Assessment of Quality of Nursing Care Provided Immediately After Birth At University Hospital

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Abstract: The poor quality of care offered to neonates in hospital has been widely reported. The challenge is now therefore to define interventions that might improve this care. Aim. This study was designed to assess quality of nursing care provided immediately after birth for newborn and mothers, Methodology, Descriptive non participatory observational research design was utilized at OB- GYN department (Maternity unit) at University hospital in Shebin El-Kom Menoufiya University**,** through observational checklist and structured interview questionnaire with a convenient nurses in charge in delivery room were chosen by non probability purposive sampling technique. Data was entered and analyzed using SPSS-16 Descriptive statistics cross tabulation, correlation and graphs were used to illustrate the results. **Results:** The findings in this study indicate that nurses have an around average of knowledge and quality of practice regarding total score of knowledge of birth preparation, initiating attachment and breast feeding, While much still needs to be done to improve the quality of maternal and newborn care regarding responding to mothers questions, examining baby and mothers before discharge. A combination of factors in this study, inhibit the provision of quality care such as educational levels and lack of training courses that nurses received: Study, displaying the need for protocols in labor room, and post natal ward. There is no data available regarding the infection arising from the lack of care immediately after the delivery, since mothers get discharged within few hours after delivery. However efforts will be taken in future researches to assess the consequences of lack of care on neonate's outcomes.

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1. Introduction

Immediate proper care of newborn is vitally important for survival, growth and development of a newborn. Despite several studies conducted about maternal and child health care practices, little is known about factors that determine behaviours related to immediate care of newborn. Most people are unaware of importance of immediate care of newborn and many unsafe behaviour do exist such as common use of untrained attendants, unsafe cord care, immediate bathing of baby **(Gurung, 2008).**

Maintaining and improving patient care requires active involvement of everyone in health care system, in order to meet the needs for evaluating health care in its totality as well as to identify whether effective and appropriate care has been provided. The quality is "the major component of neonatal health care, and it demands participation from nurses rendering care. ***(*Dalia, 2011*).***

According to the **World Health Organization, (2010)** the majority of all neonatal deaths (75%) occur during the first week of life. Of those deaths, between 25% and 45% occur within the first 24 hours. Further, the neonatal period—which comprises of the first 28 days of life—accounts for 37% of all deaths among children under five. **Abdel-Kareem (2008).**

Each year 62,000 newborn babies die and an additional 43,000 are stillborn. Most of these babies die from preventable or treatable causes, and it is estimated that up to two-thirds could be saved if essential care reached all mothers and newborns. Maternal and newborn survival is interconnected and the most dangerous time in a child's life is during birth, as the majority of newborns die due to stressful events surrounding delivery. Newborn babies account for more than 40% of deaths amongst children under age five. The Lancet Newborn Series (**Darmstadt *et al.*, 2005**) emphasizes essential newborn care including hygienic cord care, maintenance of warmth, and immediate and exclusive breastfeeding as a means to reducing newborn deaths. All of the immediate newborn care interventions observed are simple to perform and use minimal resources.

Directly after birth there should be attention to the condition of the newborn. **The World Health Organisation (2010)** states that such attention is an integral part of care in normal birth. Immediate care involves: drying the baby with warm towels or cloths, while being placed on the mother's abdomen or in her arms. This mother-child skin-to-skin contact is

important to maintain the newborn's temperature, encourage bonding and expose the newborn to the mother's skin bacteria. Ensuring that the airway is clear, removing mucus and other material from the mouth, nose and throat with a suction pump. Taking measures to maintain body temperature, to ensure no metabolic problems associated with exposure to the cold arise. Clamping and cutting the umbilical cord with sterile instruments, thoroughly decontaminated by sterilisation. This is of utmost importance for the prevention of infections. A few drops of silver nitrate solution or an antibiotic is usually placed into the eyes to prevent infection from any harmful organisms that the newborn may have had contact with during delivery (e.g. maternal STDs).Vitamin K is also administered to prevent haemorrhagic disease of the newborn .The newborn's overall condition is recorded at 1 minute and at 5 minutes after birth using the Apgar Scale. Putting the newborn to the breast as early as possible. Early suckling/breast-feeding should be encouraged, within the first hour after birth. About 6 hours or so after birth, the newborn is bathed, but the vernix caseosa (whitish greasy material that covers most of the newborn's skin) is tried to be preserved, as it helps protect against infection **(Hon, 2002).**

The health care professional in general and nurses in particular play a vital role to ensure that the new born has best possible beginning of life and the nurse must be aware of the potential problems and be alert to the infant's changing condition and to intervene appropriately when necessary. The nurse is the first health care provider who has direct contact with the neonate during birth. Hence nurses require the knowledge and skill to take care of the babies keeping in mind the basic principles so that many complications can be prevented. All staff involved with the clinical care of the newborn immediately following delivery are must be competent in newborn life support and neonatal resuscitation. Consultant obstetrician-led maternity services ensure that a, professional who is competent in advanced newborn airway skills is immediately available (within five minutes). All staff has undertaken training appropriate to their role, supporting mothers to feed their infant appropriately and promote the use of breast milk and breastfeeding, preparation of babies and families for discharge, supporting families in acquiring the knowledge and skills they will need to care for their baby at home, assessing developmental needs, providing emotional and psychological support to families, safeguarding children and supporting families during bereavement (**Royal College of Speech and Language Therapists, 2006**; **Health Professions Council, 2007** and *High Quality Care For All – NHS Next Stage Review Final Report* (**DH, 2008**)

