

Effect of brochure related to early postpartum hemorrhage on enhancing nurses' knowledge, practices and satisfaction

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Abstract: To investigate the effect of brochure related to early postpartum hemorrhage on enhancing nurses' knowledge, practices and satisfaction. **Setting:** At obstetric departments in Damanhur teaching hospital at Beheira Governorate. **Study Design:** A Quasi- experimental (an interventional pre and posttest study). **Sample type:** purposive sample. **Sample size:** 40 nurse **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 had revealed that a highly significant improvement in total knowledge and practical skills among the studied sample pre intervention compared to immediate and eight weeks post intervention.

P= < 0.01. Additionally 83% among studied sample satisfied with the advanced knowledge included in the brochure. **Conclusion:** the present study findings concluded that a significant improvement among studied sample' knowledge and practices post intervention. Also the majority among the studied sample were satisfied with the implemented brochure. The main barriers that represented 75% which prevent nurses to comply with the implemented brochure eight weeks post intervention. **Recommendations:** Nursing standards, protocols and guideline must be designed to enhance nurses' knowledge, practices and satisfaction.

Keywords: early postpartum hemorrhage, Nursing standards, enhance nurses' knowledge.

1. INTRODUCTION

A **brochure** is an informative paper document that can be folded into a template, pamphlet or leaflet. Brochures are promotional documents, primarily used to introduce services for decreasing maternal, fetal and neonatal morbidity and mortality from early Postpartum hemorrhage (PPH). **Early postpartum hemorrhage** is defined by (Clark, 2016 studied in Walden University conducted on 100 students) as blood loses over 500 ml or more from the genital tract within the first 24 hours post the vaginal birth of neonate. **Incidence of early postpartum hemorrhage** was a quarter of all maternal deaths. In total there are 14 million cases of hemorrhage occurred every year in association with pregnancy and childbirth. According to world health statistics 2015, every day, approximately 830 women died from preventable causes related to childbirth. Among 830 deaths occurs daily, 250 women are died due to early postpartum hemorrhage (PPH) (WHO, 2017).

Furthermore, causes of early postpartum hemorrhage can be explained by the 4T's theory: Tone – Uterine atony (70-90%), Retained tissue that was estimated for 6–10% of all cases, Trauma leading to 20% of all cases and coagulation defects that accounting for 1% of all early PPH mortality (**Donati, et al, 2018, studied in Italy, Roma conducted on 620 women**). Additionally, 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 (**WHO, 2016**).

Moreover, the successful management of early PPH must be focused on three components, medical therapy, Mechanical procedures and surgical therapy (**Health Service Executive, 2016. Studied in Benha University Hospital conducted on 65 maternity nurses**). Nurses play a multidisciplinary role as a direct care provider, health educator and counselor, as a manager and as a researcher among patients with early postpartum hemorrhage.

1.1. Significance of the Study:

In Egypt, especially in rural areas, postpartum hemorrhage (PPH) is still one of the main causes responsible for maternal morbidity and mortality. That's it still needs a radical solution. Moreover, According to Damanhur teaching hospital statistics 2017, approximately, the incidence of early postpartum hemorrhage (PPH) was 12.5%. Furthermore; early postpartum hemorrhage (PPH) was 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. No previous studies implemented brochure for early postpartum hemorrhage at Damanhur teaching hospital.

1.2. Aim of the Study: was to investigate the effect of brochure related to early postpartum hemorrhage on enhancing nurses' knowledge, practices and satisfaction.

1.3. Research Hypothesis: Nurses who received brochure about early postpartum hemorrhage had shown better knowledge, practices and satisfaction more than those who didn't participated.

2. SUBJECT AND METHODS

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

Study Design:

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

Sampling:

a) Size: All nurses (44 nurses) who were working 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:

1- Age less than 18 year and more than 40 years.

2- Working as an administrator nurse.

3- Education with Bachelor of Nursing.

Tools of Data Collection:

Three tools were used by the researcher after reviewing the advanced related literature. All tools of data collection implemented pre intervention then immediate and eight weeks post intervention but satisfaction tool was implemented eight weeks post intervention only.

