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Nurse-Midwives' knowledge and practices about immediate newborn care

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***Abstract*---**Newborn is considered to be small and incapable, totally dependent on other for lifetime; within one minute of labor the normal new born baby adjusts from a reliant on serious lifespan to an independent one; ready to breathing and carriage on life route. Newborn care is crucial. Clean cord care, thermal care, including drying and covering the newborn vaginal delivery and trying to delay the newborn's first bath for at least 24 hours (sometimes several days to minimize hypothermia risk), and beginning of breastfeeding within the first one hour of birth, management of instantaneous asphyxia, and management of early sepsis are all interventions to reduce newborn morbidity and mortality. Every year, approximately 3 million lives could be saved if evidence-based solutions such as skilled birth attendant care were universally available. Objective: To assess Nurse-midwives' Knowledge about Immediate Newborn Care and to evaluate Nurse-midwives' practice about Immediate Newborn Care. Methodology: A descriptive and analytic design conducted to assess nurses' and midwives' knowledge and to evaluate practices regarding immediate newborn care f. The study was started at 1st of September 2021, to 25th of March 2022. A non-probability (purposive sample) included (50) nurse-midwives who work in Maternity Teaching Hospital's delivery room. The questionnaire consists of three main parts (the first one is about nurses and midwives' demographic characteristics, the second is nurses 'and midwives' knowledge about on immediate care for newborn and third is nurses 'and midwives practice about on immediate care for newborn. A pilot study is done to determine the questionnaire's reliability. SPSS (24) version was used to examine the data. Results: knowledge of nurse -midwives about immediate newborn care; The mean score indicates that nurse-midwives' knowledge is fair to good, with good levels in items (Skin to skin contact, Apgar score, Dry newborn, newborn body weight, put

identification band) and fair levels in items (Administration of vitamin K) and poor level (When excretion of secretions from the mouth and chest of the newborn, The primary critical observation for Apgar scoring is the heart rate and Giving preventive drugs to the inflammation eyes of a neonate). While nurse-midwives practice immediate infant care, the mean score indicates that nurse-midwives' practices was fair, the mean score indicates that nurse-midwives have a poor level of practices across items (hand washing, assessment, etc.). Conclusions: the study concluded that the nurse-midwives' knowledge showing fair to good level, while they showing poor level in most of the infant postpartum care practices.

***Keywords*---**Nurse and Midwives, Knowledge, practices, Immediate Newborn Care.

Introduction

Essential newborn care is the care providing to the newborn babies after labor within the delivery room by practiced workers which includes drying and motivating, evaluating breathing air , cord care, skin to skin contact, initiating exclusive breastfeeding, eye care, vitamin k providing, place of identification band and weighing. [1]

Essential newborn care has standardized and active practical steps: drying and motivating, evaluating breathing, care of umbilical cord, protection the newborn warm (preventing hypothermia), starting breastfeeding within the first hour, managing eye drops / eye ointment, administering vitamin K intramuscularly, newborn identification straps, weighing the newborn, when stable and warm, write all notes and treatments, delay bathing the baby for 24 hours after birth. [2]

Every year, an estimated 2.5 million neonates die worldwide, or around 7000 per day. The greatest of neonatal deaths (75%) occur in the first week of life, with nearly a quarter dying within the first 24 hours. WHO estimates that 98 percent of newborn deaths occur in developing countries (2019). For the newborns' eventual wellness and adaption, immediate care timing is crucial. Only skilled labor and delivery combined with immediate management of problems can avoid about half of neonatal death. 75 percent of current baby mortality can be avoided if sufficient neonatal care is provided in the postnatal era. This is an all comprehensive strategy aimed at improving the health of babies. [3]

The majority of healthcare practitioners do not practice in a proper manner. Many neonatal deaths can be avoided if necessary newborn care is provided.[4] The World Health Organization recommends that improving ENC be emphasized as a priority activity around the time of birth in order to substantially reduce newborn mortality. Despite the implementation of many efforts to improve vital infant care, only 16.4% and 13% of newborns received skilled health workers during delivery and the postnatal period, respectively. [5].

The majority of neonatal deaths occur in the first week of life, with asphyxiation at delivery (47.5 %), neonatal infections (34.3 %), and prematurity accounting for 93 % of NMR instances (11.1 %).[6]

According to certain research, 25 % of health care providers do not have sufficient knowledge of essential newborn care, 28 percent do not have effective essential newborn care practices, and only 9.8 % of participants in the study are informed about infant resuscitation[7]

One technique for improving infant health outcomes is to promote ENC. This necessitates health-care systems that can provide continuum of care from the onset of pregnancy (and even before), through professional competent childbirth care, and into the postnatal period. However, the standardized technique for obtaining ENC is not widely used. One of the most important parts of health systems in terms of adhering to ENC standards is knowledge[8]

Methodology

A descriptive and analytic study conducted to assess nurses' and midwives' knowledge and to evaluate nurses and midwives' practices regarding Immediate Newborn Care for the study population using, the study was started at (1st September 2021 to March 25th 2022). Non-probability (purposive sample).The study was performed in the labor and delivery rooms of Holly Karbala City's Maternity Teaching Hospitals. The study's sample included **(50)** nurse-midwives who work in the delivery room at the Maternity Teaching Hospital and were participating in the assessment. which are chosen according to the study's criteria**.** The samples were chosen based on the Nurse-midwives who worked in the delivery rooms at Holly Karbala City's Maternity Teaching Hospital and who not have knowledge and practices of immediate newborn care. while Exclusion Criteria ,Nurses - midwives' who perform the work in Emergency wards and Clinical wards .and Nurses - midwives who do not want to be a part of the immediate newborn care assessment.

A questionnaire was developed by researcher thorough review of related literature. The questionnaire consists of three main parts includes the following: **Part I:** consists of the nurses- midwives' demographic characteristics such as (Nurses - midwives age, level of education, number of years' service in a hospital, number of years' experience in midwifery, whether they have completed a training course for immediate postpartum care, the number of training courses they have completed, and the location of their participation.)