According to (**Lhynnelli, 2011**), APGAR Scoring System was developed by Dr. Virginia Apgar as a method of assessing the newborn's adjustment to extra uterine life. It is taken at one and five minutes after birth. With depressed infants, repeat the scoring every five minutes as needed. The one minute score indicates the necessity for resuscitation. The five minute score is more reliable in predicting mortality and neurological deficits. The most important is the heart rate, and then the respiratory rate, the muscle tone, reflex irritability and colour follows in decreasing order. A heart rate below 100 signifies an asphyxiated newborn and a heart rate above 160 signifies distress.

Nurses have an important, enabling role to help the woman during childbirth. There must be a high percentage of interpersonal skills in the care of the woman in addition to being technically competent. Also, Evaluation is one of the most critical phases of the nursing process because it supports the basis of the usefulness and effectiveness of nursing practice.

In addition, it is known that nursing services are the backbone of the healthcare system in almost all countries in the world. They represent between 60-70% of the health personnel So, It is thus important that we assess quality of nursing care we offer in order to improve on it. Also, was found that there is a relationship between quality of care and performance of nurses in the delivery room and several hours later on at neonatal unit (**Abdel-Kareem,2008**).

Therefore, it is important to assess the nurse's performance in the delivery room based on a group of standards of care which are documented and developed by standard care.

So it important to have a well-trained nurse to provide proper immediate care for the newborn and prevent any complication to be arises.

Significant of the study:

Nurses will never know the quality of care they offer until it is being assessed. This study measures quality of care provides, will provide a means of evaluating the care and will provide suggesting recommendations for its improvement.

Aim of the study:

This study was designed to assess quality of nursing care provided immediately after birth for newborn and mothers.

Research questions:

1. Are the nurses having a poor knowledge or practice regarding immediate care of the newborn?
2. Are the nurses having a poor quality of care regarding immediate care of the newborn?

3. What is the current level of standards of quality care provided immediately after birth and up to discharge for mothers and neonatal?

2. Methodology:

Research design:

Descriptive non participatory observational research design was utilized to achieve the aim of the study

Setting:

The study was conducted in OB-GYN department (Maternity unit) at University hospital in Shebin El Kom - Minoufiya

Sample and sampling technique

Non probability purposive sampling technique was utilized. Twenty three (23) nurses was observed during they provide an immediate newborn care and after 2 hours from delivery and interviewed later.

In this study, the quality achieved is evaluated by comparing what was actually achieved with the targets set criteria for quality of care must be provided. The nurses' application manner, a comprehensive overview can be provided for the newborn.

Inclusion criteria:

Each nurse working in OB-GYN department at Maternity unit (which includes settings for normal delivery and C- section) and provide immediate care of the newborn

Sample included, neonates born within 37 to 42 weeks of gestation, through vaginal delivery (including low forceps and suction cups), weighing 2.5 to 3.8 kg, with Apgar score of 9 and 10 at 1 and 5 minutes.

Exclusion criteria:

Any nurse working in OB-GYN department at Maternity unit but not participating neither in delivery unit work nor providing immediate care of the newborn. Also,neonates with prematurely, birth asphyxia and congenital malformation and babies born to high risk mothers such as who had pregnancy induced hypertension, heart disease, ante-partum hemorrhage, diabetes mellitus, jaundice, and anemia.

Data collection tools:

Two tools were used in this study, namely structured interview questionnaire and an observational checklist. These tools were used to collect data from each study subject in the study settings.

Tool I

Part I

It includes, biosocial data of nurses like age, years of experience, levels of education and marital status

Part II

Structured interview questionnaire:

It consists of 40 items contains questions related to nurses knowledge about the immediate newborn care with multiple form of qualitative and quantitative data, some questions responded by yes or no, with score one or zero, other questions were a multiple choices or open end questions. Every question was rated as poor, fair or good knowledge according to its content items, then the total score was calculated from 40 degree and classified into good knowledge (30-40) fair knowledge (29-20) and poor knowledge $\geq$20.

The tool was developed by the researchers, and tested for content validity and reliability by a jury of 3 experts in the field of specialization.

Tool II

Observational check list:

It formulated on the basis of standard intervention to be performed by the health personal Standards of Performance of the Immediate Neonatal Nurses Care. It was prepared using *Neonatal Nursing: Scope and Standards of Practice*, published by the American Nurses Association (ANA) consists of different tasks that are to be performed immediately after delivery checked by done fair, done poor or not done. The total quality score was calculated by converting score into percentage % of performed care as follows.

Done good < 75%, done fair 74-51% and done poor < 50% .

Pilot study:

A pilot study was conducted to test the applicability of the tools, and to estimate the time needed. It was carried out on 5 nurses. The results of the pilot study helped in refining the interview questionnaire and the observational checklist to set the final form of it.