First Tool: 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).

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The second part: assessed nurses' knowledge regarding early postpartum hemorrhage that included the following: (Definition, causes and risk factors, signs and symptoms, complications and nursing management strategies for early postpartum hemorrhage).

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 15 minute for the first four hrs with early postpartum hemorrhage which included 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, odour, components and amount). Encourage neonatal immediate suckling of mother breast. **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" that included two parts:

The first part: assessed nurses' satisfaction regarding an instructional supportive brochure, 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 brochure while providing patient' care which involved **six** statements.

An instructional Supportive brochure was utilized by researcher according to nurses' learning needs.

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.

Ethical Consideration:

- 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.

Field work or Operational design: The study was implemented through three phases included the preparatory, implemented and evaluation phase.

I. Phase one (preparatory Phase):

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

II-Phase two (implementation phase):

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

- **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 brochure was implemented through 10 sessions for each program for six months duration of each session was 20 minute, number of participant (6) nurse / each 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, flipe chart as well as audiovisual aids (data show presentation) and role play.

III. Phase three (evaluation Phase):

This phase was utilized to evaluate the effect of implemented brochure on enhancing nurses' knowledge and practices among patients with early postpartum hemorrhage. All tools of data collection were used pre intervention then 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 statistically analysis.

3. RESULTS

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

Items	Pre-intervention		Immediate Post-intervention		Eight weeks post intervention		Friedman test		
	N	%	N	%	N	%	X2	p-value	
Definition of early postpartum hemorrhage.									
Correct	15	37.5	33	82.5	30	75	27.80	.000**	
Incorrect	25	62.5	7	17.5	10	25			
Causes of early PPH.									
Correct	16	40	34	85	32	80	28.47	.000**	
Incorrect	24	60	6	15	8	20			
Symptoms of early PPH.									
Correct	16	40	36	90	33	82.5	29.50	.000**	
Incorrect	24	60	4	10	7	17.5			
Signs of early PPH.									
Correct			24	60	22	55	26.17	.001**	
Incorrect			16	40	18	45			
Amount of blood loss after normal vaginal delivery.									
Correct	13	32.5	31	77.5	28	70	24.57	.002**	
Incorrect	27	67.5	9	22.5	12	30			
Accurate method to calculate amount of blood loss.									
Correct	10	25	30	75	26	65	24.01	.002**	
Incorrect	30	75	10	25	14	35			
Complications of early PPH									
Correct	12	30	29	72.5	27	67.5	25.70	.001**	
Incorrect	28	70	11	27.5	13	32.5			
Signs of uterine a tony.									
Correct	8	20	30	75	27	67.5	35.10	.000**	
Incorrect	32	80	10	25	13	32.5			
Drugs to promote uterine contractility for managing early PPH.									
Correct	11	27.5	32	80	27	67.5	33.27	.000**	
Incorrect	29	72.5	8	20	13	32.5			
Nursing measures to minimize early PPH.									
Correct	13	32.5	30	75	26	65	28.20	.001**	
Incorrect	27	67.5	10	25	14	35			

Immediate nursing intervention to prevent early PPH.								
Correct	7	17.5	28	70	25	62.5	24.30	.002**
Incorrect	33	82.5	12	30	15	37.5		
Immediate nursing intervention to avoid complications.								
Correct	11	27.5	30	75	26	65	24.90	.002**
Incorrect	29	72.5	10	25	14	35		
nurses complies with calculating and recorded intake and output								
Correct	18	45	35	87.5	32	80	29.20	.000**
Incorrect	22	55	5	12.5	8	20		

