

The Effect of On-job Training Sessions on Improving Nurses' Information, Practical Achievement and Their Satisfaction Regarding Patients Suffering from Early Postpartum Hemorrhage

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Abstract Aim: To investigate the effect of on-job training sessions relating to early postpartum hemorrhage on improving nurses' information, practical achievement and their satisfaction. **Methodology:** A quasi-experimental study and an interventional pre and post-test study were used to study a sample of 78 nurses. The data was collected from the Obstetrics and Gynecology internal departments and outpatient clinics in Benha University Hospital, Benha Teaching and Health Insurance hospitals of Benha City, which is considered the capital of Qalyubia Governorate and affiliated to the Ministry of Health in Egypt. A purposive sample was employed with the use of 3 tools to collect the data, a structured interview a questionnaire; an observational checklist; and nurses' satisfaction tool. **Results:** The result of the present study shows a highly significant improvement in total information and practical skills among the pre- intervention studied sample compared to immediate and eight weeks' post-intervention, $P < 0.01$. Additionally, 83% among the studied sample was satisfied with the new information included in the job training sessions. Also, the main obstacles that prevent nurses to comply with the implemented on job training sessions eight weeks' post-intervention are the sudden emergency cases which represent 75%. **Conclusion:** the present study concludes that a significant improvement in nurses' information and practices due to the implementation of on-job training sessions. **Recommendations:** Nursing standards, protocols and guideline must be designed to enhance nurses' information, practical achievement and their satisfaction. On the other hand, hospital administrators must direct their attention toward relieving nurses from administrative work and devoting their time for nurses' activities only.

Keywords: on-job training, nurses' information, satisfaction, postpartum hemorrhage

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1. Introduction

Early postpartum hemorrhage (PPH) is the leading cause of morbidity and mortality in childbirth in both low and high-income countries [1]. It occurs in approximately 1% to 6% of all deliveries [2]. PPH is defined as the excessive hemorrhage occurring during the third stage of labor, or after the vaginal birth of a child from the genital tract within the first 24 hours [3]. In 2017 the maternal mortality due to early postpartum hemorrhage are estimated to be 295 000 maternal deaths worldwide. While in Egypt, maternal mortality due to early postpartum hemorrhage is estimated to be 37 deaths / 100,000 live births [4]. A study in Nigeria (2019) showed that PPH had the highest maternal mortality ratio (112/100 000 live births). The causes of early postpartum hemorrhage can be

explained by the 4T's theory: Tone – Uterine a tony (70-90%), i.e. failure of the uterus to contract immediately after birth. Tissue (retained placental products, if part, or all, of the placenta, remains in the uterus, it prevents the normal process of contraction, and as a result, the blood vessels feeding into the site where the placenta was attached continue to bleed or blood clots that are estimated for 6-10% of all cases). Trauma (including genital tract trauma, uterine ruptured and uterine inversion, leading to 20% of all cases), and coagulation defects that account for 1% of all early hemorrhage cases, where such defects may have occurred as a premature separation of the placenta from the uterus (Abruptio placenta) or jaundice in pregnancy [5,6].

The priority for the health and development agenda, in the Sustainable Development Goals; is to reduce maternal and neonatal mortality and morbidity globally [4]. Medical management for early postpartum hemorrhage

according to WHO [7] consists of 1- Administer uterotonic drugs or Oxytocic (oxytocin, ergometrine, prostaglandins, syntometrine), 2- control cord traction CCT and 3- uterine massage. Mechanical procedures for early postpartum hemorrhage management which consists of Bimanual compression of the uterus, manual removal of the placenta, Aortic compression, Anti-shock garment to treat shock, intrauterine tamponade balloon [8], and Surgical management of early postpartum hemorrhage which included various forms of compression sutures ligation of the uterus, replacement of the uterus in case of uterine inversion, repair of genital tract lacerations, ovarian or internal iliac artery ligation, and subtotal or total hysterectomy. All of them aim to control early postpartum hemorrhage when medical or mechanical interventions have failed [9].

