

Re-Audit Of Immediate Normal Postpartum Nursing Care At Woman's Health University Hospital, Assiut, Egypt.

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Abstract: Each year, 99% of the estimated 535900 maternal deaths and 98% of the estimated 5.7 million perinatal deaths occur in the developing world. Most of these deaths are preventable. Clinical audit is a quality improvement tool which aims to evaluate clinical practice and is used not only for quality improvement but also to provide a high standard of care. The aim of this study is the re-audit of immediate normal postpartum nursing care at Woman's Health University Hospital, Assiut. A criterion based audit, the design was used. A convenient sample of 500 women were included. Data were collected from January to October 2014; an interview questionnaire for both mothers and nurses and clinical audit chart were used. The results revealed that the mean age of subjects was 26.71 ± 6.13 years, multiparae constitutes nearly three quarters of subjects. Less than one-fifth of the studied mothers (14.2%) were delivered by SVD with episiotomy. Improvement in the most items of immediate postpartum nursing care for mothers and newborns was observed, as check for completeness of placenta and membranes, check for uterine contraction and fundal height and check perineum for tears, inflammation, discharge, wipe baby with wet cloth and dry, ensure thermal protection-provide a warm environment, keep newborn in skin to skin contact with the mothers, weight the baby and provide eye care. Most items of hygienic, nutritional and newborn care advices were improved with statistically significant differences It is concluded that,after implementation of an action plan & re-audit the improvement in immediate normal post-partum care was observed unless it wase not up to the level of standered.This study recommends putting standards for immediate postpartum nursing care in labor rooms, activate policies and regulations of nurse/patient ratio to improve the quality of health care. Also, further research studies are needed to identify the gaps in practices and fulfilling it.

Key Words: Immediate Post Partum Period, Audit cycle, Re-audit

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I. Introduction

Worldwide, the majority of maternal and newborn deaths occur around the time of birth, typically within the first 24 hours after childbirth. Most of these deaths are preventable, (WHO, 2015).The immediate postpartum period is a crucial period because many life threatening complications can accompany this period, (Kaur,et - al, 2014). To ensure that a good quality of care is provided, one technique that has been developed for this purpose is clinical audit. (Graham, et al., 2012). Clinical audit is a continuous process about improving practice and providing a better service, (Kitson, et al., 2012).

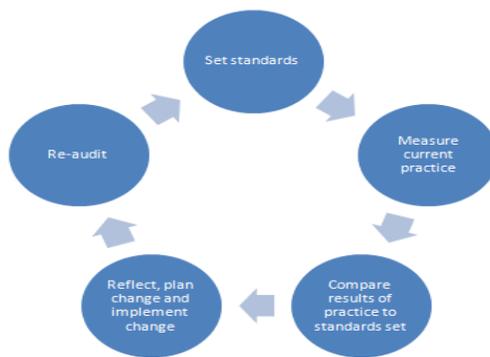


Figure 1: the Audit Cycle <http://www.roche.co.uk/uk/clinicalaudit.ht>

The audit is an integral part of standard which includes a checklist and action plan. The checklist can be used to test or audit the standard. The action plan is the critical part of the audit. It is intended to identify the area which needs strengthening or correcting and to assist the supervisor, managers in their routine supervisory care. Without action following the audit, standards will be difficult to maintain and impossible to improve (Basavantthappan B.T, 2013). Criterion-based audit (CBA) compares current practices against written and agreed upon criteria (measurable activities). The objective of CBA is to measure current practice in the care of healthy women and their babies during childbirth against the recommendations in the guideline. The audit criteria and data collection tool are intended to be used as part of a local audit project, by either using the whole tool or cutting and pasting the relevant parts into a local audit template. The audit process is objective and it allows the measurement of change in the childbearing process that the midwife has to provide for the mother and baby (Shiva, 2008) and (WHO, 2008).

Significance of the Study:

Each year, 99% of the estimated (535900) maternal deaths and 98% of the estimated (5.7 million) perinatal deaths occur in the developing world. Most of these deaths are preventable, (Kongnyuy et al 2008, & Lawn 2009). Studies have found that at least 88-98% of maternal deaths can be prevented if good quality emergency obstetric care is available (NHS Executive, 2010). The impact of quality of nursing care on immediate postpartum period lead to decrease maternal and neonatal mortality and increase maternal and neonatal health outcomes (Wray, 2012). The results of a recent study done in the same setting (Hassan M., et-al., 2014) on immediate normal postpartum nursing care identify gaps between current and ideal care. Based on these results implementing an action plan and re-audit on postpartum nursing care was carried out in the current study.

Research Question:

Is re-audit improve the quality of immediate normal postpartum nursing care at Woman's Health University Hospital, Assiut?

Aim of the Work:

Re-audit of immediate normal postpartum nursing care at Woman's Health University Hospital, Assiut.

Subjects and Methods:

Research Design:

A criterion based audit; the strategy was used for this study.

Setting:

This study was conducted at the Labor Ward, Women's Health University Hospital, Assuit, which provides free services for rural and urban areas. Annual deliveries reach to 25000 approximately.

Subjects:

All nurses working in labor room, (9 diploma nurses). Convenient sample of normal vaginal delivered women (500).

