Effect of Self-care guidelines for Pregnant Women with Placenta Previa On their Maternal and Fetal Outcomes

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Abstract

Background: Placenta previa is a serious pregnancy complication associated with increased risk of bleeding and other complications for both mother and fetus. **Aim:** This study aimed to assess the effect of Self-care guidelines for pregnant women with placenta previa on their maternal and fetal outcomes **Design:** Quasi- experimental research design was used. **Setting:** Conducted at Maternity and Child Minia University Hospital in Egypt. **Sample:** A purposive sample of 80 patients, were equally divided into study and control groups (1:1), between the first of March and the end of October 2023. **Tool:** Three tools were used: A structured interview questionnaire (Socio Demographic and Obstetric characteristics), assessment of general women and fetal health condition & signs and symptoms of placenta previa, and assessment of maternal and fetal Outcomes. **Results:** In this study placenta previa is most common in the age group between 25-30 years (47.5%, 40%), multiparity (86.8%, 83.8%), and previous CS (94.7%, 94. 6%) in study and control group respectively. In additionally 92.5% of the women in study group have a satisfactory care practices regarding total self- care guidelines, compared to only 15% in control group with highly statistically significant differences at p-value <0.01. **Conclusion:** This study concludes that implementing self-care guidelines practices lead to better outcomes for both mothers and fetuses in cases of placenta previa in study group than control group. **Recommendations:** It is recommended that these guidelines be incorporated as a standard protocol in maternity hospitals to support women with high-risk pregnancies and enhance overall outcomes.

Key words: Maternal and fetal outcomes, placenta previa, pregnant women, self-care guidelines.

Introduction:

Pregnancy is generally considered a healthy state, but it can be high-risk if problems arise in the antepartum period or if the pregnancy results in preexisting disorders that could affect the well-being of both the mother and the fetus (**Correa-de-Araujo & Yoon, 2021).**

A primary factor contributing to maternal morbidity and death globally is obstetric hemorrhage. In thirty-three percent of cases of antepartum hemorrhage, placenta previa is known as the etiology **(Yadava et al., 2019)**. According to research done by **Parmar et al., (2023),** placenta previa occurs in a proximately 0.3 to 0.5 percent of all pregnancies, with one occurrence for every three to four hundred pregnancies. Additionally, placenta previa is more prevalent in mothers with a history of uterine scarring and includes the internal cervical os being partially or closely covered by the placenta, which is implemented in the lower uterine segment **(Anuradha et al., 2022).**

Placenta previa is a pregnancy complication that occurs when the cervix partially or completely covered by the placenta. The degree of placental covering over the cervix determines the types of placenta previa into distinct types. The three primary categories are: Placenta Previa marginals : This form of placenta is less severe than other types since it is situated close to the cervix's edge but does not entirely cover it. Partial Placenta Previa: This condition can raise the risk of bleeding during pregnancy and birth since the placenta covers the cervix only partially. The most severe type is defined as total placenta previa, in which the placenta completely covers the cervix and obstructs the baby's entrance through the birth canal. When placenta previa is fully developed, delivery usually requires a caesarean section **(American College of Obstetricians and Gynecologists (ACOG) 2020).**

There are several risk factors linked to placenta previa, including advanced age of women, number of deliveries, several gestations, the use of Assisted Reproductive Techniques (ART), previous occurrences of placenta previa, repeated myomectomy, dilation and curettage procedures, congenital uterine anomalies, intrauterine adhesions, and placental abnormalities like succenturiate battledore lobe. The likelihood of placenta previa increases after two previous cesarean deliveries, with a frequency of 4.1% for women who have undergone three or more cesarean deliveries **(Hemalatha et al., 2021).**

In a study by **Nazneen and Bukhari (2022)**, it was suggested that imaging techniques can be progressively utilized throughout pregnancy's first and second trimesters to facilitate early detection of placenta previa. Early recognition and management of placenta previa are particularly important due to the potential for placental migration during pregnancy. Ultrasonography (US) is considered the primary method for identifying abnormal placental placement during the perinatal period.

Placental location can be determined through trans-vaginal ultrasound scans. In a retrospective study, it was discovered that anterior placenta previa and a prior history of cesarean scarring were independent risk factors linked to the need for hysterectomy and blood transfusion **(Hemalatha et al., 2021).** This condition affects approximately 1 in 200 pregnancies and requires close medical monitoring and specific self-care measures to promote the health and safety of both the mother and the baby **(ACOG, 2022).**

Placenta previa can manifest in a range of ways, as vaginal bleeding that usually occurs during the second or third stage of gestation, painless vaginal bleeding is the most prevalent sign of placenta previa. The bleeding could come on suddenly, heavily, or sporadically. Moreover, abdominal discomfort or cramping can occur if the bleeding is severe; some women with placenta previa may have abdominal pain or cramping. Uterine contractions might be confused with preterm labour in women who have placenta previa. Furthermore, a baby with severe placenta previa may exhibit distressed behaviors, like a rapid heartbeat or decreased movement. It's important to note that not all women with placenta previa will experience symptoms, and some cases may be detected during routine prenatal ultrasound examinations **(ACOG, 2020).**