Development of the tool:-

Validity:-

Content validity of the questionnaire sheet was determined through an extensive review of literature about the immediate care of the newborn. Modification to the tools were made according to the panels' judgment on clarity of sentences, appropriateness of content, sequence of items, and accuracy of scoring and recording of items (content validity)

Reliability:

Reliability analysis was used to determine the extent to which the items in the questionnaire are related to each other. Results of the pilot study were also used to confirm reliability (test-retest reliability). Cronbach's co-efficiency alpha for the questionnaire was 97. Pearson correlation co-efficiency indicated high internal consistency, which was 78,38 for all items of the questionnaire. The findings from validity

and reliability suggested that the current questionnaire and observational check list could be used as a viable tool for data collection in this study.

Human Rights and ethical consideration:

Before starting any steps in the study, official letter was issued from the faculty of nursing to the director of the hospital. The letter explained the aim of the study, clarified its procedures, and sought permissions to conduct it in this setting. Before inclusion in the sample, each nurse was observed for conducting the study 2 times without her consent and checking her application for the second time. Then her consent was assured oral and written to be participated in the study. The investigators approached each of them by giving an overview of the study, clarifying that participation was voluntary, total confidentiality of the obtained information, as well as respect of the subject privacy was ensured. Finally Health education and professional help was provided in case of need.

Procedure:

Field work was done three days per week to collect the data. Three to five cases were recruited per day.

Statistical Analysis:

After completing of the field work, data were processed, extensively reviewed. Each answer sheet was coded and scored, So that data could be prepared for computer use. Data were statistically analyzed using SPSS Version 16.0 statistical software packages. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and cross tabulation variables. Test of significance was used and level of significance is $P < 0.05$, is used if P value is less than 0.01, it was highly significance if P value is < 0.001.

Limitations of the study:

Small number of nurses participated the study was studues.

3. Result:

To identify practices regarding immediate care of newborn, information were collected related to wiping , cleaning and placing of newborns at birth; material used for cord cutting, stump care, bathing, constraints regarding immediate care of newborn and suggestion to promote modern practices.

Table (1) Distribution of biosocial characteristics of studied nurses" The mean age were 26.18±6.1, more than half of them (57.1%) were have diploma education, (66.6%) of them were married. and about half of them (48.2%) have 1 – 5 years of experience However, there were a significance difference (P <0.05) between their marital status versus to their age, levels of education, and years of experience ($P > 0.05$)

Table (2) Showed nurses knowledge related to birth preparation. More than half of nurses 60.9% didn't get any courses about delivery. However from their experience majority of them has a good knowledge to prepare labor (91.3%) or cesarean (78.4%) equipment as well as more than half of them (60.9%) have a good knowledge for preparing mothers for birth. So, there were a significance difference ($P<0.001$) for most of items of nurses knowledge to prepare mothers for birth.

Table (3) Nurses knowledge about care provided for mother and newborn care immediately after birth. Good and poor nurses knowledge about immediate care were nearly distributed (43,5% &47.8%). Also, more than half of them (56,5%) respond poorly to mothers questions and majority of them were have poor knowledge regarding care provided for mothers and neonates before discharge. However the total knowledge score was good for less than half of them (48.2%). So, there were insignificance difference ($P >0.05$) for their knowledge about immediate care provided for mothers and newborn care.

Table (4) Relationship between nurses' knowledge and their practice of immediate neonatal care. More than half of nurses (52.6%) have a good knowledge and practice for hand washing, prepare labor equipment ,receive the baby and clean the airway, apply Apgar score, clump, sterile the cord, as well as put eye drop to the neonate. Unfortunately majority and/or more than half of them (69,5%,52,2%,56.2%, &60,9%) were didn't administer Vitamin K to the baby, didn't examine or observe the body of the baby or their genitalia. However, there were no significance difference ($P>0.05$) between nurses knowledge and their practice for immediate neonatal car

Table (5): represent relationship between nurses' knowledge and their practice for newborn and their mothers care. Approximately three quarter of nurses have good practice for measuring baby weight, while more than half of them(52,2%,66.2%,56.5 and ,52,2) didn't measures newborn head circumference, length, identify the baby or respond to mothers questions appropriately. Also, 69.5% of them didn't prepare the newborn or their mother for discharge. On the other hand more or less than (40%) of nurses have a good knowledge about newborn and mother care after birth. However there is no significance difference $P > 0.05$ between nurses' knowledge and practices regarding newborn and mother care after birth.

Table(6) Correlation between nurses' education and years of experience to their knowledge of immediate care, total knowledge score, and responses to mother questions. There were a significance relationship between nurses education and their knowledge of immediate newborn care, total

knowledge score as well as responses to mothers questions, while a negative correlation were found regarding to their years of experience.

Figure (1) represent quality control chart for nurses knowledge of immediate care. It represented that however nurses have a good knowledge but they didn't catch the maximum quality for their knowledge, the greater number of them were around the average.

Figure (2) represent quality control chart for nurses' skills of immediate care. It represented that nurses didn't catch the maximum quality for their skills, the greater number of them were around the average

Figure (3) illustrated quality of control for nurses' total knowledge with their years of experience. It is obvious that the total quality of nurses' knowledge increased with their years of experience.