Nurses play a significant role in improving health standards. Hence, the nurses need to be updated about theoretical and practical knowledge in this field. The incidence of PPH may occur due to the lack of educational interventions of obstetric staffs on PPH signs, prevention, and management. Training health providers is an essential strategically step to improve health; it is the placement in attaining productivity and worker retention through providing professional development and job satisfaction in the long run, as well trainings make effects through prevention, management and referral, beyond the individual care for women, update the staff's job-related information and professional skills and improve the best practices for achieving a variety of tasks and responsibilities [10,11].

Moreover, nurses play a multidisciplinary role as a direct care provider, in which a trained nurse cares for the patients of one or more general practitioners in the consulting room and on domiciliary consultation as health educator, counselor, and researcher. Administrator on the other hand must design and implement on job training sessions to enhance nurses' information and practical achievement and promote their knowledge about PPH prevention and management.

Job training sessions is defined as the most common approach for learning at work in which learning how to perform a job is conducted in work setting. Such kind of training can be considered an effective way for transferring tacit skills to new employees as well as more formal information [12].

1.1. Significance of the Study

In reference to Ministry of Health and Population in Egypt, the maternal death due to early postpartum hemorrhage was estimated to be 5.5% at obstetric departments, Qalyubia governorate. Also; the Egyptian government vision 2019 emphasized on the importance of promoting mother health initiative. Hence, the promotion of mother health is a nursing concern especially for those critically ill with early postpartum hemorrhage as a direct care provider, administrator who organized and implemented on job training sessions to improve nurses' information and practical achievement to minimize maternal, fetal morbidity and mortality [13].

Furthermore, the present study draws on the recommendations of a previous study conducted in Egypt

which suggested the importance on job training sessions concerning early postpartum hemorrhage to enhance nurses' information, practical achievement and satisfaction [13].

1.2. The Aim of the Study

The aim of the study to investigate the effect of on- job training sessions on improving nurses' information, practical achievement and their satisfaction regarding patients with early postpartum hemorrhage

1.3. Research Hypothesis

- 1- Nurses who received on job training sessions about early postpartum hemorrhage had shown better information
- 2- Participants' practical achievement and their satisfaction are more than those who didn't participate.

2. Materials and Methods

2.1. Research Design

A Quasi-experimental, and intervention pre and posttest study.

2.2. Setting

The study was carried out at the obstetrics and gynecology internal departments and outpatient clinics in Benha University Hospital, and Benha Teaching and Health Insurance Hospital at Benha City, which is considered the capital of Qalyubia Governorate and affiliated to the Ministry of Health in Egypt.

2.3. Subjects and Sample

The participants in this study were (88 nurses) who are working at the previously mentioned setting, 20 nurse managers and 68 staff nurses, aged 18 to 40 years old and from a rural area. 10 nurses were excluded from the total sample due to their participation in the pilot study. The education level of participants varies from nursing diploma to Bachelor of Nursing.

Inclusion criteria: nurses whose age is less than 18 years or more than 40 years were excluded.

2.4. Tools of Data Collection

Three tools were used to collect the data by the researchers after reviewing the advanced related literature. All tools of data collection implemented pre- intervention then immediate and eight weeks' post- intervention, while the satisfaction tool was implemented eight weeks' post-intervention only.

First Tool: The structured interviewing questionnaire includes two parts: *The first part:* assessed nurse's general characteristics. *The second part:* assessed nurses' information regarding early postpartum hemorrhage that included: (meaning, causes and risk factors, signs and

symptoms, complications and nursing management Strategies for early postpartum hemorrhage). The information scoring system was 2 score for the correct answer and one score for an incorrect answer. The total information correct score was 60% while the total information for the incorrect score was (<60%).