Inclusion Criteria:

Normal vaginal delivery.

Tools Of Data Collection:

The following tools were used:

1-Interviewing Questionnaire For Mothers:-

Developed by the investigator and included: socio-demographic data, menstrual history, past obstetrical history, medical history, family planning history, and present history.

2-Interviewing Questionnaire For Nurses:-

Designed by investigator and include demographic data for nursing e.g. (Name, age), level of education, years of experiences, pervious attended training programs (Infection control, CPR, others).

3-Clinical Audit Chart (Observational Check List):

This tool designed by WHO according to Guidelines standard of essential obstetric care for postpartum women and baby (WHO, 2003), consists of different tasks that are to be performed immediately after delivery, checked by done or not done. Modified by adding four columns; done by highly qualified nurse, staff nurse, student's nurse, others. It includes the ideal care and advices that should be provided to mothers, the ideal care that should be provided to newborns, advices and counseling that should be provided to mothers regards postpartum care and hygiene, breastfeeding, nutrition, and prevention of micronutrient deficiencies.

Administrative Approval:

The necessary official permission was obtained from the dean of Faculty of Nursing to proceed with the study and from the chairman of Woman's Health University Hospital to proceed with the study.

Ethical Consideration:

Research proposal approved from ethical committee in the Faculty of Nursing. Study subjects face no risk during the application of the study. An oral consent was obtained from women and nurses after explaining the nature and purpose of the study. Confidentiality and anonymity were assured.

Pilot Study:

It was established by a panel of seven expertises from the medical and nursing staff of Obstetrics and Gynecology who reviewed the instruments for clarity, relevance, understanding comprehensiveness, applicability and easiness. Guideline of WHO. A pilot study was carried on 10% of the total subjects (50 women) those subjects were included in the study. Minor modifications were required; omitting the column of highly qualified nurse from care providers in the clinical audit chart.

Filed Work:

On the light of the results of the recent study, (**Hassan M., et-al., 2014**) where gaps identified between current and ideal immediate postpartum nursing care, an action plan was implemented to fulfill these gaps. **Kaure et al.**, said that it is the hardest area to address and involves an action plan to be developed. After observing the deficiencies, motivation and education are given to the caregivers. So a change can be implemented and again re-auditing can be done to evaluate the quality of care, (**2010**).

Before implementing the action plan, the purpose of the study was explained to all nurses in labor room (their number was 9, all of them were diploma nurses). The audit chart (observational checklist) which was designed by (WHO, 2003) and recommended immediate postpartum care has been translated to Arabic and provided as handouts to all participant nurses. It has been discussed with the nurses in three sessions and taught on the spot during their official working hours. The investigator has made schedules for the nurses' sessions and the nurses have been divided into small groups according to their workload: four groups of two nurses each and one nurse in a group (according to their shift). Each session lasted for one hour and included 15 minutes for discussion and feedback. Feedback and reinforcement were performed according to the nurses needs to ensure their understanding. Giving praise and/or recognition to the interested nurses was emphasized immediately during the sessions to motivate the nurses. One month after the implementation, a clinical audit chart (observational checklist) was used to observe how the nurses adhere to provide the immediate postpartum care for mother and newborn, as recommended by WHO (re-audit). The study period lasted for 10 months, one month to implement the action plan, pausing for one month, then re-auditing for eight months. The investigator interviewed five women three days/week during the re-audit phase. At the end of re-audit phase, the investigator tabulated the data.

Statistical Analysis:

The collected data were tabulated and entered in excel sheets. Data were analyzed using SPSS program version 19. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables.

Limitations of the Study:

The current study had exhausted every effort to fulfill the criteria of a good work. Shortage of nurses, over work load and short hospital stay for women under this study were the major limitations. Insufficient previous studies to detect relatively common adverse outcomes also made some difficulty.

Merits of the Study:

Remarkable improvement is observed in immediate postpartum nursing care in the re-audit phase after implementing the action plan of immediate postpartum nursing care, in comparison with the audit phase.

II. Results

The results of this study are presented in demographic characteristics of mothers and nurses, immediate postpartum nursing care received by the mothers and baby, postpartum health counseling and advices (hygiene, breastfeeding, and nutrition) in a comparative form between the results of a recent study done in the same setting (**Hassan M., et-al., 2014**) and the current study (both audit and re-audit).

Table (1) shows that 47% of the studied mothers' age was between 25& 30 years. Regarding to level of education, 45.8% of the mothers had secondary education. Also, 97.6% of them were housewives. Regarding residence, it was found that nearly three quarters of the studied mothers (74%) were from rural areas.

Table (2) demonstrates that more than two thirds of the studied mothers (68.6%) were multigravida and nearly three quarters (71.8%) were multipara. Also, it was found that 8.6% of the studied mothers had experienced abortion (2 times or more). As regards neonatal deaths, 0.4% of the studied mothers had neonatal deaths. Also, this table illustrates that 23% of the studied mothers had 3 or more living children. Figure (2) makes it clear that less than one-fifth of the studied mothers (14.2%) were delivered by SVD with episiotomy.