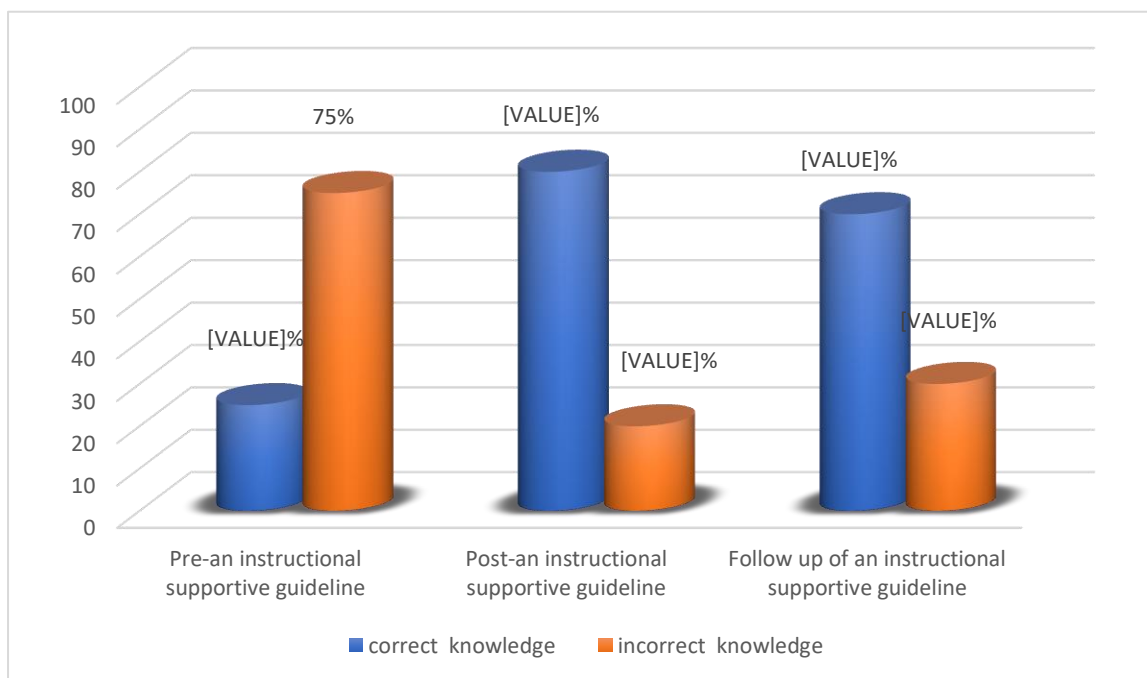


Figure (1): frequency distribution according to the studied sample total correct and incorrect knowledge related to early postpartum hemorrhage pre, immediate and eight weeks post intervention. (n=40).

Table (2): frequency distribution according to the studied sample correct and incorrect practices pre, immediate and eight weeks post intervention related to general and local examination every 15 min among patients with early PPH (n=40).

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
Assess maternal vital signs	10 (25)	30 (75)	28 (70)	12 (30)	25 (62.5)	15 (37.5)	26.68	.001**
Assess maternal level of conscious and administer O2 sat >90%.	8 (20)	32 (80)	26 (65)	14 (35)	23 (57.5)	17 (42.5)	24.82	.000**
Monitor signs of shock, recorded and reported immediately.	12 (30)	30 (70)	27 (67.5)	13 (32.5)	26 (65)	14 (35)	23.17	.000**
Insert cannula to withdraw blood sample immediately.	18 (45)	22 (55)	32 (80)	8 (20)	29 (72.5)	11 (32.5)	26.50	.000**
Send blood sample as Dr. Order to lab.	17 (42.5)	23 (57.5)	32 (80)	8 (20)	28 (70)	12 (30)	26.07	.000**
Administer blood transfusion as Dr. order.	9 (22.5)	31 (77.5)	24 (60)	16 (40)	21 (52.5)	19 (47.5)	20.14	.002**
Monitor blood transfusion flow and reaction recorded and reported.	15 (37.5)	25 (62.5)	28 (70)	12 (30)	25 (62.5)	15 (37.5)	22.98	.001**

