogenic preterm labor, premature rupture of membranes, and idiopathic preterm labor.

Preterm labor and birth are associated with traumatic life sites (e.g. close family death, domestic violence, Anxiety about losing food, home or partner) either indirectly by associated risk behaviors. Many of these risk factors present together, such as chlamydia endocervicitis and third trimester bleeding and cervical insufficiency.

Nurses and midwives are key players in empowering individuals and families and in promoting health safety and changes in health behavior throughout the life-course. The vital role of nurses or midwives in antenatal care is screening of pregnant women who are at risk for premature labor(5).

The role of nurses or midwives in childbirth is to ensure a safe environment for the mother and the birth of newborn and provide physical and emotional support, Nurses begin evaluating the mother through obstetrics history and Determine the frequency, duration, intensity of uterine contraction, cervical

dilatation and effacement and evaluating fetus during the labor, various techniques are used to assess maternal status. These techniques provide an ongoing source of data to determine the woman's response and progress in labor which included: Assess maternal vital signs temperature, blood pressure, pulse, respiration, and pain, Prepare pregnant women for possible ultrasonography, amniocentesis, administer tocolytic agent or steroid therapy as prescribed. And assess for side effects of tocolytic therapy such as decreased maternal Blood pressure, Dyspnea, Chest pain, FHS >180beats/min FHS >180beats/min.(6)

**Objectives:** To determine the effectiveness of an educational program on nurses - midwives performance related to preterm labor and to Identify the relationship between the performance of nurses-midwives and study variables

## Methodology

A quasi-experimental design (one group pre & post) was conducted from (17<sup>th</sup> October 2020 to 1<sup>st</sup> March 2021). on nurses - midwives in five maternity hospitals at Baghdad city: Fatima Al-Zahra, Al-Elwia maternity, Iben Al-Balady, Dhari Al-Fayyad and Al-Karkh maternity Teaching hospital. None probability (purposive) sample was used to select the sample of (45) nurses and midwives. A pilot study was carried out for the period from (1<sup>st</sup> of September 2020 to 9<sup>th</sup> of October 2020). The validity of the questionnaire was estimated through a panel of ten experts related to the field of the study, and its reliability was estimated through Split half approach which was statistically accepted. The study instrument consisted of two parts: socio-demographic characteristics of the nurses-midwives and performance of nurses -midwives towards preterm labor through (checklist). used by the researcher for three observations, with sufficient time (30 to 45 minutes), An instrument comprised of (18) items It was constructed through the use of three levels of likert scale for the implementation of Performance items. The rating score of checklist was (three) for always, (two) for some times and (one) for

never with cut-off point (2). Performance tests were used for pre, post1, and post 2 observation after one month.

The checklist consists of (131) items ( nine main domains), each one of these included several items: Infection control and prevention includes (5) items , pregnant woman during stages of labor) includes (10 ) items, Preparing pregnant woman for birth) includes (9 ) items, to first stage of labor) includes (12 ) items, second stage of labor includes (10 ) items, second stage of labor includes (10 ) items , premature newborn includes (23) items, third and fourth stage of early labor includes (19) items, instructions for mothers and their relatives includes (29), nursing documentation includes (14) items.

By observation and recorded checklist immediately after implementation of an educational program regarding preterm labor . Nurses- Midwives were exposed to the post2 test questionnaire about ( Performance) was conducting from the end of program during the first follow- up after 4 weeks of the post1test to identify their Performance regarding preterm labor. Data analysis was employed through the application of descriptive and inferential statistical approaches .

## Results and Discussion

The present study was reported that the highest percentage (33.3%) of study sample are at age group ranged between (26-30) years old with mean and standard deviation ( $\bar{x} \pm SD$ ) is ( $32.68 \pm 8.31$ ) as shown in table (1). These findings are consistent with A quasi-experimental study it used three tools ; (structured interview questionnaire, pre-post-test knowledge assessment sheet and an observation checklist) who reported that the highest percentage (were in the age group ranging between 20 years to less than 30 years<sup>(7)</sup> .