Part II: Including the assessment concerning nurses-midwives' knowledge about Immediate Care for newborns. Consist of (10) items relating to nurse-midwives' knowledge of providing immediate care to newborns such as (Skin to skin contact between mother and newborn baby occur after birth Immediately, Skin to skin contact is important for maintain of newborn body temperature, when excretion of secretions from the mouth and chest of the newborn is must be holding of newborn head down help to drainage the fluid from the newborn chest., Assessment of Apgar score points were in: at 1 and 5 minutes after birth, The primary critical observation for Apgar scoring is the heart rate ,Administration of

vitamin K to prevents newborn infant from abnormal bleeding, Drying newborn and covered head immediately after birth help to prevent body heat loss of newborn , The special procedure for giving preventive drugs to the inflammation eyes of a neonate is instill the eye ointment into each of the neonate's conjunctival sacs within one hour after birth., Accomplish newborn weight after birth was 2500 g – 3500g and Identification band put immediately before cutting the cord is containing registration of the mother's name, child sex, date on the mark or tape.

Part III: Including the checklist concerning nurses-midwives' practices about Immediate Care for newborns. Consist of (27) items relating to nurse-midwives' practice of providing immediate care to newborns such as (Provide safe environment and control of pollution, Hand washing during contact with newborn baby, Using sterile instruments with newborn baby, Put the newborn on the mother abdomen by skin to skin contact, A full clinical examination (including weight, danger signs, eyes, umbilical cord) breathing assessed, Immediately at birth, all babies should be dried thoroughly and there, Cleaning air way, Suction the secretion from the mouth and nose, Dry and covering the baby with clean towel, Promote early and exclusive breastfeeding (EBF) within 1 hour after delivery, The cord should be clamped and cut only after 1–3 minutes, unless the baby needs resuscitation, Clean, dry cord care is recommended for newborns born in delivery room , Use of chlorhexidine application to the umbilical cord care during the first week of life to reduce newborn mortality , Ensure newborn clear from any deformities, Keep babies warm in cold environments and for all newborns for at least 1 hour after birth , Given the vulnerability of preterm and low-birth-weight babies, interventions are needed to newborns to ensure they receive special care , The newborn should be evaluation if any of the signs is present: stopped feeding well, history of convulsions, fast breathing (breathing rate of ≥60 per minute), severe chest in-drawing, and no spontaneous movement, Take Apgar score (1-5) mint after birth, Giving vitamin K, Educate mother about essential giving BCG vaccination for newborn after birth, Giving Hepatitis B vaccination as soon as possible after birth (within 24 hours).

Apply prophylactic eye drops within 1 hour of birth or tetracycline ointment for newborn eyes, Taking newborn temperature, Monitor Jaundice signs on first 24 hours after birth or pale palms or sole stained yellow, Bathing should be delayed until 24 hours after birth, Put tag on the baby's hand and Record mother name, sex of baby, date of birth on the tag. The data were collected after getting permission from the participants. Through the period from 1st September 2021 to 25th March 2022).

A pilot-study is conducted to determine the reliability of the questionnaire. The pilot study was performed from the period 1st of August 2021 to 28th of August 2021 in Maternity Teaching Hospital. The sample comprises of (5) Nurse-Midwives. The pilot study of sample was not included in the study's original sample.

To assess of the nurses and midwives' knowledge regarding immediate care for the newborns. Each question included three answers: (one correct answer and two incorrect answers); the correct answer received a score of (1), while the

incorrect answer received a score of (0). M.S: Poor = 0 – 0.33, Fair = 0.34 – 0.67, Good = 0.68 – 1

The evaluate of the nurses and midwives applied by a checklist that content the standards of nurses and midwives' practices to immediate care for the newborns. The researcher do three observations for each nurse and midwife (the same nurse and midwife for the same condition for the deferent patients).

The three Likert scale was used for the purpose of items' rating for the three domains follows: (1) for never, (2) for sometimes, and (3) for always. The nurse's responses are collected by direct observation of all nurse-midwives' practices by the researcher. Nurse-midwives' practice was given a score of good, fair, and poor. M.S: Poor = 0 – 1, Fair =1.1 – 2, Good = 2.1 – 3
SPSS (Statistical Package for Social Sciences) version 24.0 and excel is used to examine the data. it includes: data of this study analyzed descriptive by identifying the change and the percentage, frequency, standard deviation and mean of score. Also means determining the outcome. And Inferential Statistical Tests (Pearson Correlation Coefficient and Repeated Measure ANOVA)

Results

Table (1)
Distribution of Nurse-midwives According to their Demographic Characteristics

List	Characteristics		F	%
1	Age (M±SD=34±9.935)	≤ 19 year	1	2
		20 – 29 year	20	40
		30 – 39 year	14	28
		40 – 49 year	10	20
		50 ≤ year	5	10
		Total	*50*	*100*
2	Nursing qualification	Middle school	0	0
		Midwifery secondary school	34	68
		Nursing secondary school	8	16
		Nursing institute	8	16
		College +	0	0
		Total	*50*	*100*
3	Years of Service in hospital (M±SD=8.64±9.156)	< 1 year	7	14
		1 – 5 years	8	16
		6 – 10 years	20	40
		11 – 15 year	13	26
		16 – 20 year	1	2
		21 ≤ year	1	2
		Total	*50*	*100*
4	Years of experience in	< 1 year	8	16

	midwifery (M±SD=7.60±6.922)	1 – 5 years	10	20
		6 – 10 years	24	48
		11 – 15 year	7	14
		16 – 20 year	0	0
		21 ≤ year	1	2
		Total	*50*	*100*
5	Participation in training courses	No	7	14
		Yes	43	86
		Total	*50*	*100*
6	Number of courses	None	7	14
		1 – 5	20	40
		6 – 10	12	24
		11 – 15	5	10
		16 ≤	6	12
		Total	*50*	*100*
7	Place of training courses	None	7	14
		Inside country	43	86
		Outside country	0	0
		Total	*50*	*100*

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

The descriptive analysis of data shows that nurse-midwives' age is 34±9.935 year in which 40% of them are associated with age group 20-29 years. Regarding nursing qualification, 68% of nurse-midwives are graduated from midwifery secondary school. The years of service in hospital refers to 8.64±9.156 year, the highest percentage is seen with 6-10 years among 40% of nurse-midwives and 26% seen with 11-15 year.