Table (1) Biosocial characteristics of studied nurses at University hospital

Biosocial characteristics of studied sample	Number of studied sample		X^2
	No=21	%	
Nurses age			
>20	4	19.0	.6674
21-25	4	19.0	*P*=.955
26-30	7	23.8	
31-35	5	23.8	
36-40	3	14.3	
X and ±SD	26.18± 6,1		
Levels of education			4.261
Diploma	14	57.1	*P* =.119
Specialty	4	19.0	
Baccalaureate	5	23.8	
Marital status			14.174
Single	5	23.8	*P* <0.001
Married	16	66.7	
Divorced	2	9.5	
Years of experience			10.348
1-5	11	48.2	*P* =.858
6-10	5	21.7	
11-16	5	21.7	
17-21	1	4.3	
22-30	1	4.3	
Pleasure from carrier			**X^2=5.261**
Yes	17	73.2	*P* =.022
No	6	26.8	
Total	23	100.0	

Table (2) Nurses knowledge related to birth preparation

Birth preparation	No N=23	%	X^2
Getting birth training course			
Yes	9	39.1	X^2 = 4.261
No	14	60.9	*P* =.119
Number of training courses			
Non	13	56.5	
one	7	30.4	**X^2=15.783**
Two	2	8.6	***P* =001**
Three	1	4.3	
Prepare labor equipment			
Poor	1	4.3	**X^2=37.783**
Fair	1	4.3	***P* =000**
Good	21	91.3	
Prepare caesarian section equipment			
Poor	3	13.0	**X^2=48.957**
Fair	2	8.6	***P* = ooo**
Good	18	78.4	
Birth Preparation knowledge			
Poor	6	26.8	**X^2=27.826**
Fair	3	13.0	***P* =004**
Good	14	60.9	
Total	23	100.0	

Table (3) Nurses knowledge about care provided for mother and newborn care immediately after birth

Nurses knowledge of immediate care of newborn	No N=23	%	X^2
Knowledge of immediate care			
Poor	11	47.8	**X^2=19.3o4**
Fair	2	8.6	*P* =.004
Good	10	43.5	
Breast feeding initiation			**X^2=5.304**
After half an hour	12	52.2	*P* =.070
After one hour	8	34.8	
After two hours	3	13.0	
Neonates attachment			**X^2= 8.997**
Put baby with his mother	12	52.2	*P* =011
Put baby in the incubator	10	43.5	
Put the baby in the nursery	1	4.3	
Responses to mothers questions			**X^2=4.087**
Poor responses	13	56.5	
Good responses	10	43.5	*P* =.665
Knowledge of newborn examination before discharge			
Poor knowledge	18	78.3	**X^2=4.652**
Good knowledge	5	21.7	*P* =.199
Knowledge of mothers examination before discharge			**X^2=5.696**
Poor knowledge	19	82.6	*P* =.127
Good knowledge	4	17.4	
Total knowledge Score			**X^2=11.565**
Poor	3	13.4	*P* =..641
Fair	9	39.2	
Good	11	48.2	
X and SD total knowledge	30.2 ± 8.3		
Total	23	100.0	

Table (4) Relationship between nurses knowledge and their practice of immediate neonatal care

Nurses practice of immediate care	Total knowledge Score						Total		
	Poor		Fair		Good		N0	%	
	No	%	No	%	No	%			
Hand washing									
Done poor	2	8.6	1	4.3	4	17.4	7	30.4	**41.394** ns
Done fair	4	17.3	2	8.6	5	21.8	11	48.2	
Done good	0	0.0	2	8.6	3	13. 4	5	21.8	0497
Total	6	26.8	5	21.7	12	52.6	23	100.0	
Prepare Labor equipment									28.146
Done poor	0	0.0	4	17.3	2	8.6	6	26.8	0547
Done fair	1	4.3	2	8.6	3	13.04	6	26.8	
Done good	1	4.3	2	8.6	8	34.8	11	48.2	
Total	2	8.6	8	34.8	13	56.5	23	100.0	16.073
Receive the baby and clean the airway									.309
Done fair									
Done good	0	0.0	5	21.8	2	8.6	7	30.4	
	3	13. 4	2	8.6	11	48.2	16	69.5	
Total	3	13.4	7	30.4	13	56.5	23	100.0	50.507
Take Apgar Score									.173
Done poor	2	8.6	3	13.0	6	26.8	11	47.8	
Done fair	0	0.0	1	4.3	0	0.0	1	4.3	
Done good	1	4.3	3	13. 4	7	30.	11	47.8	
Total	3	13.4	7	30.4	13	56.5	23	100.0	
Clump, sterilize and dress the umbilical cord									24.495
Done poor									.655
Done fair	0	0.0	3	13.0	2	8.6	5	21.8	
Done good	0	0.0	1	4.3	2	8.6	3	13.04	
	2	8.6	5	21.8	9	39.2	16	69.5	
Total	2	8.6	9	39.2	13	56.5	23	100.0	
Put eye drop to the baby									
Not done	9	39.2	0	0.0	0	0.0	9	39.2	38.759
Done fair	0	0.0	1	4.3	2	8.6	3	13. 4	.614
Done good	0	0.0	1	4.3	10	43.4	11	48.2	
Total	9	39.2	2	8.6	12	52.5	23	100.0	21.487
Administer Vit. K									.805
Not done	7	30.4	5	21.8	4	17.3	16	69.5	
Done good	3	13. 4	2	8.6	2	8.6	7	30.4	
Total	10	43.4	7	30.0	6	26,8	23	100.0	39.819
Examine head and chest									
Not done	6	26.8	3	13. 4	4	17.3	12	52.2	
Done good	5	21.8	4	17.3	1	4.3	13	56.5	
Total	11	48.2	7	30.0	5	21.7	23	100.0	45.936
Examine hip and back									.312
Not done	7	30.4	2	8.6	4	17.3	13	56.5	
Done good	8	34.8	1	8.6	1	8.6	12	52.2	
Total	15	65.2	3	13.4	5	21.8	23	100.0	39.461
Examine genitalia									.583
Not done	3	13. 4	3	13. 4	8	34.8	14	60.9	
Done good	2	8.6	2	8.6	5	21.8	9	39.2	
Total	5	65.2	5	65.2	13	56.5	23	100.0	