Also the present study was disagreement with other study who reported who reported that the highest percentage at age group ranged between (26-30) years

with mean and stander deviation was ( $33.84 \pm 9.40$ ).<sup>(8)</sup>

The highest percentage of the study sample (44.4%) were secondary of midwifery school graduate. While the lowest percentage (4.40 %) and (6.70) were graduated from nursing school and (6.70%) graduate from college of nursing as shown in table (1). This result agreed with other study who reported that majority (86.6%) of them had secondary nursing school <sup>(9)</sup> .Also agreed with other study who reported that the highest percentage (57.5%) of the nurses are graduated from secondary school, also mentioned that the (2.5 %) are from college of nursing. Half of the study samples were married. <sup>(10)</sup>

**Table (2) :** The result in current study shows that the highest percentage (35.6%) their job description were skilled midwife this result is consistent with other study employed who reported that the highest percentage (77.3%) of the sample were skilled midwives<sup>(8)</sup>.

The majority of study sample had less than 5 years in all felid of nursing and midwifery such as (nursing field Emergency department, Delivery room, Neonatal intensive care unit (NICU)), this result was agreement with other study who reported <sup>11</sup> that more than forty of the participants (78%) had less than five years of nursing experience in premature units (NICU) <sup>(11)</sup> . Ramasamy et al ., found that the highest percentages (76.7%) of the participant had (1-5) years of experience in nursing field <sup>(12)</sup>. The present study disagreement with study who reported that more than half of nurse/midwives (53.3%) had 1– 9 years' experience in the labor room <sup>(13)</sup>.

## The Result

Reveals That there are (low GMS &RS) in most items in pretest period regarding all performance of Nurses – Midwives toward preterm labor. Except item No (2.1) Preparation the necessary instrument and equipment for delivery room, item No (2.2): Assessment of the health status of the pregnant

woman, item No (2.3): Assessment of the health status of the fetus, item No (2.5) performance related to first stage of labor, item No (2.6): performance related to second stage of labor, item No (2.8): Nurses-Midwives performance during forth stage of labor, regarding Nurses- midwives performance related to premature newborn item No (3.3): If the new born heart rate lasts below than 60 minutes despite the effective ventilation for 30 seconds, Domains (4) instruction and dominoes (5): Documentation. Had (high and moderate GMS & R.S) in all items in post 1 and post 2 test (after implementation of the program) for study sample as show in table (3).

There are significant differences between (pre and post 1 observation and there are significant differences between (pre and post 2 observation). There are significant differences between (post 1 and post 2 observation) after the implementation of education program for nurse- midwives regarding pre-term labor. The percent study agreed with study Who revealed that there were a high significant relation between studied nurses' total performances and personnel characteristics in post intervention (14).

There is no statistical significant differences between socio-demographic variables and overall performance of nurses-midwives about preterm labor.

The results of this study was disagreed with study who reported that there are insignificant relation between studied nurses socio-demographic characteristics and their performances strategies used in the prevention and management of PPH and normal labor (15).

The findings of the present study are almost similar with the results of previous study who found there is no significant association between performance of nurses/midwives and their level of education during labor and delivery (16).

Also findings of the present study disagree with study who reported that Nurses' specialty had a significant effect on their total score of performances in the field of post-natal care (17).

This study differ with study who approved that there were no relation between nurses performances and general characteristics P value at 0.05 level. (18)

**Table (1): Distribution of the study sample according to socio demographic characteristics, (n=45)**

No	Socio Demographic Characteristic		
1	Age (years)	Frequency	%
	21-25	8	17.8
	26-30	15	33.3
	31-35	9	20.0
	36-40	3	6.70
	41-45	6	13.3
	46 & Above	4	8.90
	$\bar{x} \pm SD$ 32.68 $\pm$ 8.31		
2	Level of education		
	Graduate Nursing School	2	4.40
	Graduate secondary nursing school	7	15.6
	Graduate secondary of Midwifery school	20	44.4
	Graduate Institute of Higher Health Professions	4	8.90

**Cont... Table (1): Distribution of the study sample according to socio demographic characteristics, (n=45)**

	Graduate Institute of Midwifery	9	20.0
	Graduate college of nursing	3	6.70
3	<b>Social Status</b>		
	Single	14	31.1
	Married	23	51.1
	Divorced	5	11.1
	Widow	3	6.7
4	Is the midwifery occupation inherited		
	Yes	9	20.0
	No	36	80.0