Regarding years of experience in midwifery, it refers to 7.60±6.922 year and the highest percentage is seen with 6-10 years among 48% of nurse-midwives while 20% have 1-5 years of experience. Regarding participation in training courses about immediate newborn care, 86% of nurse-midwives reporting they are participated in training courses, 40% of them participated in 1-5 courses and 24% participated in 6-10 courses. The participation was inside country among those participated nurse-midwives (86%).

Table (2)
Assessment of Nurse-Midwives' Knowledge about Immediate Newborn Care (N=50)

List	Knowledge about immediate newborn care	M.S	R.S	ASS
1	Skin to skin contact between mother and newborn baby occur after birth Immediately	0.98	49	Good
2	Skin to skin contact is important for maintain of newborn body temperature	0.84	42	Good
3	When excretion of secretions from the mouth and chest of the newborn is must be holding of newborn head down help to	0.16	8	Poor

	drainage the fluid from the newborn chest.			
4	Assessment of Apgar score points were in: at 1 and 5 minutes after birth	0.72	36	Good
5	The primary critical observation for Apgar scoring is the heart rate	0.20	10	Poor
6	Administration of vitamin K to prevents newborn infant from abnormal bleeding	0.62	31	Fair
7	Drying newborn and covered head immediately after birth help to prevent body heat loss of newborn	0.72	36	Good
8	The special procedure for giving preventive drugs to the inflammation eyes of a neonate is instill the eye ointment into each of the neonate's conjunctival sacs within one hour after birth.	0.30	15	Poor
9	Accomplish newborn weight after birth was 2500 g – 3500g	0.86	43	Good
10	Identification band put immediately before cutting the cord is containing registration of the mother's name, child sex, date on the mark or tape	0.88	44	Good

M.S: Mean of score, R.S: Relative sufficiency, Ass: Assessment
M.S: Poor= 0 – 0.33, Fair=0.34 – 0.67, Good=0.68 – 1

This table presents that the mean scores for items related to knowledge about immediate newborn care; the mean score indicate that nurse-midwives' knowledge showing fair to good level in which they show good level in items 1, 2, 4, 7, 9, and 10; fair level in item 6; and poor level in items 3, 5, and 8.

Table (3)
Assessment of Nurse-Midwives' Practices about immediate Postpartum Care for Newborn (N=50)

List	Practices of immediate newborn's care	M.S	R.S	ASS.
1	Provide safe environment and control of pollution	2.96	74	Good
2	Hand washing during contact with newborn baby.	0.12	3	Poor
3	Using sterile instruments with newborn baby	3.00	75	Good
4	Put the newborn on the mother abdomen by skin to skin contact.	2.98	74.5	Good
5	A full clinical examination (including weight, danger signs, eyes, umbilical cord) breathing assessed	0.04	1	Poor
6	Immediately at birth, all babies should be dried thoroughly and their	2.86	71.5	Good
7	Cleaning air way.	1.90	47.5	Good
8	Suction the secretion from the mouth and nose.	0.70	17.5	Poor
9	Dry and covering the baby with clean towel.	3.00	75	Good
10	Promote early and exclusive breastfeeding (EBF) within **1** hour after delivery.	0.46	11.5	Poor
11	The cord should be clamped and cut only after **1–3** minutes, unless the baby needs resuscitation	2.98	74.5	Good
12	Clean, dry cord care is recommended for newborns born in delivery room	1.56	39	Fair
13	Use of chlorhexidine application to the umbilical cord care during	0.00	0	Poor

	the first week of life to reduce newborn mortality			
14	Ensure newborn clear from any deformities	2.22	55.5	Good
15	Keep babies warm in cold environments and for all newborns for at least **1** hour after birth.	2.96	74	Good
16	Given the vulnerability of preterm and low-birth-weight babies, interventions are needed to newborns to ensure they receive special care	2.06	51.5	Good
17	The newborn should be evaluation if any of the signs is present: stopped feeding well, history of convulsions, fast breathing (breathing rate of ≥60 per minute), severe chest in-drawing, and no spontaneous movement.	2.04	51	Good
18	Take Apgar score **(1-5**) mint after birth	0.00	0	Poor
19	Giving vitamin K	0.00	0	Poor
20	Educate mother about essential giving BCG vaccination for newborn after birth.	0.00	0	Poor
21	Giving Hepatitis B vaccination as soon as possible after birth (within 24 hours).	2.94	73.5	Good
22	Apply prophylactic eye drops within **1** hour of birth or tetracycline ointment for newborn eyes	0.00	0	Poor
23	Taking newborn temperature.	0.00	0	Poor
24	Monitor Jaundice signs on first **24** hours after birth or pale palms or sole stained yellow	0.00	0	Poor
25	Bathing should be delayed until 24 hours after birth.	2.98	74.5	Good
26	Put tag on the baby's hand.	2.94	73.5	Good
27	Record mother name, sex of baby, date of birth on the tag	2.94	73.5	Good

M.S: Mean of score, R.S: Relative sufficiency, Ass: Assessment
M.S: Poor= 0 – 1, Fair=1.1 – 2, Good=2.1 – 3

This table presents the mean scores for items related to practices of immediate postpartum newborn's care; the mean score indicates that nurse-midwives showing poor level of practices among items 2, 5, 8, 10, 13, 18, 19, 20, 22, 23, and 24; fair level in item 12; and good level in remaining items.