Nurses practice of care after birth	Total knowledge Score						Total		X^2
	Poor		Fair		Good		N0	%	
Measuring weight									
Done fair	2	0.0	1	4.3	1	4.3	4	17.3	43.723
Done good	9	39.1	4	17.3	4	17.3	17	73.9	.398

Not done	0	0.0	1	4.3	1	4.3	2	8.6	
Total	11	47.8	6	26.8	6	26.8	23	100.0	
Measuring head circumference									41.802
Done fair	0	0.0	2	6.8	2	8.6	4	17.3	.480
Done good	1	4.3	5	21.7	1	4.3	7	30.4	
Not done	2	8.6	2	8.6	8	34.8	12	52..2	
Total	3	13.4	9	39.2	11	47.8	23	100.0	50.835
Measuring length									
Done fair	0	0.0	3	4.3	1	4.3	2	8.6	.165
Done good	1	4.3	5	21.7	2	8.6	8	34.8	
Not done	2	8.6	5	21.7	5	34.8	15	66.2	
Total	3	13.4	13	56.5	8	34.8	23	100.0	
Baby identification									37.257
Done fair	0	0.0	2	8.6	4	17.4	6	26.2	.679
Done good	0	0.0	2	8.6	2	8.6	4	17.3	
Not done	3	13.04	4	17.3	6	26.8	13	56.5	
Total	3	13.4	8	34.8	12	52.5	23	100.0	1.023
Responses to mother questions									.051
Done fair									
Done good	4	17.3	6	26.8	2	8.6	13	56.5	
	1	4.3	4	17.3	6	26.8	11	48.2	
Total	5	21.7	10	43.4	8	34.8	23	100.0	39.586
Prepare newborn for discharge									.577
Done fair									
Done good	4	17.3	7	30.4	5	21.7	16	69.5	
	1	4.3	1	4.3	5	21.7	7	30.4	
Total	5	21.7	8	34.8	10	43.4	23	100.0	37.107
Prepare mother for discharge									.005
Done fair									
Done good	3	13. 4	9	39.2	4	17.3	16	69.5	
	0	0.0	0	0.0	7	30.4	7	30.4	
Total	3	13. 4	9	39.2	11	47.8	23	100.0	

Table (5); Relationship between nurses knowledge and their practice for newborn and mothers care after birth

Nurses practice of care after birth	Total knowledge Score						Total		X^2
	Poor		Fair		Good		0	b	
Measuring weight									
Done fair	2	0.0	1	4.3	1	4.3	4	17.3	723
Done good	9	39.1	4	17.3	4	17.3	17	73.9	08
Not done	0	0.0	1	4.3	1	4.3	2	8.6	
Total	11	47.8	6	26.8	6	26.8	23	100.0	
Measuring head circumference									41.802
Done fair	0	0.0	2	6.8	2	8.6	4	17.3	.480
Done good	1	4.3	5	21.7	1	4.3	7	30.4	
Not done	2	8.6	2	8.6	8	34.8	12	52..2	
Total	3	13.4	9	39.2	11	47.8	23	100.0	
Measuring length									
Done fair	0	0.0	3	4.3	1	4.3	2	8.6	
Done good	1	4.3	5	21.7	2	8.6	8	34.8	
Not done	2	8.6	5	21.7	5	34.8	15	66.2	
Total	3	13.4	13	56.5	8	34.8	23	100.0	
Baby identification									37.257
Done fair	0	0.0	2	8.6	4	17.4	6	26.2	.679
Done good	0	0.0	2	8.6	2	8.6	4	17.3	
Not done	3	13.04	4	17.3	6	26.8	13	56.5	
Total	3	13.4	8	34.8	12	52.5	23	100.0	1.023
Responses to mother questions									.051
Done fair									
Done good	4	17.3	6	26.8	2	8.6	13	56.5	
	1	4.3	4	17.3	6	26.8	11	48.2	
Total	5	21.7	10	43.4	8	34.8	23	100.0	39.586
Prepare newborn for discharge									.577
Done fair	4	17.3	7	30.4	5	21.7	16	69.5	
Done good	1	4.3	1	4.3	5	21.7	7	30.4	
Total	5	21.7	8	34.8	10	43.4	23	100.0	37.107
Prepare mother for discharge									.005
Done fair	3	13. 4	9	39.2	4	17.3	16	69.5	
Done good	0	0.0	0	0.0	7	30.4	7	30.4	
	3	13. 4	9	39.2	11	47.8	23	100.0	

