

# Effectiveness of Education Program on Nurse-Midwife's Knowledge Regarding Immediate Newborn Care in Delivery Rooms at Maternity Hospitals in Baghdad City/Iraq

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## Abstract

Immediate newborn care is the care given to newborns in the transitional period (immediately after birth) which crucial to their survival. Nurses- midwives require adequate knowledge and skills to provide immediate newborn care. The study was aimed at determining the effectiveness of education program on nurses- midwives' knowledge before and after the implementation of an educational program regarding immediate newborn care in delivery room among study sample. Quasi-experimental study was conducted from 1<sup>st</sup> October 2019 to 20th January 2021 at three maternity teaching hospitals in Baghdad city/Al-Russafa Health Directorate: Al-Elwiya Maternity Teaching hospital, Fatema Al- Zahra Maternity and Pediatric Hospital, Al- Za' faraniyah General Hospital. Non-probability (convenient sample) used to collect the data from (40) participant (nurse-midwife) who work in delivery room that considered as study sample. The results of study indicated that nurses- midwives' knowledge assessment before the implementation of an educational program for study sample was moderate related to immediate newborn care in delivery room. There were high significant differences in participants' knowledge at pretest and posttest before and after the implementation of education program for study sample. Socio- demographic and professional variable were no significant effect on their knowledge. The study findings showed that program had been an effective method of increasing the nurses- midwives' knowledge about immediate newborn care in delivery room.

**Key words:** Delivery rooms, Effectiveness, Education, Immediate newborn care, knowledge, Nurse-midwife, Program

## Introduction

Neonatal mortality and morbidity were the biggest challenges in the current healthcare scenario. The neonatal period (the first 28 days of life) is the most vulnerable time for children under five ages. Three quarters of all neonatal deaths occur within the first week of life, and approximately a third occurs within the first day after birth. Focusing on the critical periods before and immediately following birth is essential to saving more newborn lives <sup>(1)</sup>. Most of the neonatal deaths occur in Asian countries, which accounts for more than a quarter of the global neonatal mortality. In 2019, neonatal mortality rate in Iraq was 15.3 deaths per 1000 live births <sup>(2)</sup>. Immediate newborn care (INC) is the care given to newborns in the transitional period

(immediately after birth) is crucial to their survival. Nurses- midwives require adequate knowledge to provide immediate newborn care interventions <sup>(3)</sup>. The care given to newborns immediately within the first few hours of birth was critical for their survival. However, their survival depends on the nurse- midwife's knowledge to deliver appropriate newborn care interventions. Therefore, the knowledge of health care workers on immediate newborn care was vital to reduce neonatal morbidity and mortality. Nurses- midwives require knowledge provide immediate newborn care interventions <sup>(4)</sup>. Professional care at birth is crucial for both the newborn baby and mother. Nurses- midwives are regularly placed in the care of newborns admitted to formal health care facilities. Improving their knowledge are very important aspects of these health facilities <sup>(5)</sup>.

The most important for newborn and maternal survival are labor, birth and the immediate postnatal period. Unfortunately, in low and middle income countries most mothers and newborns do not receive adequate care. Studies were showed that many newborn lives can be saved by using procedures involving simple equipment provided by a single professional birth attendant who cares for the mother and the neonate. Caring of all newborns involves immediate and thorough drying, skin to skin contact, cord clamping and cutting after the first minutes after birth, early initiation of breastfeeding, and exclusive breastfeeding. After the first hour of life, newborns should receive eye treatment, vitamin K, and recommended immunizations <sup>(6)</sup>. Competent nurse- midwife practitioner and skilled delivery care are crucial to ensure quality health services for saving of mothers and newborns lives. However, nurse- midwife's knowledge is essential for improving the newborn health; there has been a great gap in recommended knowledge of maternity health services among them in developing countries <sup>(7)</sup>. The reason of neonatal death was the low levels of knowledge among health workers regarding newborn care <sup>(8)</sup>.

### Materials and Method

A quasi experimental design one group “pre/post intervention” approach was conducted throughout the present study with the application of pretest and post-test approach on nurses-midwives knowledge regarding immediate newborn care before and after the implementation of an educational program during the period 1<sup>st</sup> October 2019 to 20th January 2021. Non-probability (convenient sample) used to collect the data from subjects (nurses- midwives) who work at three maternity teaching hospitals in Baghdad city/ Al-Russafa Health Directorate: Al-Elwiya Maternity Teaching hospital, Fatema Al- Zahra Maternity and Pediatric Hospital, Al- Za'faraniyah General Hospital. 45 nurses-midwives were selected. Five participants were dropped out from entire sample. The criteria for selecting the study sample are: nurses –midwives who are working in the morning and night shifts in delivery rooms, different educational levels, and who agree to participate in the study. The sample (40) nurses-midwives were exposed to pretest to assess knowledge,