Table (3) shows that 57.2% of the studied nurses` age ranged between 25 & 30 years. Regarding the level of education, 46.3 % of the nurses had secondary diploma of nursing and the rest of them were nurses' assistants. More than half of the nurses (57.2) had 5 to 10 years of experience. Also, 64.3% of those with secondary diploma of nursing had clinical training programs (infection control and/or CPR).

Table (4) reveals a statistical significant difference between audit & re-audit, ($p < 0.001$), in relation to the majority of items of immediate postpartum nursing care for mother as (check for completeness of placenta and membranes, check for uterine contraction and fundal height and check perineum for tears, inflammation, discharge). While there was no statistical significant difference related to the respond to immediate postpartum problems such as excessive bleeding and advice about return for the next postpartum check-up.

Table (5) shows that there are statistical significant differences between audit & re-audit, ($p < 0.001$), related to most of the items of immediate postpartum nursing care for newborn as (wipe baby with wet cloth and dry, ensure thermal protection, provide a warm environment). While there was no statistical significant difference related to keep newborn in skin to skin contact with the mothers, weigh the baby and provide eye care.

Table (6) reveals highly statistical significant differences related to most of the items of advices as (wash hands before handling the baby, change pads every 4-6 hours) $p = 0.000$.

Table (7) shows highly statistical significant differences related to most of the items of advices, as (keep newborn in skin-to-skin contact with the mother soon after delivery, breast milk has unique antibodies that help protect the baby against infections). ($p = 0.000$). While there was no statistical significant differences related to initiate breastfeeding within (0.5-1) hour after birth, $p < 0.5$.

Table (8) shows that there is a statistical significant difference between nutritional advices in audit and re-audit related to all items, $p = 0.00$.

Table (1): Distribution of the subjects by their demographic characteristics.

Demographic characteristics	No. (n= 500)	%
Age:		
• < 25 years	135	27
• 25 - < 30 years	235	47
• 30 - < 35	75	15
• ≥ 35 years	55	11
Mean \pm SD (Range)	26.71\pm6.13(19-45)	
Level of education:		
• Illiterate	5	1
• Read & write	16	3.2
• Primary	70	14
• Preparatory	109	21.8
• Secondary	229	45.8
• University	71	14.2
Occupation:		
• Housewife	488	97.6
• Employed	12	2.4
Residence:		
• Rural	370	74
• Urban	130	26

Table (2): Distribution of the subjects by obstetrical history

Obstetrical history	No. (n= 500)	%
Number of gravidity:		
• 1	75	15
• 2 – 4	343	68.6
• 5 or more	82	16.4
Number of parity:		
• 1	71	14.2
• 2 – 4	359	71.8
• 5 or more	70	14
Number of abortions:		
• 0	362	72.4
• 1	95	19
• 2 or more	43	8.6
Number of stillbirths:		
• 0	498	99.6
• 1	2	0.4
Number of neonatal deaths:		
• 0	498	99.6
• 1	2	0.4
• 2 or more	0	0.0
Number of living children:		
• One	90	18.0
• 2 – 3	295	59
• 3 or more	115	23

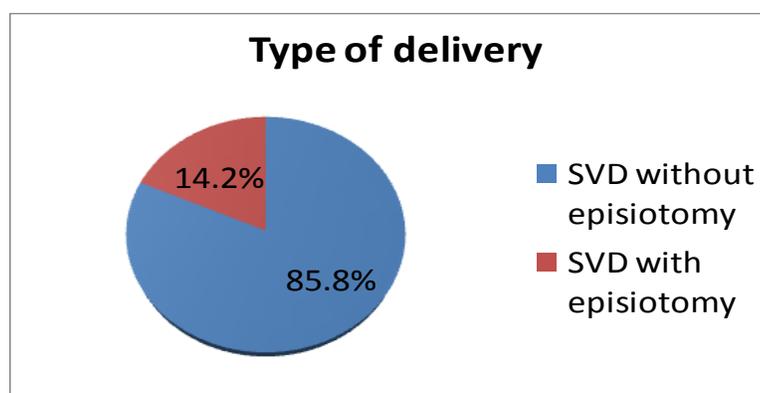


Figure (2): Distribution of the subject by type of delivery.

Table (3): Distribution of the studied nurses by demographic characteristics

Demographic characteristics	No. (n= 14)	%
Age: (years)		
< 25	3	21.4
25 - < 30	8	57.2
≥ 30	3	21.4
Mean ± SD (Range)	26.41 6.61 (18 – 43)	
Nurse's qualification:		
Diploma nurse	9	64.3
Nurse's assistants	5	35.7
Years of experience:		
< 5	3	21.4
5 - < 10	8	57.2
≥ 10	3	21.4
Mean ± SD (Range)	9.21 ± 5.44 (3 – 23)	
Clinical training program received:		
Infection control	9	64.3
CPR	9	64.3
None	5	35.7

Figure (3): Distribution of the studied nurses by Age:

