

## Effect of Guideline on Improving Nurses' Practices for Patients with Early Postpartum Haemorrhage

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### Abstract

**Background:** postpartum hemorrhage (PPH) is still one of the main causes responsible for maternal morbidity and mortality. **Aim of the study:** To investigate the effect of guideline on improving nurses' practices for patients with early postpartum hemorrhage. **Setting:** At obstetric departments in Damanhur teaching hospital at Beheira Governorate. **Study Design:** A Quasi- experimental (an interventional pre and posttest study). **Subject type:** purposive sample. **Subject size:** All nurses (44nurses) who were working at obstetric departments and accepted to participate in study, at previously mentioned study setting. Four nurses were excluded from the total sample due to their participation in the pilot study. **Tools:** Three tools 1) a structured interviewing questionnaire. 2) An observational checklist. And 3) Nurses' satisfaction tool. **Results:** The result of the present study findings was highly significant improvement in total knowledge and total practical skills among the studied sample pre intervention compared to immediate and eight weeks post intervention.  $P = < 0.01$ . Additionally, about more than three quarter among studied sample satisfied with the advanced knowledge included in guideline. **Conclusion:** the present study findings concluded that a significant improvement among studied sample' knowledge and practices post intervention. **Recommendations:** Nursing standards, protocols and guideline must be designed to enhance nurses' knowledge, practices and satisfaction.

**Keywords:** Early Postpartum Hemorrhage - Nursing guideline.

### Introduction:

Postpartum hemorrhage (PPH) is a life-threatening event involving severe bleeding during and after the third stage of labor. PPH is one of the most common obstetrical complications; Early PPH is defined as blood loss exceeding 500 ml within 24 h after vaginal delivery, or blood loss exceeding 1000 ml following

cesarean section (CS) (Morris, et al., 2019).

Additionally, there are some risk factors that have been identified as putting some woman at a higher risk of having a PPH, such as: polyhydramnios, induction of labor and prolonged treatment with oxytocin are found to be independent risk factors for PPH,

predisposition to uterine muscle exhaustion included prolonged and precipitate labor, emergency caesarean section, functional/ anatomical distortion of the uterus as in fibroid uterus and chorioamnionitis (Sandven, et al., 2017).

Furthermore, immediate complications of early postpartum hemorrhage are disseminated intravascular coagulation (DIC), Hypovolemic shock, severe anemia, clotting disorders, acute renal failure, sepsis, wound infection, pneumonia, venous thrombosis or embolism and acute lung injury, damage to the anterior pituitary gland may result in delay or failure of lactation as well as secondary infertility and Less commonly myocardial ischemia (Committee on Practice Bulletins-Obstetrics, 2019).

Moreover, the management of early PPH requires that all health team and the facilities that they work within in a well-established protocol and ensure all maternal health team have access to necessary supplies and equipment to effectively intervene to manage patients with early postpartum hemorrhage. Moreover, first line of treatment of early PPH is medical therapy that consist of 1- Administration of an uterotonic drugs or Oxytocic's (oxytocin, ergometrine, prostaglandins, syntometrine), 2- controlled cord traction CCT and 3- uterine massage (Diaz, et al., 2018).

**Mechanical procedures for early postpartum bleeding 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 and the second line of

early PPH surgical therapy 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 in the case of failure of medical therapy) (Margarido, et al., 2019).

Nurses have a major opportunity and responsibility to help women to understand risk factors and to motivate them to adopt healthy life styles that prevent early postpartum hemorrhage The nurse must offer competent nursing care according to patient health needs utilizing best evidence research findings as a base for her competent nursing care provided to patient with early postpartum hemorrhage (WHO, 2016).

Nurses play a multidisciplinary role as a direct care provider, health educator and counselor, as a researcher and as administrator.

### **Significance of the study:**

According to world health statistics 2015, Every day, approximately 830 women died from preventable causes related to childbirth, or 300 000 mothers annually (WHO, 2016) . Among 830 deaths occurs daily, 250 women are died due to postpartum hemorrhage (PPH).Out of these deaths 99% of all maternal deaths occurred in developing countries (WHO, 2017). In Egypt, especially in rural areas, That's it still needs a radical solution. Moreover, According to Damanhur teaching hospital statistics 2017, approximately, the incidence of early PPH is 12.5%. Furthermore; early PPH is the nursing concern because she plays a multidisciplinary role as a care giver for early detection,

screening and referring patients with early postpartum hemorrhage to minimize maternal and fetal morbidity and mortality (Committee on Practice Bulletins-Obstetrics, 2019).