and then the implementation of an educational program was carried out by the researcher and posttest was applied for study sample. The questionnaire was instrument of study consisted of two main parts which includes: part one/ socio demographic and professional variables, part two/ nurse- midwife knowledge regarding immediate newborn care that consisted of (67) items were designed as multiple choices, The rating score of response options were (two) for correct answer and (one) for incorrect answer with cut-off point (1.5). The questionnaire sheet was consisted of (three) domain, first domain/general knowledge about newborn care: this domain consists of (seven) items. Second domain/ immediate newborn care within one hour of birth: this domain was consisted of (nine) items. Third domain/ immediate newborn care after one hour of birth: this domain was consisted of (four) items. A program is constructed to contain three components: introduction, immediate newborn care within one hour of birth, immediate newborn care after one hour of birth /prior to discharge from delivery room. Instrument is constructed relative to program, to determine the effectiveness of the program on nurses-midwives' knowledge concerning immediate newborn care. The program and the instrument's content validity is determined through panel of (17) experts. A pilot study was conducted before starting actual data collection on (10) nurses- midwives who work at Baghdad Teaching Hospital/ Maternity department/delivery room. The reliability of instrument was determined through the test and re-test approach, with distance period two weeks between these tests. The result of the reliability was ( $r= 0.993$ ) with Pearson correlation coefficient was calculated ( $r = 0.988$ ) for knowledge items. To analyze the data, statistical procedures were used as descriptive statistic and inferential statistic with a p-value equal or less than 0.05 were considered significant.

### Results and Discussion

Analysis of demographic variables indicated that the mean ( $\pm$ SD) age was ( $37.18 \pm 10.65$ ), majority (22.5%) were ranged between (36- 40) years. This results was disagreed with Jennifer et al., (2018) who studied that more than half of the nurses- midwives' were aged between (22– 24) years <sup>(9)</sup>. The highest percentage (85%) of the subjects in the study sample

was graduated from midwifery secondary school. This result was disagreed with Gebru et al., (2019) who studied that majority (83%) of nurses-midwives were diploma graduated<sup>(10)</sup>. The highest percentage (47.5%) of study sample was married. This result was disagreed with Yemaneh & Dagnachew (2017) who showed that only (26.1%) of nurses their marital status was married<sup>(11)</sup>. The mean ( $\pm$ SD) nursing experience of study sample was ( $9.55 \pm 7$ ), the majority (40%) were ranged between (6-10) years. And mean ( $\pm$ SD) experience in delivery room was ( $6.53 \pm 5.94$ ), the majority (52.5%) were ranged between (1- 5) years. This result was agreed with Traore (2018) who revealed that the study sample have more than five years of professional experience in midwifery<sup>(12)</sup>. Negussie et al., (2018) concluded that two third of the study participants had less than six years' experience of delivery care service<sup>(13)</sup>. The highest percentage (67.5%) of study sample has training courses in immediate newborn care. This inconsistent with those of Devi et al., (2017) who stated that majority (83%) of the staff nurses were not exposed to any other additional courses of immediate newborn care<sup>(14)</sup>. The highest percentage (100%) of study sample (nurses- midwives) interest to work in midwifery. This result was agreed with Arba & Zana (2020) who stated that all participants interest to work in delivery room<sup>(15)</sup>. As shown in table (1). The finding of current study showed that a significant improvement in the nurses- midwives knowledge after the implementation of an educational program regarding immediate newborn care in delivery room at ( $P \leq 0.05$ ). And there was a high significant correlation between

pretest and posttest (before and after the implementation of an educational program for study sample. As shown in table (2) by using of paired samples t-test, and figure (1). So the researcher accepted the alternative hypothesis and rejected the null hypothesis which means that the mean posttest knowledge score for nurses- midwives' who attend education program regarding immediate newborn care in delivery room have significant higher than their mean pretest knowledge score (Mean pre  $\neq$  Mean post) at  $p$ -value  $\leq 0.05$ . The finding was agreed with Thukral et al., (2015) who develop an evidence-based educational program designed to increase cognitive knowledge of nurses-midwives in immediate newborn care in low-resource areas. The course focuses on the immediate care of the newborn after birth and during the first day or until discharge from the health facility<sup>(16)</sup>. The program was highly acceptable, demonstrated improved confidence, improved knowledge. Immediate newborn care specific training has positive impact of on the level of knowledge of the nurses-midwives (Makene, 2014)<sup>(17)</sup>. The finding was revealed that the age, nursing experience, experience in delivery room, educational level, social status, training courses variables have no association with nurses-midwives knowledge before and after implementation of an educational program regarding immediate newborn care in delivery rooms among study sample. This result was agreed with Jamsheer & Shaker (2018) who reveals that there were no significant associations between overall immediate newborn care knowledge and nurse/midwife's educational level, experience years and training course<sup>(18)</sup>.