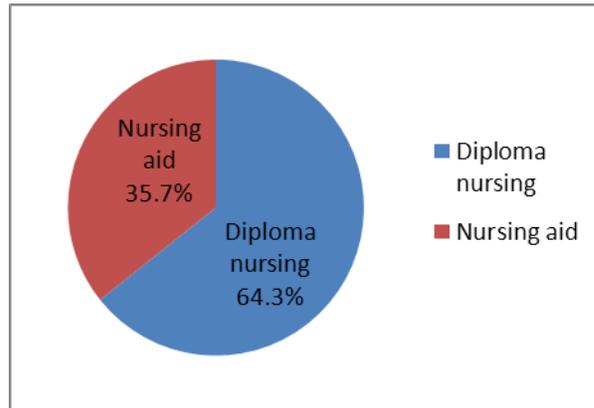


Figure (4): Distribution of the studied nurses by qualification

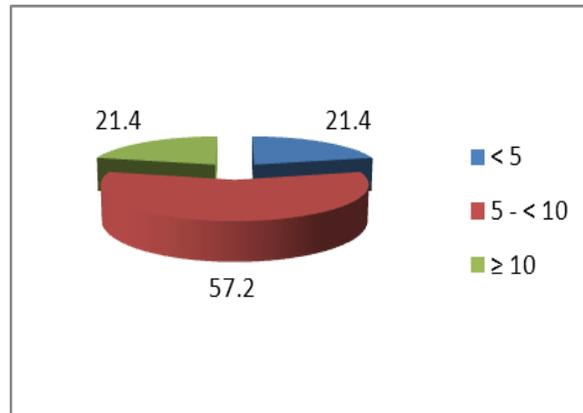


Figure (5): Distribution of the studied nurses by Years of experience

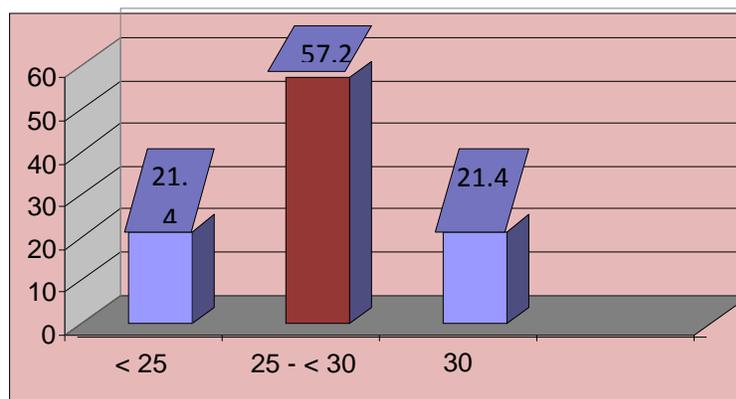


Table (4) Distribution of the subjects by caregivers and immediate postpartum nursing care for the mothers in audit and re-audit

Immediate postpartum nursing care for the mother	audit (n= 500)								re-audit (n= 500)								P-value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Check for completeness of placenta and membranes	14	2.8	14	2.8	347	69.4	125	25.0	350	70	10	2	140	28	0	0	0.000*
Assess general maternal well-being (blood pressure, body temperature, pulse)	0	0.0	86	17.2	3	0.6	411	82.2	300	60	100	20	100	20	0	0	0.000*
Identify immediate postpartum problems such as excessive bleeding (i.e., a pad soaked in less than one hour), fever, elevated blood pressure	0	0.0	4	0.8	3	0.6	493	98.6	0	0.0	0	0	0	0	500	100.0	0.029*
Respond to immediate postpartum problems such as excessive bleeding	0	0.0	0	0.0	0	0.0	500	100.0	0	0.0	0	0.0	0	0.0	500	100.0	--
Check for pallor (conjunctiva and palms)	0	0.0	19	3.8	6	1.2	475	95.0	50	10	20	4	10	2	420	84	0.000*
Check perineum for tears, discharge	51	10.2	31	6.2	310	62.0	108	21.6	350	70	35	7	115	23	0	0	0.000*
Check for uterine contraction and fundal height.	214	42.8	44	8.8	211	42.2	31	6.2	480	96	8	1.6	12	2.4	0	0	0.000*
Encourage mother to empty bladder	0	0.0	0	0.0	0	0.0	500	100.0	60	12	10	2	0	0.0	430	86	0.000*
Encourage mother to eat and drink	0	0.0	40	8.0	383	76.6	77	15.4	70	14	50	10	380	76	0	0	0.000*
Initiate early (within one hour) and frequent, exclusive breastfeeding and assist the mother to adopt correct breastfeeding practices	14	2.8	83	16.6	292	58.4	111	22.2	250	50	60	12	190	38	0	0	0.000*
Advise on maternal/newborn danger signs and where to go for help	0	0.0	30	6.0	0	0.0	470	94.0	20	4	30	6.0	0	0.0	450	90	0.000*
Advise on when to return for next postpartum check-up	0	0.0	0	0.0	0	0.0	500	100.0	0	0.0	0	0.0	0	0.0	500	100.0	--

Others= (nurse's aid &obstetrician)