### **Aim of the study:**

The aim of the study was to investigate the effect of guideline on improving nurses' practices for patients with early postpartum hemorrhage.

### **Research Hypothesis:**

Nurses who received guideline about early postpartum hemorrhage had shown better knowledge, practices and satisfaction more than those who didn't participated.

### **Subjects and Methods:**

**Technical Design:** The Technical design used for the study was included setting, study design, and subjects as well as tools for data collection.

### **Setting:**

The study was conducted at obstetric departments in Damanhur teaching hospital at Beheira Governorate.

### **Study Design:**

A Quasi- experimental (an intervention study) pre and posttest.

### **Sample:**

**a) Size:** All nurses (44nurses) who were working at obstetric departments and accepted to participate in study, at previously mentioned study setting. Four nurses were excluded from the total sample due to their participation in the pilot study.

**b) Type:** purposive sample was included.

### **Exclusion Criteria:**

- Age less than 18 year and more than 40years.
- Working as an administrator nurse.
- Education with Bachelor of Nursing.

### **Tools of Data Collection:**

**Tool I:** Structured interviewing questionnaire schedule which included two parts:

**The first part:** assessed nurse's general characteristics (age, level of education, qualification, area of residence, years of experience and attendance of training programs) involved six questions.

**The second part:** assessed nurses' knowledge regarding early postpartum hemorrhage. Which involved 14 multiple choice questions.

**The knowledge scoring system** was 2 score for correct answer and one score for incorrect answer. The total knowledge correct score was ( $\geq 60\%$ ) while, the total knowledge for the incorrect score was ( $< 60\%$ ).

**The second tool was an observational checklist:** to assess nurse's practices while providing patient's care every 15minute for the first four hrs with early postpartum hemorrhage.

**Scoring system for an observational checklist** was 2 score for correct practice and one score for incorrect

practice. The total correct practice was scored as  $\geq 60\%$  while incorrect practice total scored as  $< 60\%$ .

**The third tool was "Nurse Satisfaction tool" adopted from (Sayed, et al., 2015), and included two parts.**

**The first part:** assessed nurses' satisfaction regarding an instructional supportive guideline which involved eight statements. Upon which nurses respond as satisfied, dissatisfied and uncertainly satisfied.

**The second part:** assessed barriers that prevent nurses to comply with implemented guideline while providing patient' care which involved six statements. This was evaluated eight weeks post intervention.

**An instructional supportive guideline** was designed by researcher according to nurses' learning needs pre intervention based upon advanced related literature.

#### **Content validity and reliability:**

All tools of data collections were developed and sent to three specialized university Prof. according to their comments, modification were considered.

#### **Pilot study:**

A pilot study was conducted for 10% from total number of sample to evaluate the simplicity and clarity of tools that was used in the study.

#### **Ethical Consideration:**

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- The researcher clarified the aim of the study to each nurse participated in the study.
- Written consent was obtained from each nurse to participate in the study.
- A letter of approval was sent to the director of Damanhur teaching hospital included the aim and the setting of the study.
- The study tools were ensuring that the study didn't touch participant's dignity, culture, traditional and religious aspects and didn't cause any harm for any participant during data collection. Also didn't include any immoral statements and respect human rights.
- All tools of data collection were burned after statistically analysis to promote confidentiality of the study.

#### **Operational design:**

The study was implemented through three phases included the preparatory, implemented and evaluation phase.

#### **Phase one (preparatory Phase):**

The researcher was reviewed the current advanced national and international literature related to the study topic, then prepared tools for data collection and designed an instructional supportive guideline. Finally, pilot study was conducted.

#### **Pilot Study:**

A pilot study was carried out on 10% of sample size to assess study setting, availability of essential equipment and tools

content validity according to statistically analysis of a pilot study, then modification was considered.

#### **Phase two (implementation phase):**

The researcher was attended the previous mentioned study setting for three days per week (from 9 am to 9 pm).

▪ **Firstly**, the researcher was interviewed three nurses /day according to sequence of their attendance in hospital registration book and explain the aim of the study to obtain their oral consent (duration of each interview 20 min). Interview was conducted in a separate place to maintain confidentiality of the study.

▪ **Secondly**, nurse's practices were assessed using an observational checklist, while they are providing patients care with early postpartum hemorrhage.

▪ Each day, two nurses' practices were assessed from 9 Am to 9 pm.