**Table (1) Distribution of Study Sample According to the Socio- Demographic and Professional Variables**

	Study sample (n=40)		
	F.	%	Cumulative Percent
Age / years			
21-25	8	20	20
26-30	7	17.5	37.5
31-35	2	5	42.5
36-40	9	22.5	65
41-45	3	7.5	72.5

**Cont... Table (1) Distribution of Study Sample According to the Socio- Demographic and Professional Variables**

46-50	7	17.5	90
51 and above	4	10	100
$\bar{x} \pm SD$	37.18 $\pm$ 10.65		
Educational level			
Midwifery secondary school graduate	34	85.0	85
Medical technical institute graduate	1	2.5	87.5
High health institute graduate	5	12.5	100
Social status			
Married	19	47.5	47.5
Widow	3	7.5	55
Divorced	6	15	70
Single	12	30	100
Nursing Experience/ years			
less than one year	1	2.5	2.5
1-5	11	27.5	30
6-10	16	40	70
11-15	6	15	85
16 years and more	6	15	100
$\bar{x} \pm SD$	9.55 $\pm$ 7		
Experience in delivery room/ years			
less than one year	5	12.5	12.5
1-5	21	52.5	65
6-10	6	15	80
11-15	5	12.5	92.5
16 years and more	3	7.5	100
$\bar{x} \pm SD$	6.53 $\pm$ 5.94		
Participated in previous training courses			
Yes	27	67.5	32.5
No	13	32.5	100

F. = Frequencies, % = Percentages, SD = Standard Deviation,  $\bar{x}$ =Mean

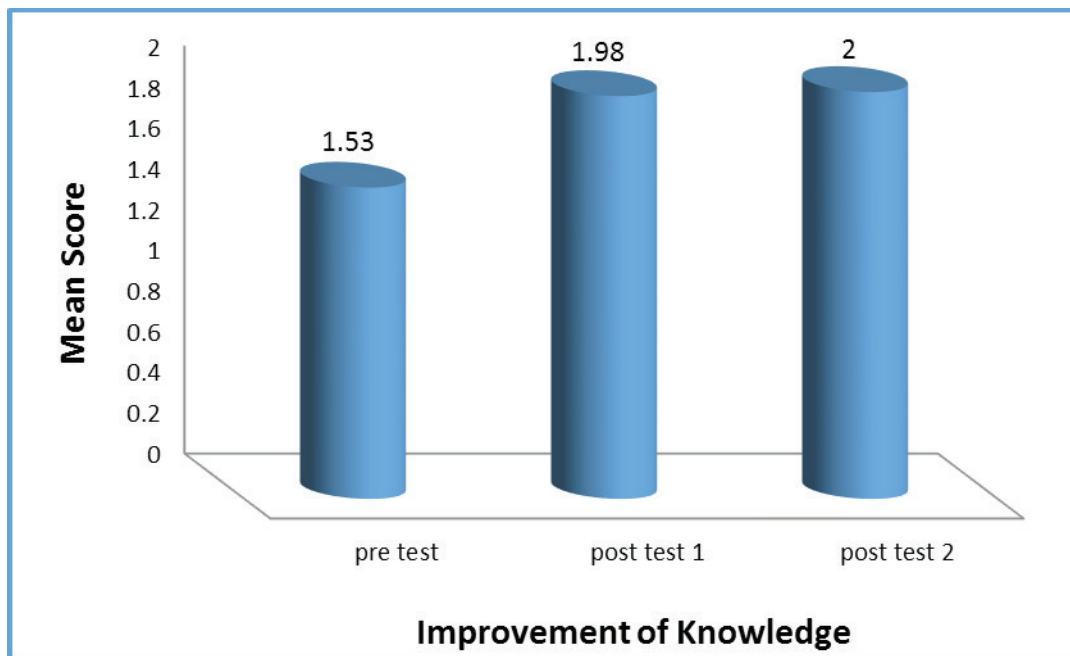


Figure (1): Bar chart plot illustrates the mean scores and improvement percentage of the study sample for main domains related to nurses- midwives’ knowledge at overall periods.

Table (2): Effectiveness of an Educational Program regarding Immediate Newborn Care in Delivery Rooms on Nurses -Midwives’ Knowledge at Overall Periods (n= 40)

Paired Sample Test								
Periods	Paired Differences					t	Df	Sig. (2-tailed)
	Mean of Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Upper	Lower			
Pre- Post 1 Test	-29.750	7.604	1.202	-27.317	-32.182	-24.742	39	0.00
Post1- Post2Test	-1.700	1.435	0.227	-1.240	-2.159	-7.488	39	0.00
Pre- Post2 Test	-31.450	7.260	0.227	-1.240	-2.1591	-27.396	39	0.00

t = t-test, df= degree of freedom Sig. =Significant at p-value = ≤ 0.05

### Conclusion

The study findings showed that the education program regarding immediate newborn care contributes in improving nurse- midwife’s knowledge. The educational program had been an effective method of

increasing the nurses– midwives’ knowledge regarding immediate newborn care.

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

**Ethical Clearance** “All experimental protocols were approved under the Ministry of Health were carried out in accordance with approved guidelines”.

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