Second tool: An observational checklist:

To assess nurse's practical achievement while providing patient's care every 15 minutes for the first four hours with early postpartum hemorrhage includes the following procedures; (inserting IV line, obtaining blood sampling for grouping and Rh factor, sending sample to lab immediately, assess contractility and level of uterus, assess lochia for (color, consistency, odor, components and amount). Encourage neonatal immediate suckling of mother breast. Scoring system for an observational checklist was 2 score for correct practical achievement and one score for incorrect practical achievement. The total correct practical achievement was scored 60% while incorrect practical achievement total scored as <60%.

Third tool: - "Nurse Satisfaction tool" includes two parts:

The first part: assess nurses' satisfaction regarding on-job- training sessions which consists of eight statements. Upon which nurses respond as satisfied, dissatisfied and uncertainly satisfied.

The second part: assess obstacles that prevent nurses to comply with on job training sessions for patients with early postpartum hemorrhage which consists of five statements.

2.5. Content Validity and Reliability

All tools of data - Collections were developed by the researchers and sent to three specialized university Professors. According to their comments, modifications were considered.

On job training sessions were utilized by the researchers according to nurses' learning needs.

2.6 Field Work or Operational Design

The study was implemented through three phases - included the preparatory, implementation and evaluation phase:-

Phase one (preparatory Phase):

The researcher reviewed the current advanced national and international literature related to the study topic, then prepared the tools for data collection and designed on job training sessions. The researchers collaborate with nurse administrator to plan training sessions schedule as well as separate place for interviewing studied sample. Finally, a pilot study was conducted.

Phase two (implementation phase):

Firstly, the researchers interviewed three nurses per day according to their sequence attendance in hospital registration book and explain the aim of the study to obtain their oral consent. (Duration of each interview 25 minutes).

Secondly, nurse's practical achievement was assessed using an observational checklist, while they were providing patients care with early postpartum hemorrhage.

-Each day, two nurses' practical achievement was assessed from 9 Am to 9 pm.

-After the completion of assessment of nurses' practical achievement. On- job training sessions was designed according to the studied sample ' learning needs through 10 sessions for six months, duration of each session was one hour, number of participant (6) nurse in each session. -Three sessions for theoretical learning (opening, registration, welcome, pre-test, discussing session objectives, concept of early postpartum hemorrhage, causes, signs & symptoms and complication and medical management) and seven sessions were implemented for practical training (nursing immediate intervention', counting blood sample for blood grouping and RH factor, order blood transfusion, assess fundal level and uterine contractility, assess fluid intake and output, assess lochia amount and color, monitor transfusion reaction of consciousness, assess level of consciousness, promote early initiation of exclusive BF., apply leg exercises, instruct mothers about technique and position of BF, self- breast examination, general hygiene and genital hygiene, healthy nutrition during postpartum hemorrhage period, instruct mothers to assess lochia color, amount, odor and warning signs during postpartum period). The nurses' leaders instructed obstetric and labor nurses about information that should be given to patients to educate them on how to seek support for signs of PPH.

- Methods of teaching involved (group discussion, Lectures, brainstorming, demonstration and bedside teaching. At the end of each session, the researcher devoted fifteen minutes to give an opportunity to ask questions in order to clarify their theoretical question, on the other hand, the researcher demonstrates and replicates studied sample practice questions regarding practical sessions.

- Media in training sessions involved (lab-top computer, flip chart as well as audiovisual aids (data show presentation) and role play.

Phase three (evaluation Phase):

This Phase was utilized to evaluate the effect of implemented on job training sessions on improving nurses' information and practical achievement among the patients with early postpartum hemorrhage. Nurses' practical achievement was assessed on three patients three times. The mean was obtained for statistical analysis. All tools of data collection employed pre-intervention then immediately and eight weeks' post-intervention, but the nurses' satisfaction and obstacles tools were utilized only through eight weeks' post-intervention. Also, each participant was given an opportunity to self-report obstacles that prevent their compliance with implementing the on-job training sessions eight weeks' post-intervention.

Ethical Consideration:

- The researcher clarified the aim of the study to each of the nurses who participated in the study.
- The participants were informed that their participation is voluntary and they have the right to withdraw from the study at any time.
- Written consent was obtained from each of the nurses who participated in the study.
- A letter of approval was sent to the directors of each study hospital which included the aim of the study.