Provide privacy comfort and safety measures.	12 (30)	28 (70)	33 (82.5)	7 (17.5)	30 (75)	10 (25)	25.30	.000**
Local examination								
Promote suitable and comfortable patient position during any procedures.	18 (45)	22 (55)	34 (85)	6 (15)	31 (77.5)	9 (22.5)	22.17	.001**
Comply with infection prevention measures during any procedures.	8 (20)	32 (80)	26 (65)	14 (35)	23 (57.5)	17 (42.5)	24.82	.000**
Check the level of uterine fundus and contractility.	6 (15)	34 (85)	24 (60)	16 (40)	23 (57.5)	17 (42.5)	25.12	.000**
Massaging the uterus as Dr order.	9 (22.5)	31 (77.5)	25 (62.5)	15 (37.5)	21 (52.5)	19 (47.5)	20.14	.002**
Record and report vaginal lochia	10 (25)	30 (75)	26 (65)	14 (35)	25 (62.5)	15 (37.5)	30.18	.000**
Observe record and report perineal condition.	11 (27.5)	29 (72.5)	26 (65)	14 (35)	21 (52.5)	19 (47.5)	25.20	.000**
Encourage neonatal immediate suckling to promote uterine contractility to minimize bleeding.	5 (12.5)	35 (87.5)	30 (75)	10 (25)	25 (62.5)	15 (37.5)	29.08	.000**
check mother's legs to record and report any abnormalities.	8 (20)	32 (80)	27 (67.5)	13 (32.5)	23 (57.5)	17 (42.5)	25.17	.000**
Recorded and reported all observations	20 (50)	20 (50)	34 (85)	6 (15)	32 (80)	8 (20)	28.77	.000**

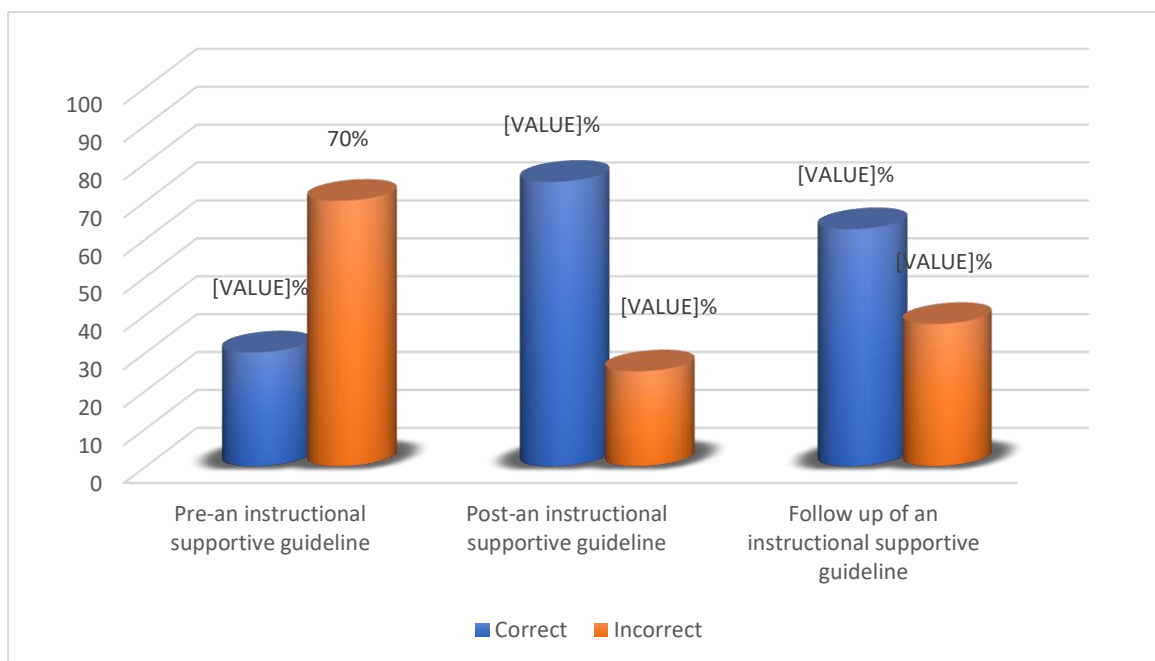


Figure (2): frequency distribution according to the studied sample total correct and incorrect practices related to early postpartum hemorrhage pre, immediate and eight weeks post intervention. (n=40).