Table (4)
Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Age

Variables / Age	Knowledge			Practices		
	N	Mean	SD	N	Mean	SD
≤ 19 year	1	3.00	.	1	2.00	.
20 – 29 year	20	2.80	.410	20	2.25	.444
30 – 39 year	14	2.57	.514	14	2.21	.426
40 – 49 year	10	2.90	.316	10	2.40	.516
50 ≤ year	5	2.60	.548	5	2.20	.447
Total	50	2.74	.443	50	2.26	.443
Correlation	*r = 0.097*	*p-value = 0.505*	*Sig.= N.S*	*r = 0.243*	*p-value = 0.089*	*Sig.= N.S*

N: Number, SD: Standard deviation *r*: Pearson correlation, p-value: Probability value, Sig: Significant, N.S: Not significant, S: Significant, H.S: High significant

This table reveals that there is no significant relationship among knowledge and practices with regard to nurse-midwives' age as indicated by insignificant correlation.

Table (5)
Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Qualification in Nursing

Variables / Qualification	Knowledge			Practices		
	N	Mean	SD	N	Mean	SD
Nursing secondary school	8	2.50	.535	8	2.13	.354
Midwifery secondary school	34	2.82	.387	34	2.21	.410
Nursing institute	8	2.63	.518	8	2.63	.518
Total	50	2.74	.443	50	2.26	.443
Correlation	*r = 0.053*	*p-value = 0.715*	*Sig.= N.S*	*r = 0.311*	*p-value = 0.028*	*Sig.= S*

N: Number, SD: Standard deviation *r*: Pearson correlation, p-value: Probability value, Sig: Significant, N.S: Not significant, S: Significant, H.S: High significant

This table shows that there is significant relationship between nurse-midwives' practices with their qualification of nursing institute at p-value= 0.028 while there is no evidence of significant relationship between their knowledge and qualification in nursing.

Table (6)
Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Years of Service in Hospital

Variables / Years	Knowledge			Practices		
	N	Mean	SD	N	Mean	SD
< 1 year	7	3.00	.000	7	2.14	.378
1 – 5 years	8	2.75	.463	8	2.00	.000
6 – 10 years	20	2.70	.470	20	2.35	.489
11 – 15 year	13	2.77	.439	13	2.38	.506
16 – 20 year	1	2.00	.	1	2.00	.
21 ≤ year	1	2.00	.	1	2.00	.
Total	50	2.74	.443	50	2.26	.443
Correlation	*r = 0.168*	*p-value = 0.243*	*Sig.= N.S*	*r = 0.058*	*p-value = 0.690*	*Sig.= N.S*

N: Number, SD: Standard deviation *r*: Pearson correlation, p-value: Probability value, Sig: Significant, N.S: Not significant, S: Significant, H.S: High significant

This table depicts that there is no significant relationship among nurse-midwives' knowledge and practices with regard to their years of services in hospital.

Table (7)
Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Years of Experience in Midwifery

Variables / Years	Knowledge			Practices		
	N	Mean	SD	N	Mean	SD
< 1 year	8	2.75	.463	8	2.13	.354
1 – 5 years	10	3.00	.000	10	2.00	.000
6 – 10 years	24	2.58	.504	24	2.33	.482
11 – 15 year	7	3.00	.000	7	2.57	.535
16 – 20 year	1	2.00	.	1	2.00	.
Total	50	2.74	.443	50	2.26	.443
Correlation	*r = 0.142*	*p-value = 0.320*	*Sig.= N.S*	*r = 0.094*	*p-value = 0.517*	*Sig.= N.S*

N: Number, SD: Standard deviation *r*: Pearson correlation, p-value: Probability value, Sig: Significant, N.S: Not significant, S: Significant, H.S: High significant

This table exhibits that there is no significant relationship among nurse-midwives' knowledge and practices with regard to their years of experience in midwifery.

Table (8):
Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Participation in Training Courses

Variables / Participation	Knowledge			Practices		
	N	Mean	SD	N	Mean	SD
No	7	2.86	.378	7	2.00	.000
Yes	43	2.72	.454	43	2.30	.465
Total	50	2.74	.443	50	2.26	.443
Correlation	*r = 0.142*	*p-value = 0.326*	*Sig.= N.S*	*r = 0.378*	*p-value = 0.007*	*Sig.= S*

N: Number, SD: Standard deviation *r*: Pearson correlation, p-value: Probability value, Sig: Significant, N.S: Not significant, S: Significant, H.S: High significant

This table reveals that there is significant relationship between nurse-midwives' practices with regard to their participation in training courses about assessment of immediate newborn care at p-value=0.007, while there is no significant relationship has been reported between their knowledge and participation in training courses about assessment of immediate newborn care.

Table (9)
Correlation among Nurse-Midwives' Knowledge and Practices with regard to Number of Training Courses

Variables / Number	Knowledge			Practices		
	N	Mean	SD	N	Mean	SD
None	7	2.86	.378	7	2.00	.000
1 – 5	20	2.90	.308	20	2.20	.410

6 – 10	12	2.58	.515	12	2.50	.522
11 – 15	5	2.60	.548	5	2.20	.447
16 ≤	6	2.50	.548	6	2.33	.516
Total	50	2.74	.443	50	2.26	.443
Correlation	*r = 0.237*	*p-value = 0.097*	*Sig.= N.S*	*r = 0.280*	*p-value = 0.049*	*Sig.= S*

N: Number, SD: Standard deviation *r*: Pearson correlation, p-value: Probability value, Sig: Significant, N.S: Not significant, S: Significant, H.S: High significant

This table indicates that there is significant relationship between nurse-midwives' practices with regard to number of participation in training courses (6-10 courses) at p-value=0.049, while there is no significant relationship has been reported between their knowledge and number of training courses.

Discussion of the results

Distribution of Nurse-midwives According to their Demographic Characteristics

The age of nurse-midwives is (M±SD=34±9.935) years, with 40% of them ranging into the (20-29) year age category, according to the descriptive analysis of data. Nurse-midwives who have completed midwifery secondary school account for 68 % of nurse-midwives.