**Table (2) Distribution of study sample according to job description and years of experience(n=45) .**

No	Variables	Frequency	%
1	Job description		
	University Nurse Trainer	2	4.40
	Older University Nurse	5	11.1
	Head of University Nurse	1	2.20
	Technical nurse	1	2.20
	Skilled midwife	16	35.6
	Oldest Skilled midwife	10	22.2
	Head of Skilled midwife	10	22.2
2	Years of experience in nursing field		
	≤ 5 year	21	46.7
	5 – 9 years	12	26.7
	10 – 14 years	8	17.8
	15 year and above	4	8.9
3	Years of Experience in Emergency department		
	≤ 5 year	40	88.9
	5 – 9 years	3	6.7
	10 – 14 years	1	2.2
	≤ 15 years	1	2.2

**Table (3) Nurses- Midwives performance regarding preterm labor before and after implementation of educational program for study sample (n=45)**

Performance of Nurses - Midwives		Pre observation			Post 1 observation			Post 2 observation		
No	Variables	GMS	RS	ASS	GM	RS	ASS	GM	RS	ASS
1	Infection control and prevention	1,774	59	L	2,544	84	M	2,734	91	H
2	<b>Performance Related to pregnant woman during stages of labor</b>									
2.1	Preparation the necessary instrument and equipment for delivery	2.787	92	H	2.827	94	H	2.855	95	H
2.2	Assessment of the health status of the pregnant woman	1.253	41	L	2.146	71	L	1.913	63	L
2.3	Assessment of the health status of the fetus	1.183	39	L	1.986	66	L	1.976	65	L
2.4	Preparing pregnant mother for birth	2,416	80	M	2,677	89	H	2,497	83	M
2.5	performance related to first stage of labor	1.550	51	L	2,425	80	M	2.350	78	M
2.6	performance related to second stage of labor	1,833	61	L	2.639	87	M	2.685	89	H
2.7	performance related to third stage of early labor	2.328	77	M	2.590	86	M	2.640	88	M
2.8	Nurses- Midwives performance during forth stage of labor	1,678	55	L	2.480	82	M	2.500	83	M
3	<b>Nurses- midwives performance related to premature newborn</b>									
3.1	Preparing the necessary equipment for neonatal resuscitation	2.497	83	M	2.647	88	H	2.640	88	H
3.2	Immediately Care for premature newborn after birth	2.320	77	M	2.780	92	H	2.604	86	H
3.3	If the new born heart rate lasts below than 60 minutes despite the effective ventilation for 30 seconds .	1.755	58	L	2.330	77	M	2.265	75	M
3.4	After 30 seconds the ventilation and compression is stopped and the heart rate, breathing and color are re-assessed:	2.265	75	M	2.762	92	H	2.697	89	M
4	<b>Instruction</b>									
4.1	for Self-care after discharge	1.771	59	L	2,387	79	M	2.552	85	M
4.2	planning to next pregnancies	1.631	54	L	2.394	79	M	2.272	75	M
4.3	danger signs after post-partum period	1.518	50	L	2.542	84	M	2,536	84	M
4.4	danger signs to the newborn	1.465	48	L	2.525	84	M	2.458	81	M
5	Nursing Documentation	2.340	78	L	2.562	85	M	2.528	84	M

Ass = Assessment F = Frequency, Percentage, GMS = Grand Mean Score, R.S = Relative Sufficiency (L = Low less than 75) , M = Moderate = 75 - 87.5 , H = High = 87.6 – 100).



## Conclusion

The study was concluded there was (low GMS &RS) in most items of Nurses- Midwives performance regarding preterm labor before implementation of educational program, while there are (high & moderate GMS &RS) in most items after implementation of educational program.

The study was concluded there was a statistically significant difference in nurses - midwives overall performance related to preterm labor between the pretest and posttest for study sample, also there are significant differences between (post 1 and post 2 performance) after the implementation of education program for nurse- midwives regarding pre-term labor and there are no statistical significant differences between socio-demographic variables and overall performance of nurses-midwives. .

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the Ministry of Health, Iraq and all experiments were carried out in accordance with approved guidelines.

## Recommendation:

Every hospital should update the guidelines during the intervention during stages of labor and immediate resuscitation of premature baby Guidelines for nurses- midwives to instruction and prevention of preterm labor should be used as routine hospital care.

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