Table (3): frequency distribution according to the studied sample correct and incorrect health education provided for patients with early postpartum hemorrhage pre, immediate and eight weeks post intervention (n=40).

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
(A) Health education related to mother *Encourage mother to void every 15 min.	10 (25)	30 (75)	28 (70)	12 (30)	25 (62.5)	15 (37.5)	33.22	.000**

*Instruct about perineal hygiene.	6 (15)	34 (85)	24 (60)	16 (40)	23 (57.5)	17 (42.5)	22.92	.002**
*Differentiate between normal and abnormal vaginal lochia.	11 (27.5)	29 (72.5)	27 (67.5)	13 (32.5)	23 (57.5)	17 (42.5)	30.70	.000**
*Healthy Nutrition during postnatal period.	11 (27.5)	29 (72.5)	30 (75)	10 (25)	28 (70)	12 (30)	22.60	.002**
*Rest and comfort.	5 (12.5)	35 (87.5)	24 (60)	16 (40)	21 (52.5)	19 (47.5)	30.18	.000**
*Exercises during postnatal period.	7 (17.5)	33 (82.5)	27 (67.5)	13 (32.5)	22 (55)	18 (45)	31.04	.000**
*Encourage fluids intake during postnatal period.	8 (20)	32 (80)	28 (70)	12 (30)	24 (60)	18 (40)	27.20	.001**
*Early detection of warning signs.	7 (17.5)	33 (82.5)	27 (67.5)	13 (32.5)	22 (55)	18 (45)	19.04	.003**
*Seeking health services for warning signs.	6 (15)	34 (85)	26 (65)	14 (35)	22 (55)	18 (45)	25.41	.001**
*Followed postnatal schedule visit.	10 (25)	30 (75)	34 (85)	6 (15)	28 (70)	12 (30)	39.40	.000**
(B) Health education related to neonate								
*Encourage early initiation of breast feeding (immediate neonatal suckling)	11 (27.5)	29 (72.5)	27 (67.5)	13 (32.5)	23 (57.5)	17 (42.5)	30.70	.000**
*Rooming in								
*provide accurate stump care	9 (22.5)	31 (77.5)	26 (65)	14 (35)	25 (62.5)	15 (37.5)	24.04	.001**
*baby bath.	7 (17.5)	33 (82.5)	27 (67.5)	13 (32.5)	22 (55)	18 (45)	31.04	.000**
* Followed regular visit during first year of life and vaccination	8 (20)	32 (80)	28 (70)	12 (30)	24 (60)	18 (40)	27.20	.001**
(C) Avoid harm for practices as:								
*FGM	6 (15)	34 (85)	26 (65)	14 (35)	22 (55)	18 (45)	25.41	.001**
* Sitting in warm water	8 (20)	32 (80)	34 (85)	6 (15)	25 (62.5)	15 (37.5)	26.01	.000**
* putting kohl in neonatal eyes.	10 (25)	30 (75)	27 (67.5)	13 (32.5)	21 (52.5)	19 (47.5)	31.60	.000**
* Eating spicy food	5 (12.5)	35 (87.5)	24 (60)	16 (40)	21 (52.5)	19 (47.5)	30.18	.000**
* Prevent smoking	5 (12.5)	35 (87.5)	25 (62.5)	15 (37.5)	23 (57.5)	17 (42.5)	23.17	.001**
*taking un described medication	11 (27.5)	29 (72.5)	30 (75)	10 (25)	28 (70)	12 (30)	22.60	.002**

Table (4): Frequency distribution according to the studied sample satisfaction eight weeks post intervention regarding the implemented brochure (n=40).