The finding of the current study is consistent with the research results done by Mohammad, H. N. (2020) specified age distribution of the respondents while revealing that the highest age group is between (20 – 29) years which made up (44.7%)of the study sample.[9]

The findings of this study contrast those with the study of Mustafa D.Y; & Al – Mukhtar S. H. (2015), who found that the highest percentage of age groups is between (30 - 39) years old, with constituted (40 %) status. In regarding education, the majority of them (74%) graduated from a secondary nursing school or midwifery school[10]

While the study is in agreement with Muhammed, Z.A, & Khaleel M.A; (2020), their ages range from 26 to 30 years old, and they made up 34.9 % of the study sample. The results show that half of the study participants were graduates of a secondary midwifery school.[11]

Regarding The years of service in hospital

Refers to the average number years' service in the hospital 8.6 4±9.156 year, with 40 % of nurse-midwives having 6-10 years of experience and 26% having 11-15 years. The findings of the study are consistent with those of Hussein W.A. & Abbas I.M. (2021). The average (±SD) nursing experience of study sample was (9.55 ∓ 7), the majority (40%) of nurse – midwives ranging between (6-10) years.[12]

While disagree with the study is done by Eman W. I., et al ;(2018). The participant in the study ranging age from (1-5) years of experience. Additionally, less than

half of them had a secondary nursing education.[13] These results is disagree with the study done by Ibrahim H.A., & Abdel-Menim S.O.; (2016). who found that most ages of nurses midwifes As regards years of experience, 73.4% of nurses had more than10 years of experience in the maternity ward, with a mean 16.78±5.46 years**.** [14]

Regarding years of experience in midwifery

It refers to 7.60±6.922 year and the highest percentage is seen with 6-10 years among 48% of nurse-midwives while 20% have 1-5 years of experience and participation in training courses about postpartum care, 86% of nurse-midwives reporting they are participated in training courses, 40% of them participated in 1-5 courses and 24% participated in 6-10 courses. The participation was inside country those participated nurse-midwives (86%).

The current study supports by Nuriy L.A. M.'s (2018) findings in Erbil's City Maternity Teaching Hospital. More than half of the nurse/midwives (53.3 %) had 1–9 years of experience in the labor room, and the majority (73.3 %) had attended training courses in labor and delivery care. 60 percent of them liked working in the delivery room, but only 40 % thought they were accountable for providing complete care at all phases of labor.[15]
The current study agrees with the study done by Mohammad, H.N,& Khaleel M.A. (2019). 73 (48.7%) had a duration of one to ten years had a duration of experience in delivery room·[16]

Regarding participation in training courses about immediate postpartum care

86% of nurse-midwives that they had taken training courses, 40 % was that they had taken **1-5** courses, and 24 % said they had taken 6-10 courses. The findings of this study are consistent with the results studied of Mohammad, H.N,& Khaleel M.A. (2019 a). Who has assessment Nurse Midwives' Knowledge of Postpartum Hemorrhage Nursing Care at Al-Najaf AL-Ashraf City Hospitals. In regard of postpartum hemorrhage training, 109 nurse-midwives (40%) completed courses, 90 (33.1%) attended workshops, and 73 (26.8%) received various types of training**.**[17]

The current study is contrast with the study is done by El-Khawaga D. S., et al.; (2019). who had studied Effect of Implementation of a Teaching Program about Immediate Postpartum Care on Nurses' Knowledge and Practice. in term of duration to training courses, it was reported that three quarters (75%) of nurses didn't take any training courses. Regarding the last training courses time, 20% of the participant studied nurses have taken the last training courses since less than 5 years' duration previous training courses, and 20% of the participants have taken training courses at Ministry of Health·[18]

The participation was inside country among those participated nurse-midwives (86%). Nurse-midwives who participated in the study were from all throughout the country (86 %). While agreeing with Khudhair S.H.; (2014) who done studied of Evaluation Nurses' Practices, Neonatal Resuscitation in the Delivery Room,

(100%) of the nurses in the study took Neonatal Resuscitation in the Delivery Room training courses in their own country.[19]

Assessment of Nurse-Midwives' Knowledge about Immediate Newborn Care

This study presents the mean scores for items related to practices of newborn's care; the mean score indicates that nurse-midwives showing poor level of practices among items 2, 5, 8, 10, 13, 18, 19, 20, 22, 23, and 24; fair level in item 12; and good level in remaining items.

The findings of the study revealed that skin-to-skin contact between a mother and her newborn baby occurs immediately after birth and is critical for maintaining the newborn's body temperature was good knowledge. The findings of this study coincide with those of Sharmin T, et al; (2021). More over 62.1 % of mothers maintained their babies in skin-to-skin contact with them. In this study all the nurses (100.0%) did mention that the baby must be kept clean and warmed with dry cloth.[20]

The findings of the study coincide with those of Bayisa B.N. et al; (2018). According to a study conducted in India, 89 % of caregivers showed cleaning the infant with a dry towel and 63 % indicated placing the neonate on a warm surface. [21]

Thermal protection, which includes skin-to-skin contact, is critical for babies. It supplies warmth for the new born baby and can help prevent hypothermia problems. It was a major variable in a research on hypothermia in Addis Ababa's public hospitals by Demissie B.W., et al ;(2018). Only 47.8% of the participants in this study put the newborn baby on skin-to-skin contact after removing the wet towel[22]

In additional studies, healthcare practitioners in Tanzania, eastern Tigray, central Tigray, and Jimma kept the baby on skin-to-skin contact after removing the wet towel in 42 percent, 86.4 %, 72.1 %, and mention 62.12 %, respectively. Bereka B. , et al ; (2018). The results of the knowledge test on Apgar score points were positive at 1 and 5 minutes after birth**.**[23] The current study agrees with Bayomi S. H. ; &Nasor F. A. ; (2017), who found that midwives and nurses had a 96.3 % level of knowledge in Apgar score, but that they were not applying it was 0%.[24] While Zaveri NH,& Bala DV.;(2019) reported that 58% of nurses knew about APGAR score components, knowledge about heart rate and reflexes was found to be less than 10%.[25]

Administration of vitamin K to avoids newborn infant from abnormal hemorrhage was Fair knowledge and The special process for giving preventive drugs to the inflammation eyes of a neonate is instill the eye ointment into each of the neonate's conjunctival sacs within one hour after birth was Poor knowledge.