NB ^{ns} $P \geq 0.05$ * $P \leq 0.05$ ** $P \leq 0.001$

Table (6) Correlation between nurses education and years of experience to their knowledge of immediate care, total knowledge score, and responses to mother questions

Correlations

Co relational items		knowledge of immediate care	Response to mothers questions	Total knowledge score	Years of experience	Nurses education
knowledge of immediate care	Pearson Correlation	1	.467*	.307	.336	.478*
	Sig. (2-tailed)		.025	.155	.117	.021
Response to mothers questions	Pearson Correlation	.467*	1	.415*	-.004-	.459*
	Sig. (2-tailed)	.025		.049	.985	.028
Total knowledge score	Pearson Correlation	.307	.415*	1	-.191-	.284
	Sig. (2-tailed)	.155	.049		.383	.189
Years of experience	Pearson Correlation	.336	-.004-	-.191-	1	.311
	Sig. (2-tailed)	.117	.985	.383		.149
Nurses education	Pearson Correlation	.478*	.459*	.284	.311	1
	Sig. (2-tailed)	.021	.028	.189	.149	

*. Correlation is significant at the 0.05 level (2-tailed).

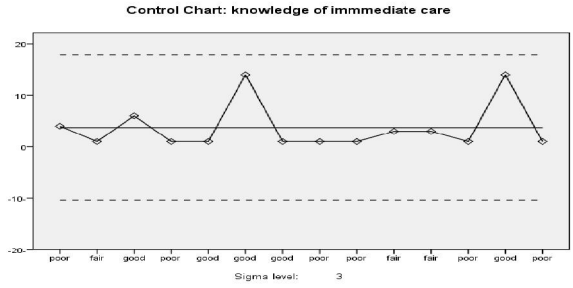


Figure (1) represent quality control chart for nurses knokwledge of immediate care

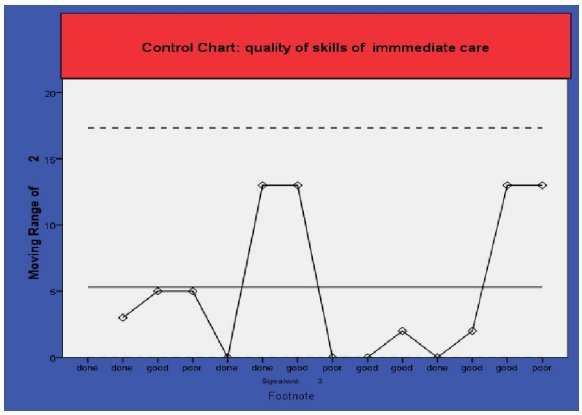
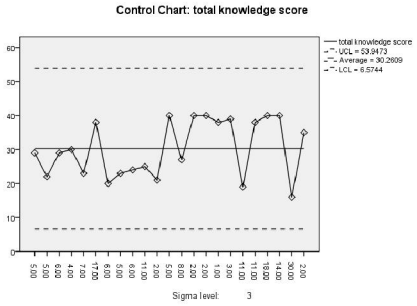


Figure (2) represent quality control chart for nurses' skills of immediate care



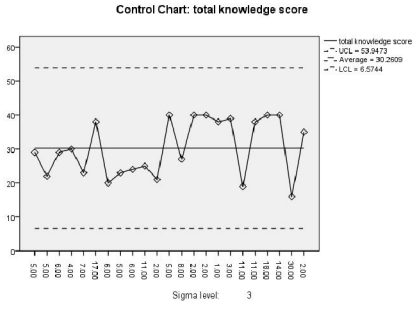


Figure (3) quality of care for nurses' total knowledge with their years of experience

4. Discussion:

Birth is a major challenge for the newborn to negotiate successfully from intrauterine to extra uterine life. The first few hours since birth is the most crucial period in the life of an infant for further growth and development ,which is largely determined by the quality of care that the newborn receives

(Mangala and Bpkihs, 2009). The poor quality of care offered immediately after birth in many hospitals has been widely reported. The challenge is now therefore to define interventions that might improve nurses' knowledge and practice to improve their performance (**Mike, etal, 2009).**

The purpose of this study was to determine the quality of care provided by the nursing personnel in the selected aspects of care to the newborn babies from birth to two hours of age in the labour room and up to discharge. Adaptation of newborn baby to extra uterine life to a large extent is determined by the quality of care that he or she receives immediately after birth. The overall quality of knowledge and practices presented that nurses have a good quality of care in relation to birth preparation, (60,9%), preparing equipment for normal and cesarean, receiving the baby delivery (91,3%& 78,4%) and taking Apgar Score and clumping the umbilical cord (56.5%). During the birth of a newborn and immediately after delivery, if proper measures are not taken to establish and maintain an open airway, the newborn may aspirate. Prolonged exposure, keeping wet for long time with amniotic fluid and improper drying and wrapping may result in hypothermia and metabolic problems by cold stress. In addition only more than half of nurses (52,5%) highly skilled and knowledgeable about the importance of hand washing This results was consistent with Shrestha et al, (2009) who found that tasks regarding washing and drying hands before receiving the baby was found poor for 76% of the babies. Even though almost all staff (99.9%) were wearing the gloves only 24% staff were wearing gown before receiving the newborn babies. So, quality of care provided in relation to the prevention of infection was average in more than half of nurses. Lack of proper hand washing before and after handling the baby and lack of proper aseptic techniques lead to infection and so the hospital stay will be prolonged which increases economical as well as psychological effects on the parents and hospital expenditure