Table (5) Distribution of the subjects by caregivers and immediate postpartum nursing care for the newborn in audit and re-audit

immediate postpartum nursing care for the newborn	audit (n=500)								re-audit (n=500)								P-value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Wipe baby with wet cloth and dry (Do not bathe)	405	81.0	12	2.4	79	15.8	4	0.8	450	90	15	3	35	7	0	0.0	0.000*
Monitor baby for breathing: listen for grunting, count breaths, and look for chest in drawing. Respond immediately if problems identified	0	0.0	8	1.6	2	0.4	490	98.0	270	54	30	6	0	0	200	40	0.000*
Ensure thermal protection-provide a warm environment	388	77.6	50	10.0	62	12.4	0	0.0	460	92	10	2	30	6	0	0.0	0.000*
Keep newborn in skin-to skin contact with the mother	388	77.6	50	10.0	62	12.4	0	0.0	390	78	40	8	70	14	0	0.0	0.449
Weigh the baby	390	78.0	73	14.6	37	7.4	0	0.0	390	78.0	73	14.6	37	7.4	0	0.0	–
Provide cord care	457	91.4	35	7.0	8	1.6	0	0.0	480	96	15	3	5	1	0	0.0	0.010*
Provide eye care	430	86.0	70	14.0	0	0.0	0	0.0	430	86.0	70	14.0	0	0.0	0	0.0	–
Assess general well-being (movements, muscle tone, swelling/bruises at the presenting part, malformations)	475	95.0	25	5.0	0	0.0	0	0.0	495	99	5	1	0	0.0	0	0.0	0.000*

Others= (nurse's aid & obstetrician)

Table (6): Distribution of the subjects by caregivers and hygienic advices in audit and re-audit phases.

hygienic advices	Audit (n= 500)								re-audit (n= 500)								P-value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Wash hands before handling baby	0	0.0	4	0.8	0	0.0	496	99.2	5	1	0	0	0	0.0	495	99	0.011*
Wash hands before feeding baby	0	0.0	7	1.4	0	0.0	493	98.6	200	40	7	1.4	10	2	283	56.6	0.000*
Wash perineum daily	0	0.0	50	10.0	0	0.0	450	90.0	350	70	50	10.0	0	0.0	100	20	0.000*
Wash hands after fecal excretion	0	0.0	10	2.0	0	0.0	490	98.0	200	40	50	10.0	0	0.0	250	50.0	0.000*
Wash hands before preparing food	0	0.0	8	1.6	0	0.0	492	98.4	300	60	20	4	30	6	150	30	0.000*
Change pads every 4-6 hours	0	0.0	38	7.6	0	0.0	462	92.4	50	10.0	60	12	20	4	370	74	0.000*
Wash the body daily	0	0.0	49	9.8	0	0.0	451	90.2	30	6	50	10.0	0	0.0	420	84	0.000*

Others= (nurse's aid & obstetrician)

Table (7): Distribution of the subjects by breastfeeding advices in audit and Re-audit .

breastfeeding advices	audit (n= 500)								Re-audit (n= 500)								P-value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Keep newborn in skin-to-skin contact with mother soon after delivery.	138	27.6	93	18.6	11	2.2	258	51.6	350	70	99	19.8	51	10.2	0	0.0	0.000*
Initiate breastfeeding within ½ to 1 hour after birth.	109	21.8	90	18.0	13	2.6	288	57.6	120	24	95	19.0	10	2	275	55	0.716
Give baby the first milk (colostrums), which is nutritious.	11	2.2	95	19.0	93	18.6	301	60.2	190	38	95	19.0	100	20	115	23	0.000*

breastfeeding advices	audit (n= 500)								Re-audit (n= 500)								P- value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Counsel on exclusive breastfeeding. WHO recommends that infants should be breastfed exclusively from birth to at least 4 and if possible 6 months of age	0	0.0	88	17.6	3	0.6	409	81.8	100	20.0	90	18.0	10	2.0	300	60	0.000*
Emphasize that breastfeeding should be given as often as the child desires, day and night, at least 8 times in 24 hours.	1	0.2	79	15.8	1	0.2	419	83.8	45	9.0	88	17.6	0	0.0	367	73.4	0.000*
Teach correct positioning and attachment for breastfeeding.	0	0.0	36	7.2	36	7.2	428	85.6	30	6.0	56	11.2	20	4.0	394	78.8	0.000*
Advise the mother to drink plenty of fluids, eat more, eat healthy foods and rest while breastfeeding.	0	0.0	95	19.0	76	15.2	329	65.8	70	14.0	110	22.0	50	10.0	270	54.0	0.000*
Discuss benefits for the mother	0	0.0	96	19.2	0	0.0	404	80.8	60	12.0	106	21.2	0	0.0	334	66.8	0.000*
Postpartum bleeding can be reduced due to uterine contractions caused by the baby's suckling.	0	0.0	93	18.6	0	0.0	407	81.4	170	34.0	93	18.6	0	0.0	237	47.4	0.000*
Breastfeeding can help delay a new pregnancy.	0	0.0	95	19.0	0	0.0	405	81.0	90	18.0	99	19.8	10	2.0	301	60.2	0.000*
Talk about benefits for the baby	0	0.0	93	18.6	0	0.0	407	81.4	60	12.0	93	18.6	0	0.0	347	69.4	0.000*
Breast milk contains the water and the nutrients that a baby's body needs and is easily digested by the baby.	0	0.0	93	18.6	0	0.0	407	81.4	100	20.0	99	19.8	0	0.0	301	60.2	0.000*
Breast milk has unique antibodies that help protect the baby against infections.	0	0.0	97	19.4	0	0.0	403	80.6	100	20.0	99	19.8	0	0.0	301	60.2	0.000*