The findings of this study contradict those of a study conducted by Yemaneh y. & Dagnachew E. (2017), which found that 85.8% of health professionals were educated about the necessity of vitamin K, and 97.8% of healthcare professionals practiced administering vitamin K to newborn babies. When it comes to supplying

eye ointment, 99.2 % of participants in this study use TTC for newly born babies, and 95.5 % have performed it. This finding is in agreement with research from the Tigray regional state, which found that 99.3 % of the participants applied eye ointment to their newborns just after birth.[26]

Knowing that a newborn's weight after birth ranged between 2500 and 3500 g was good information. Approximately 81.6 % weighed the newborn baby by placing a clean slip of paper on the weighing scale's pan. According to a descriptive study conducted in Bahir Dar, 85.5 % of obstetric care providers weigh the infant, and an observational study conducted in Egypt, 73.9 % of obstetric care providers weigh the newborn Yemane; Y. (2016).[27]

The knowledge of nurse-midwives regarding the identification band, which is placed immediately before cutting the cord and contains registration of the mother's name, child's gender, and date on the mark or tape, was good. Negussie B.B. ,et al ;. are all wrong; (2017). Preventing early newborn infections required extensive cord care. The exact time of clamping and cutting the umbilical cord is crucial, as there is some evidence of potential benefits for the baby if the cord is not clamped and severed right after birth. Only 37.9% of study participants knew the exact timing of cord clamping, and 32.0 % and 21.7 % of study participants delayed cord clamping for all babies and some babies, respectively, according to the findings.[28]

It was poor to promote early and exclusive breastfeeding (EBF) within one hour of delivery. The findings of this study contradict those of Yemaneh y. & DagnachewE. (2017 a), who found that 97.8% of participants were knowledgeable of early breast feeding, 99.3% were knowledgeable of first milk/colostrum, and 85.1 % immediately started breast feeding the newborn baby within one hour of delivery.[29] A similar study is done by Tsegay T.; (2015) found that 97.3 % were knowledgeable of first milk/colostrum. 76.2 percent of the respondents indicated they practiced starting early breast feeding on a newborn baby. This variance could be related to the high educational level of the participants in this study. Degrees were more valuable than diplomas[30]

Assessment of Nurse-Midwives' Practices about Immediate Care for Newborn

The first few hours following the birth are the most crucial in an infant's life for continued growth and development, which is mostly decided by the newborn's quality of care.

This study presents the mean scores for items related to practices of newborn's care; the mean score indicates that nurse-midwives showing poor level of practices among items 2, 5, 8, 10, 13, 18, 19, 20, 22, 23, and 24; fair level in item 12; and good level in remaining items.

Hand hygiene was poor when in contact with a newborn baby. The findings of the study corroborate those of Buxton H, et al (2019). During labor and delivery, Health workers have been observed to have a low incidence of proper hand hygiene. HCW continue poor hand hygiene habits into the post-natal care period, according to this study.[31] In addition, agreement with Negussie B.B., et al ;

(2017). According to the survey, 13.6 % cleansed their hands before each delivery, while 48.9% did not wash at all. The study also found that less than half of the participants wore protective wear other than gloves on a regular basis.[32]

The findings of this study match those of Jamsheer K.M & Shaker N.Z.'s research (2018). In relation to quality of immediate nursing care provided to newborn babies in the MTH delivery room in terms of preparation to start receiving the new born baby, it was found that wearing gloves by nurses/midwives received the highest mean score, while hand washing, disposable gown wearing, and supplementary oxygen checking obtained the lowest mean score.[33]

The mouth and nose secretions were difficult to suction. The findings of the study contradict Ayenew A., et al; (2020) findings. In their study, 67.7% of participants kept their airways clear by cleaning their mouths and noses after the head was delivered. The practice of airway maintenance was found to be 63.9 % in the Tigray region's central zone and 67.7 % in the Ambala district, according to research. It was wonderful to clean out the airway.[34] The findings of study are in agreement with those of Esan D.T., et al.; (2020). More than half of midwives (52%) clear the newborn's airway after birth[35], contrary to the current WHO (2014) recommendation to avoid routine suctioning of newborns who start breathing on their own and only suction newborns if secretions are obviously clogging their nose and mouth.[36]

Put the newborn on the mother abdomen by skin to skin contact, Dry and covering the baby with clean towel was good. Tsegay T.'s findings are supported by the findings of this study (2015a). According to a study conducted in central Tigray, 91.8 % placed the baby on the mother's abdomen and 90.5 % removed the wet towel. The prevalence of drying the newborn baby on the mother's belly and removing the wet cloth was 91 % and 93 %, respectively, in a Tanzanian study.[37]

In the current study, the majority of midwives clean the newborn's vernix immediately after birth, which contradicts the current WHO, (2014 a) recommendation to wait at least 6 hours and up to 24 hours before cleaning the newborn's vernix because it has beneficial effects for the new born such as moisture retention (aids thermoregulation in newborns), antimicrobial effects, and it also helps baby latch on because the perfume can trigger neural connection of the baby's brachial plexus.[38]

Apply preventive eye drops or tetracycline ointment to baby eyes within 1 hour of birth, and supplement with vitamin K. was poor, Bereka B, &Hailu F, (2018 a) and others disagree with the findings of the study . This study found that 63.7 % applied eye ointment without the tip of the bottle or tube touching the baby's or object's eye, and that less than half of the participants, 48.8%, administered vitamin k intramuscularly in the anterolateral part of the thigh with an appropriate dose of vitamin k, which is 1 mg for newborns of normal weight and 0.5 mg for babies weighing less than 1500 grams. In research conducted in Egypt, 52.6 percent of participants used eye ointment, while in a study conducted in the Jimma zone, 54.8 % and 16.9 % used eye ointment and vitamin k, respectively.[39]