(Gurung, 2008), mentioned that several studies have been conducted in Nepal collecting information on maternal and child health care practices. However, very few studies have been done specifically in the area of newborn care practices. Among a few study conducted, a hospital based study showed that birth asphyxia, low birth weight, hypothermia and infection were most common causes of neonatal death and most could be reduced by better care during delivery and after birth. Newborn care start before birth and among different stages of care, immediate care of newborn is equally important for newborn survival. With proper immediate care, newborn life can be saved form untimely death due to the different causes

(Gurung, 2008) also mentioned that practices regarding newborn care are largely governed by various factors such as knowledge of caretaker, traditional beliefs and practices, socio-economic status of family, accessibility of health services and handling by trained birth attendants. From this concept, the total knowledge score was good in about half of the nurses (47,9%) as well as the biosocial characteristics of studied nurses reflected that more than half of them were have diploma in nursing education and have 1 – 5 years of experience. The study revealed also a significance relationship between nurses' education and their knowledge of immediate newborn care which affecting in the total quality of care provided for neonates and their mothers.

According to the current study, which obtained the relationship between nurses' knowledge and their practice of immediate care of the newborn. More than half of nurses have a good knowledge and practice for hand washing, prepare labour equipment, receive the neonate and clean the airway, apply Apgar score, clump, sterile the cord, as well as put eye drop to the neonate.This is in consistent with the Military Obstetrics and Gynaecology, 2009; which indicated that newborns, during the first few hours of life, have some difficulty maintaining their body heat and may develop hypothermia if not attended to carefully. During receiving the newborns replaces the wet towels; because the newborns can lose a tremendous amount of heat very quickly, particularly if they are wet. By removing the wet towels and replacing them with dry towels, it will reduce this heat loss.

As regard to clean the airway, the study is in concurrent with (Children's Hospital and Health System (2012) which reported that some newborns have excess amounts of fluid in their lungs. Stimulating the newborn to cry by massage and stroking the skin can help bring the fluid up where it can be suctioned from the nose and mouth. (Military Obstetrics and Gynaecology, 2009) added the importance of head pposition of the newborn, newborn should be kept on their backs or tilted to the side, but not on their stomachs. The orientation of the head relative to the body is important for breathing. In adults, this orientation is not usually crucial; adults tolerate a relatively wide range of head positioning without compromising their airway. Not so with newborns that have a relatively narrow range of head positioning that will permit air to move unimpeded through the trachea. The optimal position for the baby is with the head neither markedly flexed against the chest, nor extended with the chin up in the air. Instead, the head should be in a "military" attitude,

looking straight up. Position the newborn on its' back with the head looking straight up. This will usually provide for good airflow. If there is any airway obstruction, make small adjustments to the head position to try to straighten the trachea and eliminate the obstruction (Lhynnelli, 2011).

As mentioned, more than half of nurses who participated in the current study, have a good knowledge and practice for applying Apgar score, clump, sterile the cord, as well as put eye drop to the neonate. This is similarly in agreement with (Lhynnelli,2011) who highlighted that, it is part of the routine care of the newborn to give prophylactic eye treatment against gonorrhea conjunctivitis or opthalmia neonatorum. Neisseria gonorrhea, the causative agent, may be passed on the fetus from the vaginal canal during delivery. This practice was introduced by Crede, a German gynaecologist in 1984. Silver nitrate, erythromycin and tetracycline ophthalmic ointments are the drugs used for this purpose. These ointments are the ones commonly used now a days for eye prophylaxis because they do not cause eye irritation and are more effective against Chlamydial conjunctivitis. Apply over lower lids of both eyes, then, manipulate eyelids to spread medication over the eyes. (Lhynnelli, 2011) also emphasized the importance of administration of Vitamin K, because the newborn has a sterile intestine at birth; hence, the newborn does not possess the intestinal bacteria that manufacture vitamin K which is necessary for the formation of clotting factors. This makes the newborn prone to bleeding. As a preventive measure, 0.5 (preterm) and 1 mg (full term) Vitamin K or aquamephyton is injected IM in the newborn's vastus lateralis muscle. Unfortunately majority of the study sample were didn't administer Vitamin K to the newborns, didn't examine or observe their bodies or their genitalia. This also in contrast with (Children's Hospital and Health System, 2012) which describe the physical examination of the newborn in the delivery room; as a brief, it performed to check for obvious signs that the newborn is healthy. Other necessary procedures will be done over the next few minutes and hours. These may be done in the delivery room or in the nursery, depending on hospital policy and the condition of the newborn. Some of these procedures include the following: measurement of the temperature, heart rate, and respiratory rate, measurement of weight, length, and head circumference. These measurements help determine if a newborn's weight and measurements are normal for the number of weeks of pregnancy. Small or underweight newborns, as well as very large ones, may need special attention and care. Regarding the study results, approximately three quarter of nurses have good practice for measuring newborn's weight, while more than half of them didn't measures newborn head circumference, length and identify the newborn.