Items	Satisfied		uncertainly Satisfied		Unsatisfied	
	N	%	N	%	N	%
The brochure enhances nurses' practices.	33	82.5	4	10	3	7.5
Brochure language was clear and easily to be understood and effective.	32	80	6	15	2	5
The aim of the brochure was matched with its content.	28	70	7	17.5	5	12.5
The place of implementing brochure 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 brochure 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 other setting in the future.	28	70	8	20	4	10

Table (5): Frequency distribution among studied sample regarding to the barriers that prevent nurses to comply with the implemented brochure 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 administrative work rather than nursing activities.	28	70	12	30
Women misconception regarding nursing care provided.	25	62.5	15	37.5

Table (6): Correlation between total correct knowledge and practices among studied sample related to early post-partum hemorrhage at pre, immediate and eight weeks post intervention. (n=40)

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

(*) Statistically significant at $p < 0.05$.

Table (7): Correlation between satisfactions + total practices at eight weeks post intervention and barriers. (n=40)

Item	Barriers		Total practice at eight weeks post – intervention	
	r	P- value	r	P- value
Satisfaction	-0.611	.001**	0.499	.003**

Table (1): Showed that, there was a highly statistically significant difference at

($P = < 0.01$) between pre, post and follow up implementation of brochure, and there was a marked improvement in knowledge among the studied sample about early postpartum hemorrhage post implementation of brochure compared to pre intervention

Table (2): Revealed that, there was a highly statistically significant difference at ($P = < 0.01$) between pre, immediate and eight weeks post implementation of brochure, and there was a marked improvement in practical skills among the studied sample about general and local examination post implementation of brochure related to early postpartum hemorrhage compared to pre intervention.

Table (3): Illustrated that, there was a highly statistically significant difference at

($P = < 0.01$) between pre, immediate and eight weeks post implementation of brochure and there was a marked improvement in practical skills among the studied sample about health education for mothers with early postpartum hemorrhage post implementation of brochure compared to pre intervention.

Table (4): had showed that, (82.5%) among studied sample satisfied from any recent information from the brochure. Also, (80% & 77.5%) among studied sample acquired advanced knowledge and practices post implementation of the brochure and satisfied about the scientific material of the brochure, respectively.

Table (5): Revealed that, (75%) of the barriers that prevent nurses to comply with the implemented brochure eight weeks post intervention due to increasing the number of sudden emergencies cases. Also, (80%) of the barriers were absent of nurses.

Table (6): Illustrated that, there was a positive correlation between total correct knowledge and total correct practice among the studied sample regarding early post-partum hemorrhage at pre, immediate and eight weeks post brochure.

Table (7) had 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 brochure.

4. DISCUSSION

The present study was aimed to investigate the effect of brochure related to early postpartum hemorrhage on enhancing nurses' knowledge, practices and satisfaction. This aim was significantly approved within the framework of the present study's research hypothesis which was nurses who received brochure 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 educational programs (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 findings had revealed that a significant improvement in nurses' practices immediately and eight weeks post intervention. This result is on the same line with (**Health Service Executive, 2016**) who found that nurses had incorrect practice at pre intervention phase and highly improved immediately and three months post intervention. Additionally, this result is in the same line with the present study of (**Motanya, 2015**) who reported that a significant improvement in nurses' practices regarding early PPH after implementation of brochure.

These findings point out the successful effect of implementation of brochure 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 brochure because it was illustrated from the present study findings that there was a highly retention among study sample knowledge and practices

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eight weeks post intervention. This is due to the effectiveness and practicability of the implemented brochure. The majority nurses among studied sample were satisfied with the implemented brochure the majority had reported that the brochure language was easily understood and the aim was matched with its content. Also, the place of implemented brochure was comfortable with good ventilation and lighting.

Additionally, the implemented brochure 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 brochure 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 brochure. Finally, the present study findings had illustrated that the main barriers that prevent nurses to comply with the implemented brochure 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.

The summary, the improvement of the studied sample ' knowledge and practices had shown better not only immediate improvement in nursing knowledge and practice but also eight weeks post intervention. So, the present study hypothesis was approved.

5. CONCLUSION

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 brochure.

6. RECOMMENDATIONS

- 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.
- The present study, implemented the brochure was recommended to replicate at another setting and on larger sample.
- Periodically planned pre service, in-service and the brochure related to early post-partum hemorrhage.
- Further study investigates health team immediate intervention related to early Postpartum Hemorrhage at obstetric department.

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