- The study tools took into account that the study didn't touch participant's dignity, culture, traditional and religious aspects.

2.6. Statistical Analysis

Data were analyzed using statistical package for the social science (SPSS) version 20. The data were reported as number and percentages, and the level of significance is set at $p < 0.05$. The χ^2 test and Fisher's exact test were used to test for correlations between variables. The correlation between study variables was calculated using Pearson's correlation coefficient. The level of significance was adopted at $p < 0.05$.

3. Results

Table 1 shows that there is a highly statistically significant difference at ($P = < 0.01$) between pre, post, and follow up the implementation of on-job training sessions. Additionally, there is a marked improvement in information among the studied sample about early postpartum hemorrhage post-implementation of on-job training sessions compared to pre-intervention. The present study results reveal that there is a highly statistical significant difference at ($P = < 0.01$) between pre,

immediate and eight weeks' post-implementation of on- job training sessions. Moreover, there is a marked improvement in practical skills among the studied sample about general and local examination post-implementation of on-job training sessions compared to pre-intervention (Table 2). As shown in Table 3, there is a highly statistical significant difference at ($P = < 0.01$) between pre, immediate and eight weeks' post-implementation of on-job training sessions. Also, there is a marked improvement in practical skills among the studied sample about health education post-implementation of on-job training sessions compared to pre-intervention. Table 4 illustrates that (82 %) among studied sample is satisfied with the recent information from the on-job training sessions. Moreover, (79 % & 74 %) among the sample is satisfied to realize the new information and practical achievement post-implementation of the on-job training sessions and satisfied about the scientific material of the on-job training sessions, respectively. As for the obstacles that prevent nurses to comply with the implemented on job training sessions, Table 5 shows that (74%) of studied nurses have obstacles eight weeks' post- intervention due to the number of admitted sudden emergencies cases. Table 6 reveals that there is a positive correlation between total correct information and practical achievement among the studied sample regarding early postpartum hemorrhage at pre, immediate and eight weeks post on job training sessions.

Table 1. Frequency distribution according to the studied sample correct and incorrect information related to early postpartum hemorrhage at pre, immediate and eight weeks' post-intervention (n=78)

Items	Pre-intervention		Immediate Post-intervention		Eight weeks post-intervention		Friedman test	
	N	%	N	%	N	%	X2	p-value
Concept of early postpartum hemorrhage .							27.80	0.000**
Correct	28	37.5	64	82	58	74		
Incorrect	50	62.5	14	18	20	26		
Causes of early postpartum hemorrhage.							28.47	0.000**
Correct	30	38	66	85	62	79		
Incorrect	48	62	12	15	16	21		
Signs &Symptoms of early postpartum hemorrhage .							29.50	0.000**
Correct	30	38	70	90	64	82		
Incorrect	48	62	8	10	14	18		
An accurate method to calculate the amount of blood loss.							24.01	0.002**
Correct	18	23	56	74	50	64		
Incorrect	60	77	20	26	28	36		
Complications of early postpartum hemorrhage							25.70	0.001**
Correct	22	28	56	72	52	67		
Incorrect	56	72	22	28	26	33		
Medications to promote uterine atony.							33.27	0.000**
Correct	20	26	62	79	56	67		
Incorrect	58	74	16	21	26	33		
An immediate nursing intervention to prevent early postpartum hemorrhage.							24.30	0.002**
Correct	12	15	54	69	48	78		
Incorrect	66	85	24	31	30	38		

Table 2. Frequency distribution according to the studied sample correct and incorrect practical achievement pre, immediate and eight weeks' post-intervention related to general and local examination among patients with early postpartum hemorrhage (n=78)