▪ After the completion of assessment of nurses' practices. An instructional supportive guideline was implemented then 10 sessions for each program for six months duration of each session was 20 minute, number of participant (6) nurse / session. Three sessions for theoretical learning and seven sessions were implemented for practical training.

▪ Methods of teaching were (group discussion, lectures, brain storming, demonstration and bed side teaching).

▪ Media were (lab-top computer, figures, 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 guideline on improving nurses' knowledge and practices among patients with early postpartum hemorrhage. All tools of data collection were used pre-, immediately and 8 weeks post-intervention but the nurses' satisfaction tool was used only eight weeks post intervention. Nurses' practice was assessed on three patients three times then the mean was obtained for statically analysis.

#### **Limitation of the study:**

A Supportive instructional guideline implementation was postponed from one to eight days due to lack of cases with early postpartum hemorrhage and an official holiday that are (25 April, 29 April, 1 May, 3 June – 6 June, 30 June, 23 July, 11-15 August, 31 August, 6 October, 9 Novembre.

#### **Administrative Design:**

Approval letter to conduct the study was obtained from the head of obstetrics and gynecological nursing department then dean of the Faculty of Nursing at Ain Sham University, and then finally sent to the director of Damanhur teaching hospital.

#### **Statistical Design:**

The appropriate statistical methods and tests will be used for analysis of results, presented in tables, figures and graphics as required.

**Results:**

**Table (1):** showed that, there was a marked improvement in total knowledge of the studied sample about early postpartum hemorrhage post implementation of an instructional supportive guideline with highly statistically significant difference at ( $P = < 0.01$ ) between pre, immediate post and eight weeks post implementation of an instructional supportive guideline.

**Table (2):** showed that, there was a marked improvement in total practical skills of the studied sample about nursing care of early postpartum hemorrhage post implementation of an instructional supportive guideline with highly statistically significant difference at ( $P = < 0.01$ ) between pre, immediate and eight weeks post implementation of an instructional supportive guideline.

**Table (3):** showed that, (82.5%) of studied sample benefited from any recent information from the guidelines. Also, (80% & 77.5%) of studied sample

**Table (1):** Frequency distribution according to the studied sample total correct and incorrect knowledge related to early postpartum hemorrhage pre, immediate and eight weeks post intervention. (n=40).

Items	Pre-instructional supportive guideline		immediate Post-instructional supportive guideline		Eight weeks post instructional supportive guideline		Friedman test	
	N	%	N	%	N	%	X <sup>2</sup>	p-value
<b>Correct</b>	10	25	32	80	28	70		
<b>Incorrect</b>	30	75	8	20	12	30	34.19	.000**

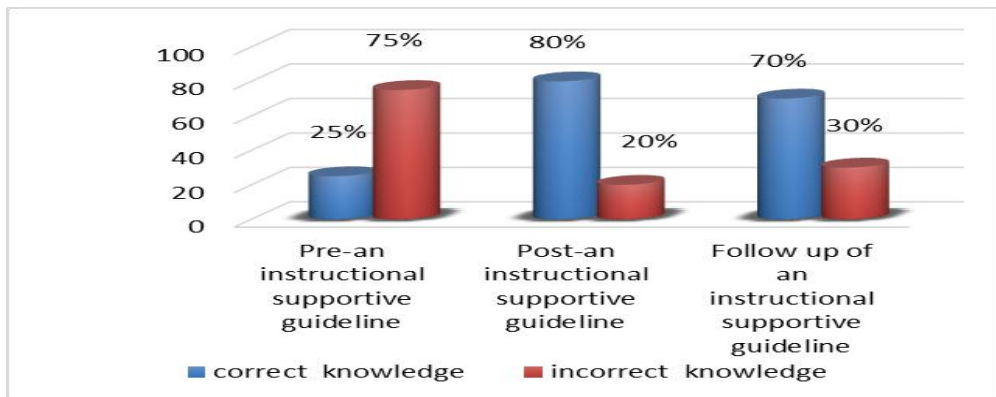
\*\*highly statistically significant at ( $P = < 0.01$ )

learn new skills after the implementation of the guideline and satisfied about the scientific material of the guideline, respectively.

**Table (4):** showed that, (75%) of the barriers that prevent nurses to comply with the implemented guideline immediate post and eight weeks post intervention were increasing the perception of sudden emergencies cases. Also, (80%) of the barriers were absent of nurses.