Others= (nurse's aid &obstetrician)

Table (8) Distribution of the subjects by caregivers and nutritional advices in audit and re-audit .

nutritional advices	Audit phase (n= 500)								re-audit phase (n= 500)								P- value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Nutrition:																	
Women's food intake should be increased by 10% to 20% during lactation. Advise the woman to eat a greater amount and variety of healthy foods. Give examples of types of food and the amount to eat	0	0.0	85	17.0	0	0.0	415	83.0	200	40.0	140	28.0	0	0.0	160	32.0	0.000*
Determine if there are taboos about foods which are nutritionally healthy. Advise the woman against all dietary restrictions	0	0.0	2	0.4	0	0.0	498	99.6	10	0.0	2	0.4	0	0.0	498	99.6	0.007*

nutritional advices	Audit phase (n= 500)								re-audit phase (n= 500)								P-value
	Done by nurse		Done by student nurse		Done by others		Not done		Done by nurse		Done by student nurse		Done by others		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Iodine and Vitamin A deficiency:																	
Advice and counsel on the effects of iodine deficiency to the fetus (e.g., brain damage) and in childhood (e.g., mental retardation, neurological disorders, cretinism)	0	0.0	4	0.8	0	0.0	496	99.2	10	0.0	4	0.8	0	0.0	496	99.2	0.007*
Advice and counsel on prevention of vitamin A deficiency-effects of deficiency (e.g., childhood blindness) and types of food to take to prevent deficiency	0	0.0	5	1.0	0	0.0	495	99.0	10	2.0	10	2.0	0	0.0	480	96.0	0.003*
Explain that Vitamin A will help her to recover better and that the baby will receive the vitamin through her breast milk	0	0.0	5	1.0	0	0.0	495	99.0	10	2.0	10	2.0	0	0.0	480	96.0	0.003*
Iron foliate deficiency:																	
Anemia aggravates the effects of maternal blood loss and is thereby a major contributor to maternal mortality in the postpartum period	0	0.0	55	11.0	0	0.0	445	89.0	170	34.0	100	20.0	0	0.0	230	46.0	0.000*
Encourage the consumption of foods rich in iron (dark green leafy vegetables) and foods which enhance iron absorption (fruits and vegetables rich in vitamin C)	0	0.0	84	16.8	0	0.0	416	83.2	180	36.0	100	20.0	0	0.0	220	44.0	0.000*
Birth spacing and family planning	0	0.0	96	19.2	0	0.0	404	80.8	90	18.0	120	24.0	0	0.0	290	58.0	0.000*
Immunization of mother and newborn	0	0.0	87	17.4	0	0.0	413	82.6	90	18.0	130	26.0	0	0.0	280	56.0	0.000*

Others= (nurse's aid &obstetrician)

III. Discussion

An audit measures current practice against a defined (desired) standard. It forms a part of clinical governance, which aims to safeguard a high quality of clinical care for patients (GMC, 2013). Nursing audit measures the quality of nursing care actually given to patients, (Jairus R., &Walia I., 2011). This study was aimed to re-audit the immediate postpartum nursing care of normal vaginal delivery at Woman's Health Hospital, Assiut University. This study addressed an important, but largely neglected component of labor management while little attention has been paid to postpartum care.

The findings of the present study showed that the mean age of mother's was 26.71 ± 6.13 years. This result is nearly similar to that of the study done by Kongnyuy EJ., et al., (2008), a hospital-based study in Malawi, who stated that the mean age of women, in their study was 25. This finding disagrees, on the other hand, with Ibrahim, et al., (2010) whose study is about the audit in the third stage of labor in two hospitals in Assiut, Egypt. They stated that the mean age of women was 28.0±6.2. These ages were anticipated because it is the normal age of childbearing.

The vast majority of women in the present study were housewives. This finding agrees with that of Mohammed, et al., (2012) who studied women' perspectives regarding the quality of postpartum nursing care in Ain Shams Maternity Hospital, Cairo; and found that more than three quarters of women were housewives.

The present study found that more than three quarters of the subjects live in rural areas. This finding is in agreement with Mohammed, et al., (2012) who found that three quarters of the women in their study live in rural

areas.

The present study found that nearly half of the subjects had secondary education. Another study, done by **Goodman, (2011)** who studied the factors related to childbirth satisfaction in Southeastern United States, found that most of the study subjects were highly educated. These differences can be explained by the differences in cultures and communities.

As regards obstetrical history, in the present study two thirds of the studied mothers were multigravida. Regarding the number of parity, about three quarters of the studied mothers were multiparae. These findings are in agreement with **Kongnyuy EJ., et al., (2008)**, a hospital-based study in Malawi, who said that one fifth of the studied women were primiparae. **Mohammed, et al., (2012)** studied women's perspectives regarding the quality of postpartum nursing care in Ain Shams Maternity Hospital, Cairo, Egypt. They found that more than half of the women were primiparae. **Ibrahim, M.S et al, (2010)** found that about half of the studied subjects had 1-2 deliveries.