Items	Pre-intervention		Immediate Post-intervention		Eight weeks post-intervention		Friedman test	
	Correct N (%)	Incorrect N (%)	Correct N (%)	Incorrect N (%)	Correct N (%)	Incorrect N (%)	X2	p-value
Monitor maternal vital signs	18 (23)	60 (77)	54 (69)	24 (31)	48 (62)	30 (38)	26.68	0.001**
Assess the maternal level of conscious and administer O2 sat >90%.	14 (18)	64 (82)	50 (64)	28 (36)	44 (56)	34 (44)	24.82	0.000**
Monitor signs of complications, recorded and reported immediately.	18 (23)	60 (77)	52 (67)	26 (33)	50 (64)	28 (35)	23.17	0.000**
Immediate nursing intervention. "Insert cannula to obtain a blood sample.	34 (44)	44 (56)	62 (79)	16 (21)	56 (72)	22 (28)	26.50	0.000**
Send blood sample as doctor order to the lab.	32 (41)	46 (59)	62(79)	16(21)	54(69)	24 (31)	26.07	0.000**
Monitor blood transfusion flow and reaction recorded and reported.	28 (36)	50 (64)	54(69)	24(31)	48(62)	30(38)	22.98	0.001**
Promote privacy, comfort and safety measures.	22 (28)	56(72)	64(82)	14(18)	58(74)	20(26)	25.30	0.000**
Local examination								
Comply with infection prevention measures during any procedures.	14 (18)	64(82)	50(64)	28(36)	44(56)	34(44)	24.82	0.000**
Assess the level of uterine fundus and contractility.	10 (13)	68(87)	46(59)	32(41)	44(56)	34(44)	25.12	0.000**
Massaging the uterus as doctor order.	16 (21)	62(79)	48(62)	30(38)	40(51)	38(49)	20.14	0.002**
Observe and report vaginal lochia.	18(23)	60(77)	50(64)	28(36)	48(62)	30(38)	30.18	0.000**
Encourage immediate neonatal suckling to promote uterine contractility to minimize hemorrhage .	8(10)	70(90)	58(74)	20(26)	48(62)	30(38)	29.08	0.000**
Assess the mother's legs to report any abnormalities.	14(18)	64(82)	52(67)	26(33)	44(56)	34(44)	25.17	0.000**
Recorded and reported all observations.	38(49)	40(51)	66(85)	12(15)	62(79)	16(21)	28.77	0.000**

Table 3. Frequency distribution according to the studied sample correct and incorrect health education provided for patients with early postpartum hemorrhage pre, immediate and eight weeks' post-intervention (n=78)

Items	Pre-intervention		Immediate post-intervention		Eight weeks post-intervention		Friedman test	
	Correct N (%)	Incorrect N (%)	Correct N (%)	Incorrect N (%)	Correct N (%)	Incorrect N (%)	X2	p-value
Health education related to mother:								
Instruct mother about self-care.	18(23)	60(77)	54(69)	24(31)	48(62)	30(38)	33.22	0.000**
Differentiate between normal and abnormal vaginal lochia.	20(26)	58(74)	52(67)	26(33)	44(56)	34(44)	30.70	0.000**
Rest and comfort.	8(10)	70(90)	46(59)	32(41)	40(51)	38(49)	30.18	0.000**
Exercises during the postnatal period:-	12(15)	66(85)	52(67)	26(33)	42(54)	36(46)	31.04	0.000**
Encourage fluids intake during the postnatal period.	14(18)	64(82)	54(69)	24(31)	42(54)	36(46)	27.20	0.001**
Early screening of dangerous signs.	12(15)	66(85)	52(67)	26(33)	42(54)	38(46)	19.04	0.003**
Regular postnatal scheduled visit.	18(23)	60(77)	66(85)	12(15)	54(69)	24(31)	39.40	0.000**
Health education related to the neonate:								
Early initiation, on-demand and exclusive breastfeeding.	20(26)	58(74)	52(67)	26(33)	44(56)	34(44)	30.70	0.000**
Promote baby hygiene.	16(21)	62(79)	50(64)	28(36)	48(62)	30(38)	24.04	0.001**
Follow up visit schedule and vaccination.	14(18)	62(82)	54(69)	24(31)	46(59)	32(41)	27.20	0.001**
Prevent harm for practices as:								
FGM.	10(13)	68(87)	50(64)	28(36)	42(54)	38(46)	25.41	0.001**
Sitting in warm water.	14(18)	64(82)	66(85)	12(15)	48(62)	30(38)	26.01	0.000**
Putting kohl in neonatal eyes.	18(23)	60(77)	52(67)	26(33)	40(51)	38(49)	31.60	0.000**
Eating spicy food.	8(10)	70(90)	46(59)	32(41)	40(51)	38(49)	30.18	0.000**
Prevent smoking.	8(10)	70(90)	48(62)	30(38)	44(56)	34(44)	23.17	0.001**
Avoid un described medications.	20(26)	58(74)	58(74)	20(26)	54(69)	24(31)	22.60	0.002**