**Table (5):** shows that, there was a positive correlation between total knowledge and total practice among the studied sample regarding early postpartum hemorrhage at pre, immediate and eight weeks post an instructional supportive guideline.

**Table (6):** showed that, there was a positive correlation between total practices among the studied sample regarding early post-partum hemorrhage, satisfactions and barriers at eight weeks post an instructional supportive guideline.



**Figure (1):** Frequency distribution according to the studied sample total correct and incorrect knowledge related to early postpartum hemorrhage pre, immediate and eight weeks post intervention. (n=40).

**Table (2):** Frequency distribution according to the studied sample total correct and incorrect practices related to early postpartum hemorrhage pre, immediate and eight weeks

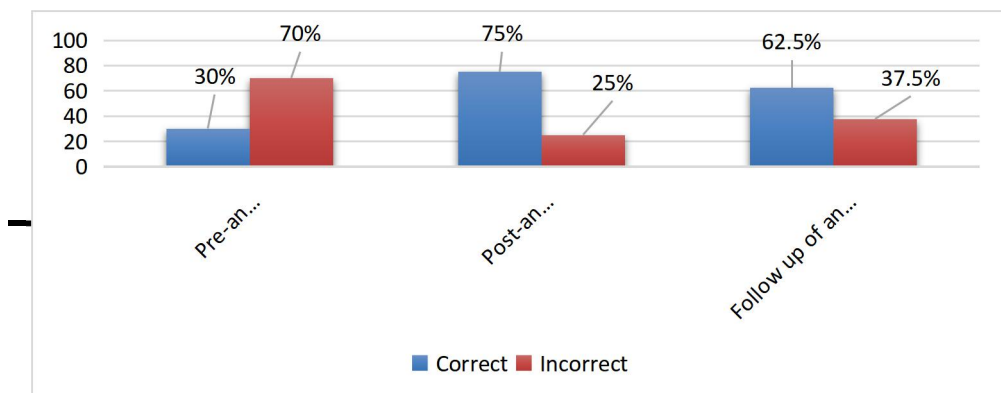
\	Pre- instructional supportive guideline		Immediate Post-instructional supportive guideline		Eight weeks post instructional supportive guideline		Friedman test X2	p-value
	N	%	N	%	N	%		
Correct practical skills	12	30	30	75	25	62.5		
Incorrect practical skills	28	70	10	25	15	37.5	32.74	.000**

post intervention. (n=40).

\*\*highly statistically significant at (P= < 0.01)

**Figure (2):** Frequency distribution according to the studied sample total correct and incorrect practices related to early postpartum hemorrhage pre, immediate and eight weeks post intervention (n=40).

**Table (3):** Frequency distribution according to the studied sample satisfaction eight weeks post intervention regarding the implemented guideline (n=40).



Items	Satisfied		uncertainly Satisfied		Unsatisfied	
	N	%	N	%	N	%
The guideline enhances nurses' practices.	33	82.5	4	10	3	7.5
Guideline language was clear and easily to be understood and effective.	32	80	6	15	2	5
The aim of the guideline was matched with its content.	28	70	7	17.5	5	12.5
The place of implementing guideline was comfortable with good ventilation and lighting.	31	77.5	8	20	3	7.5
Number of participant was suitable to the place of training.	27	67.5	9	22.5	4	10
The implemented guideline contribute to the development and updating nursing knowledge regarding early PPH.	30	75	8	20	2	5
Session time did not interfere with hospital working schedule.	22	55	12	30	6	15
Guideline was recommended to be replicated for another nurses and another setting in the future.	28	70	8	20	4	10

**Table (4):** Frequency distribution among studied sample regarding to the barriers that prevent nurses to comply with the implemented guideline eight weeks post intervention. (n=40).

Items	yes		No	
	N	%	N	%
Increasing sudden emergencies cases.	30	75	10	25
Absent of nurses.	32	80	8	20
Too much sudden increase number of patients which may lead to overload of work on nurses.	27	67.5	13	32.5
Unavailability and maintance of equipment & lack of hospital policies, procedure booklet.	24	60	16	40
Engaged nurses with emergency administrative work rather than nursing activities.	28	70	12	30
Women misconception regarding nursing care provided.	25	62.5	15	37.5

**Table (5):** Correlation between total knowledge and practices among studied sample related to early post-partum hemorrhage at pre, immediate post and eight



weeks post intervention (n=40).