Another positive finding of this study is that, quality of care was good for almost more than half of nurses in promoting attachment and initiating breast feeding from the first half an hour from delivery of the babies which reflected the importance of promoting intimate relationship between mothers and baby among nurses. This results was consistent with Shrestha (2009) who mentioned that over all care in relation to the initiation of breast feeding soon after delivery was average (76.9%). Informing the mother to initiate breast-feeding was found to be good (85%). These findings are not consistent with the study findings of Malar who reported that the implementations of the Baby friendly initiative policies were poor in the maternity wards of Mangala, and Bpkihs (2009). Invariably numerous literatures as Awasthi et al,.(1991), and Reeder *et al.* (1992), strongly advocate breast feeding because of its health benefits of the child as well as the mother herself, and also for the advantages of the bonding which it facilitates. These findings emphasize the need for developing protocol and checklist, which will include all-important essential newborn care.

According to (Ladewig *et al.,* 2006 & Mellisa, 2006)The postpartum period is a time of readjustment and adaptation for the entire childbearing family, but especially for the mother. The woman experiences a variety of responses as the mother adjusts to a new family member. Maternal role attainment is the process by which a woman learns mothering behaviors and becomes comfortable with her identity as a mother. Mothers are the primary caregivers of newborns. Thus, any factors that impact mothering affect the newborn and have public health significance. Mercer (1995) in (Ladewig *et al.,* 2006) mentioned that maternal role attainment often occurs in four stages: The anticipatory stage; which occurs during pregnancy. The woman looks to role models, especially her own mother, for examples of how to be a mother. The formal stage; begins when the newborn is born. The woman is still influenced by the guidance of others and tries to act as she believes others expect her to act. The informal stage; begins when the mother begins to make her own choices about mothering. She begins to develop her own style of mothering and finds ways of functioning that work well for her. The personal stage; is the final stage of maternal role attainment. When the mother reaches this stage, she is comfortable with the nobtion of herself as a mother (Ladewig *et al.,* 2006). Unfortunately The existing study reflected that more than half of the nurses respond poorly to mother's questions and majority of them were have poor

knowledge regarding care provided for mothers and newborns before discharge. Also, the majority of them didn't prepare the newborn or their mother for discharge. This is in contrast with (Lhynnelli, 2011) that provides Instructions to the mother especially on cord care; no tub bathing until cord falls off. Do not sponge bath to clean the newborn. That cord does not get wet by water or urine. Do not apply anything on the cord such as powder or antibiotic, except the prescribed antiseptic solution which is 70% alcohol. Avoid wetting the cord. Fold diaper below, it does not cover the cord and does not get wet when the diaper soaks with urine. Leave cord exposed to air. Do not apply dressing or abdominal binder over it. The cord dries and separates more rapidly if it is exposed to air. If notice bleeding from the cord, apply firm pressure and check cord clamp if loose and fasten. Report any unusual signs and symptoms of infection. Foul odor in the cord, presence of discharge, redness around the cord, the cord remains wet and does not fall off within 7 to 10 days and or newborn fever.

In addition to, Quality of care in examining newborn or their mothers were poor among (78,3% & 82,7%) of nurses in terms of physical assessment of head, back, extremities, genitalia, measuring length and head circumference as well as examining mothers for her, general condition, bleeding etc.. which reflect needs of those nurses for in-service program to fulfills those deficiency to reach the maximum quality of care provided to all neonates and their mothers, this is in contrast to the finding of Shrestha (2009) Study highlight fact that quality of care was good in areas such as initiation of breathing and physical assessment of newborn care was found to be good by (90%) of nurses. These findings emphasis the need for developing protocol and checklist, which will include all-important essential newborn care to be followed by the nurses.

Conclusion

The findings in this study indicate that nurses have an around average of knowledge and quality of practice regarding total score of knowledge of birth preparation, initiating attachment and breast feeding, While much still needs to be done to improve the quality of maternal and newborn care regarding responding to mothers questions, examining baby and mothers before discharge. A combination of factors in this study, inhibit the provision of quality care such as educational levels and lack of training courses that nurses received: Study, displaying the protocols in labor room, and post natal ward. There is no data available regarding the infection arising from the lack of care immediately after the delivery, since mothers get discharged within few hours after delivery. However efforts will be taken in future researches to assess the consequences of lack of care on neonates' outcomes.

Recommendation

Based on the results of this study, it recommended the following:

Raising the awareness of nurses in delivery unit and nursery about the efficient examination of the newborns and mothers after delivery up to discharge.

Management

- Hospital management should develop standards of quality care and procedures in the form of a manual to be available in delivery and neonatal units to all staff.
- The standards of quality care and performance should be reviewed regularly and developed according to international standards for quality of care and performance.
- Evaluating the quality of nursing care through outcomes-analysis activities

Training

- providing continuous education that is based on systemic needs evaluation for nurses working in delivery and neonatal units.
- Providing quality improvement training programs for all nurses working in delivery and neonatal units.

Allow for competency-based in-service/refresher training that can be offsite, as well as more flexible on-the-job training. Training should include clinical simulations and other activities to encourage teamwork and improve efficiency in dealing with clinical efficiency needs

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