Jamsheer K.M. &Shaker N.Z. (2018 a). Early initiation of breastfeeding within 1 hour gives advantages for both the baby and the mother. However, all nurses and midwives in the MTH delivery room ignored this practice. Concerning levels of overall quality of immediate nursing care for newborn baby the highest percentage of the nurse's/midwives levels of the nursing care was 68.0 percent which indicated poor (inadequate) level, and the lowest percentage 32.0 percent was at good (adequate) level.[40]

Similar study of Tsegay T.; (2015b). indicates that 97.3 % have knowledge about benefits of first milk/colostrum. Among this, 76.2 % of participants practiced to start early breast feeding to newborn immediately after birth.[41]

The cord should be clamped and cut only after 1–3 minutes, unless the baby needs resuscitation was good. The finding study disagree with the finding study of by Sharmin T, et al. ;(2021 a). Clean, dry cord care is mentioned for newborns born in delivery room was fair. All had the training of tying the cord immediately after labor. All the 5 C.s need for childbirth that means clean hands, clean surface of the delivery, clean blade, clean cord and clean cord tie were known to only 33 (57%), while 21 (36%) did not know any of them. Hand washing was done by all of the participants before to conduct the delivery and sterile scissors was used for cutting the cord.[42]

The study results disagree with Ayenew A., et al. .(2020). Concerning the identification band of the newborn only 5% of the study's nurse –midwives placed the identification band on the newborn in this study.[43] The result in a study done in Bahir Dar town was 26.8%, and central Tigray region was 0.7%. The occupation of obstetric care workers is one factor for the practice of critical newborn care. Yemane Y.; (2016 a).[44]

Put tag on the baby's hand and Record mother name, sex of baby, date of birth on the tag was good. The results of this study disagree with that done by Yemaneh y. & Dagnachew E.;(2017b). Indicate that about 23.1% of provider's health care in this study were not skillful to placed newborn identification bands on the wrist and ankle of neonatal after labor. This is good than the study done in Tigray regional state, was 99.3% of participants not practiced well.[45]

The study results disagree with (Souza; 2014) The babies washed immediately after labor, 20 % had their newborn babies washed between 1-2 hours, while 2 % had their newborns washed day(s) after birth (perhaps due to the fact that their newborn babies were ill baby).the study indicates that newborn babies are well-thought-out dirty since they come from of their woman's uterus, so almost all newborns are washed within the one hour after childbirth. (Souza et al., 2014) also documented in their study that Dais leave newborns unattended to, sometimes on the floor while waiting for the placenta is delivered, then the babies are washed with warm water and soap 1-2 hours after labor, and that the hardly wipe babies with dump cloth.[46] .This suggests that the WHO ‘s (2014) recommendation, there should be delayed bathing for 4-6 hours is not being practiced. This is contrast with the best practice a birth after 24 hours because when newborn baby washed before 24 hours can cause hypothermia to newborn, decrease of immunity response and glucose decrease (WHO, 2015). Protect babies

warm in cold environments and for all newborns for at least **1** hour after birth was good.[47]

The current study is agreeing with Pindani M, etal.; (2020) Despite all the midwives (100%) documenting that presented education and counselling to postnatal some midwives never covered certain parts. containing congenital abnormalities being a hazard to the newborn baby, vaccinations and best nourishment performs. This may partly be recognized to the inadequate knowledge had possess by nurse -midwives. [48]
Apgar score (1-5) mint after birth was poor.in the present study the participant didn't check Apgar score just observe skin color and monitor breathing for newborn baby.

Persson M, et al.; (2018). Indicated that changes in Apgar scores from **1** to **5** min were related with developing vulnerability. This is in agreement with previous researches founding that changes in Apgar scores immediately after labor effect dangers of cerebral palsy and epilepsy. To the finest of our knowledge, this is the first study that surveyed risks of developmental adversity in relation to variations in Apgar scores from 1 to **5**min**.** Recent guide lines describe 'normal' Apgar scores as 7 or more at 1min and 8 or more at **5**min, representing that the newborn baby does not need help if scores are within these ranges. However, our results expose that lower scores within the normal range (7–9) and even a slight decrease in score from 10 at 1min to 9 at 5min are both accompanying with a significant increase in the danger of developmental vulnerability. Also, neonates who have low Apgar scores for persistent, or even brief periods are documented to have a greater danger of poor IQ scores at age 18, even if the infants baby get better subsequently.[49]

Regarding Instruct mother about critical giving BCG vaccination for newborn baby after delivery was poor. According to the policies in the Maternity Hospital in Holly Karbala in delivery room give vaccination about hepatitis vaccine after neonate birth but BCG vaccine, the nurse –midwives report that don't give BCG vaccine to the newborn in the delivery room. But give the vaccine to the newborn baby after one week or ten days in the primary health center care. when woman return to get the postpartum care from primary health center care.

The results study disagrees with WHO; (2015b) The timing of immunization is essential for gaining timely safety, but also for being an pointer of non-adherence. We considered a BCG immunization to be timely if it happened within the first 28 days of life, which is the standard suggested by the WHO. a amount of maternity hospitals provided a BCG vaccination together with the first dose of Hepatitis. B, which is obligatory for all maternity hospitals to provide every newborn baby after childbirth[50].