Item	Total practice at pre- guideline.		Total practice at immediate post - guideline.		Total practice at eight weeks post - guideline.	
	r	P- value	r	P- value	r	P- value
Total knowledge at pre-guideline.	0.452	.000**				
Total knowledge at immediate post- guideline.			0.462	.000**		
Total knowledge at eight weeks post - guideline.					0.458	.000**

\*\*highly statistically significant at (P= < 0.01)

**Table (6):** Correlation between satisfactions + total practices at eight weeks post guideline and barriers. (n=40).

Item	Barriers		Total practice at eight weeks post - guideline	
	r	P- value	r	P- value
<b>Satisfaction</b>	-0.611	.001**	0.499	.003**

\*\*highly statistically significant at (P= < 0.01)

### Discussion:

The present study was aimed to investigate the effect of implementing guideline on improving nurses' practices among patients with early postpartum hemorrhage. This aim was significantly approved within the framework of the present study's research hypothesis which was nurses who received guideline about early postpartum hemorrhage had shown better knowledge, practice and satisfaction more than those who didn't participated. Concerning nurses' knowledge related to early postpartum hemorrhage. The present study research findings revealed that, there was a highly significant improvement of nurse's knowledge post intervention compared to pre intervention.

The present study findings was agreed with (Kumar et al, 2016) who found that there was significantly improvement of nurses' knowledge post intervention compared to pre intervention because he found that guideline (both booklet and education) for the prevention and management of early PPH led to significant improvements in the knowledge of obstetric nurses. Also, the present study was agreed with (Faiza, 2015) who illustrated that there was a highly significant improvement among nurses regarding total knowledge score post intervention compared to pre intervention.

Furthermore, a study was conducted by (Hassan, 2015). Who

pointed out that, there was highly statistically significant difference between pre and post intervention among nurses' knowledge regarding early PPH. This similarity may be due to their sample was from Egyptian community and the same culture. Concerning nurses' practices, the present study implementation of an educational program to maternity nurses as method for continuous updating and improved their knowledge and skills to promote and improve their competences. Thus, there is a clear role in continuing professional development activities of nurses which have ultimate reflection on improving patient's care outcome. Finally, it was observed from present study findings that highly significant relations between nurses' knowledge and their practices. This because nurses' knowledge was considered the base for their practices. This result was supported by **Kaur et al. (2016)**, who had found highly significant association between obstetric nurses' knowledge and their practices. As well as **Mohammed (2015)**, who reported that positive statistically significant correlation between the studied subjects' knowledge score and their practices.

The present study findings had pointed out our attention toward the importance of implemented guideline because it was illustrated from the present study findings that there was a highly retention of study sample knowledge and practices eight weeks post intervention. This is due to the effectiveness and practicability of the implemented guideline. The majority nurses among

studied sample were satisfied with the implemented guideline the majority had reported that guideline' language was easily understood and the aim was matched with its content. Also, the place of implemented guideline was comfortable with good ventilation and lighting.

Additionally, the implemented guideline contributes to the development and updating with advanced knowledge regarding early PPH and enhance nurses' practices. Moreover, the majority among studied sample was suggested to replicate the present study guideline to other nurses in another setting in the future to enhance nurses' knowledge and practices and the majority among nurses was highly satisfied with implementation guideline.

Finally, the present study findings had illustrated that the main barriers that prevent nurses to comply with the implemented guideline for women undergoing early PPH were due to increasing sudden emergencies cases with absent of nurses, unavailability and maintenance of equipment & lack of hospital policies, procedure booklet. Additionally, too much sudden increase number of patients who may lead to overload of work on nurses and engaged nurses with administrative work rather than nursing activities. Moreover, women have misconception regarding nursing care provided.

### **Conclusion:**

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It was observed in the present study findings a highly significant on

enhancing nurse' knowledge, practices and satisfaction post intervention compared to pre intervention. Additionally, the majority among the studied sample was highly satisfied with the application of nursing guideline.

#### **Recommendation:**

- Hospital administrator must direct their attention toward relieving nurses from administrative work and to devote their time for nurses' activities only.
- Design and implement monitoring system to evaluate nurses' practices at obstetric department continuously.
- Designing nursing standards, protocols and guideline for all nurses at obstetric department.
- The present study, implemented guideline was recommended to replicate at another setting and on larger sample.
- Periodically planned pre service, in-service and guideline related to early post-partum hemorrhage.

**Further study investigates** health team immediate intervention related to early postpartum hemorrhage.\

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#### **Conflicts of Interest**

The authors declare that there was no conflict of interest.

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