Table 4. Frequency distribution according to the studied sample satisfaction eight weeks' post-intervention regarding the implemented on job training sessions (n=78)

Items	Satisfied		Uncertainly Satisfied		Unsatisfied	
	N	%	N	%	N	%
On job training sessions improve nurses' practices.	64	82	8	10	6	8
On job training session's language was simple and clear.	62	79	12	15	4	5
The aim of on-job training sessions was matched with its content.	54	69	14	18	10	13
The place of implementing on-job training sessions was comfortable with adequate ventilation and lighting.	54	74	16	21	4	5
The number of participants was suitable to the place of training.	52	67	18	23	8	10
The implemented on job training sessions contribute to the development and updating nursing knowledge regarding early postpartum hemorrhage.	29	74	8	21	2	5
On job training session's time did not interfere with hospital activities.	42	54	24	31	12	15
On- job training sessions were recommended to be replicated for another setting and other larger sample in the future.	54	69	16	21	8	10

Table 5. Frequency distribution among studied sample regarding the obstacles that prevent nurses to comply with the implemented on job training sessions eight weeks' post-intervention. (n=78)

Items	Yes		No	
	N	%	N	%
Admitted sudden emergencies cases.	58	74	20	26
Sudden admission of critically ill patients which may lead to an overload of work on nurses.	52	67	26	33
Unavailability of equipment and facilities.	46	59	32	41
Engaged nurses with administrative work rather than nursing activities.	54	69	24	31
Women traditional misconception regarding nursing care provided.	48	62	30	38

Table 6. Correlation between total correct information and practical achievement among studied sample related to early postpartum hemorrhage at pre, immediate and eight weeks' post-intervention (n=78)

Item	Total practical achievement at pre- intervention.		Total practical achievement at the immediate post- intervention		Total practical achievement at eight weeks post- intervention	
	r	P- value	r	P- value	r	P- value
Total information at pre-intervention.	0.452	0.000**				
Total information at immediate post- intervention.			0.462	0.000**		
Total information at eight weeks post-intervention.					0.458	0.000**

4. Discussion

On-job training for health care providers working in maternity care is necessary to help them to identify the women who have complications during pregnancy or at time of birth and recognize how to prevent and manage these complications effectively. Therefore; the present study aimed to investigate the effect of on-job training sessions concerning to early postpartum hemorrhage on improving nurses' information, practical achievement and their satisfaction. This aim was significantly approved within the framework of the present study's research hypothesis which involved nurses who received on job training sessions about early postpartum hemorrhage shows better information, practical achievement and satisfaction more than those who didn't participate. This was achieved through the present study findings because it was illustrated that there was a highly significant improvement of nurse's information post-intervention compared to pre-intervention. This is in agreement with *Gaffey et al* [14,15] who found that there was significant improvement of nurses' information post-intervention compared to pre-intervention and they found that educational programs (both booklet and education) for the

prevention and management of early postpartum hemorrhage led to significant improvements in the information of obstetric nurses. In the same line *Charles et al* [16] who concludes that competency is increased with statistically significant improvements in knowledge and skills in the most of healthcare providers who attend training in emergency obstetric care. Similarly, some studies reported a significant improvement in knowledge and skills immediately after the training [17,18,19,20]. In the same direction *Ameh et al* [21] confirms that healthcare providers retain knowledge and skills for up to 12 months.