These findings can be explained by the nature of the society in Upper Egypt, Assuit, especially rural areas, where the level of education is low or inadequate, and early marriages are common, in addition to the feeling of pride of high parity among community members. This society gives priority to marriage over education when it comes to women.

As regards the type of delivery, it is found that more than three quarters of the studied mothers were delivered by SVD without episiotomy. This finding is in agreement with **Mohammed, et al., (2012)** who studied women's perspectives regarding the quality of postpartum nursing care in Ain Shams Maternity Hospital Cairo. They found that about half of the subjects had spontaneous vaginal deliveries without episiotomy.

This result reflects that Women's Health University Hospital, Assiut follows WHO recommendations about selective episiotomy.

Regarding the immediate postpartum nursing care of mothers in the previous and the current study (audit and re-audit) there were significant improvements in the re-audit, as (check for uterine contraction and fundal height) which was done by the nurse for less than half of the subjects in the audit and was improved in the re-audit to 96% with a significant difference ($p=0.000$).

A study done by **Ibrahim, et al., (2010)** who audit the care of the third stage of labor after normal vaginal delivery in Women's Health University Hospital and El-Eman Hospital in Assiut, Egypt, found that the check for uterine contraction was done for the vast majority of the study subjects. This is in agreement with **Chiechi, et al., (2011)** who studied the variations in policies for management of the third stage of labor and the immediate management of primary postpartum hemorrhage in European Union reported in 14 countries; they found that uterine massage in Ireland, Spain and Denmark was done as 100%, 98%, and 96% respectively. **Ahmed, M.Y. et al, (2012)**, who audit the care in the normal vaginal delivery, reported that check for uterine contraction, in Women's Health university hospital Assuit and Manfalout central hospital, Assuit, was totally missing in both settings. Any woman in delivery was allowed to be discharged whenever she wanted (in more than three quarters of the subjects). The current result disagrees with **David, et al., (2011)** who used the audit to enhance the quality of maternity care in countries with limited resources (rural Tanzania), they found that the practice of fundal massage immediately after delivery of the placenta followed by palpation is low in most settings. These differences can be explained by differences of setting, policies, and qualifications of working nurses

Regarding the immediate postpartum nursing care of mothers in the previous and the present study (audit and re-audit) there were significant improvements, as the assess of the general maternal well-being (such as blood pressure, body temperature, and pulse) which were not done in audit for more than three quarters of the study subjects and improved in the re-audit to more than half of them.

This result is similarly in agreement with **Ibrahim, et al., 2010**, who audit the care of the third stage of labor after normal vaginal delivery in Women's Health Hospital and El-Eman Hospital in Assiut, Egypt. They said that maternal vital signs after delivery every 15 minutes were not done for both groups in two hospitals. Another study was done by **Mohammed, et al., (2012)** who studied women's perspectives regarding the quality of postpartum nursing care in Ain Shams Maternity Hospital Cairo, and found that nearly two thirds of the subjects were observed for vital signs by the nurse. **Biguzzi, et al., (2011)** studied the risk factors for postpartum hemorrhage in cohort study, they observed 6011 Italian women from October 2010 to October 2011. They found that most women were observed for vital signs. These findings can be explained by inadequate nurse's number, knowledge, skills, poor documentation system and over work load.

In the previous and the present study (audit and re-audit) regarding respond to immediate postpartum problems such as excessive bleeding there is no statistical significant differences in audit & re-audit $P = > 0.5$. This finding can be explained by concerning of the present study with normal vaginal labor and delivery while the study was done in normal labor ward. High risk women were caring of and delivered in other ward.

In the previous and the present study (audit and re-audit) regarding checking the perineum for tears, and discharge it was done for about one tenth of the study subjects in the audit phase improved in re-audit phase to more than two thirds of subjects. **Ibrahim et al., (2010)** found that more than half of studied women received perineal examination by nurses. The present study disagrees with **Mohammed, et al., (2012)** who studied Women' perspectives regarding the quality of postpartum nursing care in Ain Shams Maternity Hospital Cairo, Egypt. They found that one quarter or less of women receive perineal examination. This can be explained by women's refusal to be exposed frequently, especially after delivery, as well as nurses' overloaded work.

In the present study regarding encourage mother to empty her bladder it was improved in re-audit phase from zero to above one tenth. Furthermore the present study is in disagreement with **Bulchandani S. et al., (2012)** who audit the care of intrapartum and postpartum bladder care in a district general hospital in the UK, and found that nearly three quarters of mothers were encouraged to empty their bladders. **Ibrahim, et al., (2010)** found that 5.1% of mothers in their study were encouraged to empty their bladders by nurses. These findings can be explained by inadequate qualifications of working nurses and early discharge of puerperal women plus over work load of nurses.

Regarding initiate early breastfeeding, it improved from 2.8% in audit to half of the study subjects in re-audit. This result disagrees with **Donnan, et al., (2013)** who followed 344 women in the Nine Wells Hospital, Dundee, Scotland, in a prospective cohort study. They found that at delivery, 68% of the women initiated breastfeeding by nurses' encouragement. These differences can be explained by early discharge of women after normal vaginal delivery in addition to overloaded staff nurses as well as lack of clear recommendations. In the present study, regarding encourage mother to eat and drink immediately in postpartum period, it improved in re-audit from zero to above one tenth of the study subjects. This result is in agreement with **Kongnyuy, et al., (2008)**, their hospital-based study in Malawi, found a significant improvement in maintained fluid intake and output (0.0% vs. 33.3%; $P < 0.001$).