Given the vulnerability of preterm and low-birth-weight babies, interventions are required to newborn babies to certify they obtain special care was good. The study finding agree with Yu Hu. , et al; (2018). Some of this measures contain the following: measurement of the temperature, heart rate, and respiratory rate, measurement of weight, length, and head circumference. These measurements aid to conclude if a newborn's weight and measurements are usual for the

number of pregnancy weeks. Lesser or underweight newborns, as well as very big ones, may require special care and care. Concerning the study finding, nearly three quarter of nurses-midwives have good practice for evaluating newborn's weight, while more than half of them didn't measures newborn baby head circumference, length and identify the newborn[51]

Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Age

The study finding indicates that there is no significant relationship among knowledge and practices with regard to nurse-midwives' age as indicated by insignificant correlation. while disagree with nurse -midwives' knowledge. Study results of Jumaah Z.N., et al .; (2020). concern Assessment of Nurse-midwives' Knowledge, and Practice in Delivery Room at Al-Najaf City. The correlation between the study participant knowledge percentile outcomes and their demographic characteristics of age, employed years, and income have strong relationship and statistically significant in P-value≤0.05.[52]

The results of the study is agree with study done by Mustafa, D.Y. & Al–Mukhtar, S. H. (2015a). It also accomplishes that there is no significant association between the knowledge of midwives-nurses as regards mother and newborn care immediate after delivery and characteristics of socio- demographic variables Finally, there is no significant association between midwives-nurse's practice as regards mother and neonatal baby care immediate after delivery and socio-demographic characteristics.[53]

Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Qualification in Nursing

The study finding indicates that there is significant relationship between nurse-midwives' practices with their qualification of nursing institute at p-value= 0.028 while there is no evidence of significant relationship between their knowledge and qualification in nursing.

The current study is agree in practices with Jumaah Z.N., et al. ;(2020 a). regard Assessment of Nurse-midwives' Knowledge, and Practice in Delivery Room at Al-Najaf City. The correlation between the practice of study sample percentile outcomes and their demographic characteristics showed statistical significance at level of education. [54]

The current study is match with Mohammad H.N.; (2020a). Knowledge of nurse – midwives Concerning Nursing Management of Post-Partum Hemorrhage at in Iraq. No significant association had been found among overall scores of knowledge and other variables containing level of education, accommodation, type of accommodation and economic status, (in all of these variables correlation was not significant P. value = .05**).**[55]

Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Years of Service in Hospital.

According to the findings, there is no statistically significant relationship between nurse-midwives' knowledge and practices and their years of hospital service. The findings of this study corroborate those of Taha F. A. N.'s research (2016). Assessment of nurse midwives' knowledge, attitudes, and practices about newborn care. Teaching hospitals in Khartoum. When years of experience are compared to the knowledge of the study sample about neonatal care at birth, the findings demonstrate that there is no significant association between both[56]

Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Years of Experience in Midwifery

The results exhibitions that there is no significant relationship among nurse-midwives' knowledge and practices with concern to their years of experience in midwifery. about assessment of immediate newborn baby care.

Alhassan A., et al.; (2019). The findings of this study show that midwives generally lack knowledge of neonatal resuscitation. Furthermore, many midwives, regardless of how long they have been practicing as midwives, lack adequate experience in neonatal resuscitation. Prior to midwifery training, first-degree midwifery training, basic nursing training, and work experience are required.[57] The study finding disagree with Rajan D.R., et al .; (2021). In regards to the reasons associated with practice of ENC between Nurse- Midwives; work experience was significantly associated with practice of critical newborn care in which those health care workers' works less than five years were 64 % fewer likely have good practice of the essential care service of newborn.[58] This conclusion is supported by the study done in west Guji, Oromia region Ethiopia in which at work was associate with good practice of essential newborn care who have more than three years in work. Souza, J. P. et al. (2014 a).[59]

Correlation among Nurse-Midwives' Knowledge and Practices with regard to their Participation in Training Courses

The study results indicates that there is significant association between nurse-midwives' practices with regard to their participation in training courses about immediate newborn care assessments at p-value=0.007, while there is no significant relationship has been documented between their knowledge and contribution in training courses about assessment of immediate newborn care.

The current study contrast with regard nurse –midwives' knowledge that completed by Mohammad, H.N,& Khaleel M.A. (2019). The studied was assessment Nurse Midwives' Knowledge of Postpartum Hemorrhage Nursing Care at Al-Najaf AL-Ashraf City Hospitals. Regarding training, the present study establishes a significant correlation (p=0.043) between overall knowledge of nurse-midwives and getting training courses or workshops[60], this finding study disagreement with the work gained by Benedict, et al.; (2016) who found that midwives who completed the training courses named "Essential Steps in the

Management of Obstetric Emergencies" ESMOE had better knowledge and performance. [61]

The current study is agreeing with Yosef T., et al .; (2021). On-the-job training was statistically associated with good practice of ENC. Health specialists who had on-the-job training were 1.9 times more likely to who have good practice of essential newborn care[62]. This finding is supported by a comparable study conducted in Ethiopia Nigussie B.B., et al.; (2018). This relates to the possibility of updating the existing newborn care skills due to the presence of on-the-job training.[63]

Correlation among Nurse-Midwives' Knowledge and Practices with regard to Number of Training Courses

This table indicates that there is significant relationship between nurse-midwives' practices with regard to number of participation in training courses (6-10 courses) at p-value=0.049, while there is no significant relationship has been reported between their knowledge and number of training courses of essential newborn care.

The present study disagrees with Taha F.A.N.; (2016). healthcare providers who hadn't taken essential newborn care training were 3.9 times higher for the poor practice of essential newborn care than the healthcare providers who took the training. This finding is congruent with the previous studies. This can be explained by healthcare providers who took essential newborn care training or courses that can ensure the skills and knowledge to provide up-to-date evidence based information and managing for a range of needs in the initial newborn period**.**[64]

This finding is supported by a like study conducted in Ethiopia Berhea T.A. et al ., (2018).study relates to the opportunity of modernizing the existing newborn care skills due to the existence of on-the-job training**.** Having good knowledge of ENC was statistically associated with good practice. Health specialists who had good knowledge of ENC were 2.7 times more likely to have good practice of critical newborn baby care.[65]

Conclusion

The study concluded that the nurse-midwives' knowledge showing fair to good level, while they showing poor level in most of the infant postpartum care practices.

Recommendations

According to the findings of the study about nurse – midwife's knowledge and practices was fair to good level in knowledge and was fair level in most of the practices. So that the nurse –midwives need educational programs and training courses about immediate newborn care in delivery room to improve their knowledge and practices, in order to provide high-quality care immediately after birth to the newborn**.**

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