Similarly, in Egypt, it was reported a highly statistically significant difference between pre and post-intervention regarding nurses' information about early postpartum hemorrhage due to previous relevant experience [22,23]. In the same vein; a randomized control trial in the UK noted sustained knowledge [related to the management of shoulder dystocia, eclampsia and postpartum hemorrhage (PPH)] at both 6 and 12 months post-training [17]. In contrast, *Monod et al* [24] mentioned a significant decreased in knowledge achieved after 3 months training with scores ranging from 96.9% to 36.3%.

It is very essential for midwives and nurses to attain more knowledge and practical achievement on the

management of PPH, especially in the developing world where maternal mortality rates are high [25]. The present study findings had revealed that a significant improvement in nurses' practical achievement immediately after eight weeks' post-intervention. These findings supported by the study of *Charles et al* [16] who showed an improvement in the clinical practice of health care providers after attending the training program. This result is on the same line with other study results [26,27] which found that nurses had incorrect practical achievement at pre-intervention phase and highly improved immediately after three months' post-intervention.

These findings had pointed out our attention toward the successful effect of the implementation of on-job training sessions to maternity nurses as a method for continuous development and improvement of their knowledge and skills to promote and improve their competences. Thus, there was a clear role in continuing professional development activities of nurses which have an ultimate reflection on improving patient's care outcome.

Finally, there was a significant relationship between nurses' information and their pre-intervention practical achievement compared to post-intervention. This is because nurses' knowledge is considered the base of their practical achievement. This is in line with *Kaur and Sagar* [28], who found a highly significant association between obstetric nurses' information and their practical achievement. In the same line *Harhash* [29] found a highly significant association between obstetric nurses' knowledge and their practices.

Furthermore, the results of present study confirm the importance of implemented on job training sessions as the results shows that there is a highly studied sample' information retention eight weeks' post-intervention. This is due to the effectiveness and practicability of the implemented on- job training sessions. Also, the studied sample was satisfied with the implemented on job training sessions because they reported that the on-job training session's language was simple and clear. The aim of on-job training sessions matched with its content. Also, the place of implemented on job training sessions was comfortable with adequate ventilation and lighting.

In addition, the implemented on job training sessions' contributes to the development and updates with the advanced information regarding early postpartum hemorrhage and improve nurses' practical achievement. Moreover, the majority of the studied sample suggested replicating the training to other nurses in another setting in the future to enhance nurses' information, and practical achievement. Also, the majority of nurses were highly satisfied with the implementation of on job training sessions.

Finally, the results of present study illustrated that the main obstacles that prevent nurses to comply with the implemented on job training sessions for women undergoing early postpartum hemorrhage is linked to sudden emergencies cases, unavailability of equipment and facilities.

Additionally, sudden admission of critical ill patients may lead to overload of work among nurses and engage nurses with administrative work rather than nursing activities. Moreover, women have a traditional misconception regarding nurse's activities due to the inherited traditional trust in Egyptian uncertified midwives because the majority of the

mother from rural areas who trust and believes in uncertified midwives' practices more than nurses practices.

5. Conclusion and Recommendation

The present study results showed a significant improvement in nurses' information and practical achievement and their satisfaction due to the implementation of on-job training sessions. So the following are recommended:

- Nurse administrator must design and implement a monitoring evaluation system to evaluate nurses' practical achievement periodically at obstetric departments.
- Nurse administrator must design nursing standards, protocols and on-job training sessions for all nurses at obstetric departments.
- There is a need for hospital-based policy and protocol to address postpartum hemorrhage education to staff nurses.
- Replicate the present study on job training sessions at another setting and on a larger sample.
- Further studies to investigate health team immediate intervention related to early Postpartum Hemorrhage at the obstetric department.

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Author Contribution

All authors have directly participated in the planning, execution, and analysis of this study. All authors have critically reviewed and approved the final draft and are responsible for the content of the manuscript.

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