This finding can be explained by early discharge, and neglect and carelessness of nurses, who consider these items of care to be the role of family members not theirs.

Regarding immediate postpartum nursing care for newborn, there were statistical significant differences between audit & re-audit, ($p = < 0.001$), related to most of the items of immediate postpartum nursing care for newborn. Three quarters of the babies were weighed by nurses, and the vast majority receive an assessment of general well-being. **Mohammed, et al., (2012)** who studied Women' perspectives regarding the quality of postpartum nursing care in Ain Shams Maternity Hospital Cairo, reported that more than three quarters of babies were weighed during postpartum but did not receive a general assessment.

In the present study, above three quarters of the subjects kept newborns in skin to skin contact with the mother and the vast majority of babies received cord and eye care. A Study done by **Tapiwa and Alepile, (2011)** who evaluated the quality of care by midwives provided during the postpartum period in Northern Botswana, found that more than three quarters of subjects kept newborns in skin to skin contact with the mother (which agrees with the present study), one fifth of subjects were eye-examined, and one tenth of them received umbilical cord care (this disagrees with the present study). These differences could be explained by differences of the hospital's recommended routine care.

As regards to breastfeeding advices in immediate postpartum care, in the present study there were statistical significant differences related to the majority of advices; with an improvement in re-audit phase. This includes advices related to breastfeeding and breast-care ($p = 0.000$) as counsel on exclusive breastfeeding from 0 to 20%. The present results are in agreement with **Martin, (2013)** who studied women's judgments and attitudes about the quality and quantity of postpartum teaching, University of Arizona College of Nursing, and found that a large proportion of the mothers received advices about breastfeeding and breast-care (86%; $n = 43$). The present result disagrees with **Mohammed, et al., (2012)** who stated that most of the mothers in their study reported that they didn't receive sufficient postpartum advices on breastfeeding and breast-care. Another study done by **Rudman, et al., (2011)** about women's satisfaction with intrapartum care reported that nearly half of the mothers did not receive sufficient breastfeeding and breast-care advices. **Waldenström, et al., (2012)** studied intrapartum and postpartum care in Sweden and reported that only one quarter of the mothers received sufficient breastfeeding and breast care advices.

These differences can be explained by early discharge and the lack of nurses' skills.

As regards to hygienic advices in immediate postpartum care, there were a statistical significant improvement in re-audit ($p = 0.000$). The present results disagrees with **Mohammed, et al., (2012)** who reported that the mothers did not receive sufficient postpartum advices on personal hygien, perineum self-care and care of episiotomy site. **Ahmed. M.Y et al., (2012)** who audit the care in normal labor in 2 hospitals (Manfalout Central Hospital and Women's Health Hospital) said that hygienic advices, such as washing hands before contacting the

baby, were defective in both hospitals. Nurses depend on wearing sterile gloves thinking that they would prevent infection.

As regards nutritional advices in immediate postpartum care, there were statistical significant differences with improvement in re-audit from 0 to 40% ($p=0.000$). **Mohammed, et al., (2012)** reported that the majority of the mothers did not receive sufficient postpartum nutritional advices. This is similar to the results of the audit phase of the previous study.

These findings can be explained by early discharge and the lack of nurses' knowledge and work load.

In the present study advices of birth spacing and family planning improved in re-audit to one fifth of the study subjects. On the other hand, **Jhpiego, (2015)**, stated that most of the mothers were not provided with contraceptive advices in immediate postpartum period.

As regards advices of immunization for mother and newborn, the results improved in re-audit from zero to 18% of the study subjects. The present result is in agreement with **Tapiwa and Alepile., (2011)**'s study: (An evaluation of the quality of care midwives provide during the postpartum period in northern Botswana). They found that nearly one quarter of the study subjects received vaccination advices.

In re-audit, while most of the items of care were improved, not all items reach to the ideal or the standard.

These findings are due to many reasons including: shortage in the number of nurses, during each shift (morning, afternoon, night, two nurses), and poor documentation system. Moreover, working nurses do not have the privilege of continuing educational programs which can highly increase their knowledge and improve their skills. Lack of continuous supervision and annual evaluation of their performance, lack of motivation, absence of job specification plus shortage in staffing all lead to overlapping when it comes to providing some items of care and neglecting the other. In addition, early discharge after delivery decreases the time needed to provide the instructions and advices necessary for parturient. Last but not least, it cannot be ignored that working nurses are overloaded with administrative duties beside their duties as health care providers.

III. Conclusion

After the implementation of an action plan and re-audit, the improvement in immediate normal postpartum nursing care was observed, though it was not up to the level of standard.

IV. Recommendations:

In the light of the findings of the present study, the following recommendations are suggested:

1. Enroll nurses in continuous training programs.
2. Provide standards for immediate postpartum nursing care in labor rooms.
3. Activate policies and regulations of nurse/patient ratio to improve the quality of health care.
4. Further research studies are needed to identify the gaps in practices and fulfilling it.

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