Complications from placenta previa can affect the mother and the unborn baby in different ways. Excessive bleeding in the mother is one of the most hazards outcomes of placenta previa that results in the detachment of the placenta from the uterine wall prior to birth. However, placenta previa raises the chance of preterm birth, which can lead to health problems for the unborn fetus, including low birth weight and respiratory distress syndrome. In addition, placenta previa occasionally causes insufficient blood flow to the fetus, which can result in fetal growth restriction and potential developmental issues. Moreover, placenta previa frequently necessitates a caesarean delivery to prevent difficulties from vaginal delivery. On the other hand, women who have placenta previa are more likely to experience postpartum haemorrhage after giving birth **(ACOG, 2022).**

Self-care guidelines for expectant mothers who have placenta previa are crucial to manage the condition and reduce the risk of complications. For expectant mothers who have placenta previa, consider these self-care guidelines: avoid strenuous activities and sexual intercourse, regularly attend prenatal visits, consume a balanced diet and promote emotional well-being during pregnancy. Be aware of the signs of bleeding, such as vaginal bleeding or spotting, prepare for delivery and understand the potential need for a cesarean section (CS) due to placenta previa, create a birth plan that addresses the specific needs and considerations related to placenta previa, and join support groups to share experiences, information, and emotional support. Finally, in order to guarantee the best possible result for the fetus and mother, the mother should always follow the counsel and recommendations of the healthcare professional **(ACOG 2020).**

Significance of the Study:

According to estimates, placenta previa causes three to five instances globally for every one thousand births, or approximately thirty percent of maternal fatalities in the Asian population. Result of significant obstetric bleeding linked to placenta previa. A striking rise in frequency linked to the increased number of births via CS **(Mulomb, 2024)**

Pregnancy-related antepartum and intrapartum hemorrhage makes placenta previa a significant contributor to morbidity and death rates among mothers. Additionally, Placenta previa is linked to premature delivery, which triples the risk of newborn mortality. An increased caesarean sections rate is correlated with the occurrence of placenta previa, which was recently calculated to account for roughly 0.5 percent of all pregnancies (**Rao et al., 2021).**

Pregnant women with placenta previa require specialized care and monitoring to manage the condition and prevent complications. Providing clear self-care guidelines can empower these women to actively participate in their own care and recognize warning signs early. Moreover, self-care guidelines have been recommended as a potential approach to promote consequences for pregnant women diagnosed as placenta previa. By investigating the impact of self-care guidelines, such as dietary recommendations, activity restrictions, and monitoring of symptoms, researchers can determine if these interventions can improve outcomes for women with placenta previa. This information is crucial for healthcare providers in developing effective management strategies for this high-risk population.

Enhancing result for maternal and fetus in cases of placenta previa can lead to reduced rates of complications, such as preterm birth and maternal hemorrhage, ultimately improving the overall health and well-being of both the mother and the baby. Therefore, examining the impact of self-care guidelines practice in this population is important for advancing knowledge and improving clinical practice in the management of placenta previa.

I- Research Aim:

This study designed to assess the effect of self-care guidelines for pregnant women with placenta Previa on their maternal and fetal outcomes.

II- Research Hypothesis:

n0: Implementing self-care guideline practices has no effect on pregnant women with placenta previa on maternal and fetal outcomes.

n1: Implementing self-care guideline practices improve maternal and fetal outcomes in pregnant women with placenta previa.

III- Subject and Methods:

Research Design:

Quasi- experimental research design was used for this study.

Research Setting:

The research was carried out at Maternity and Child Minia University Hospital (antenatal & high risk pregnancy unit) in Egypt, which serves as a primary care facility for pregnant women residing in Minia city, neighboring cities, and surrounding villages.

Sample size:

The accurate sample size for this study was determined by use an online sample size calculator, which offered by Raosoft. Consequently, the calculation done with the following parameters: The population size is not explicitly stated but is assumed to be 100 women, which is the total number of placenta previa women attending the antenatal and high-risk pregnancy department at Minia University Hospital for Maternity and Child in the year 2022, the margin of error for the sample is 5%; and the confidence level for the sample is 95%. Accordingly, the sample size calculator (Raosoft) estimates that there are 80 women in the sample, which generally provides a good representation of the population according to the following calculation: The sample size (n) and margin of error (E) are given by:

- $x=Z(c/100)2r\ (100-r)$

- n=N x/((N-1)E2 + x)
- E=Sqrt [(N - n)x/n(N-1)]

Where N is the population size, r is the fraction of responses that you are interested in, and Z(c/100) is the critical value for the confidence level c.

Accordingly, a purposive sample of 80 pregnant women, were equally divided into control and study groups (1:1), as the control group consists of 40 women who received routine hospital care, and the study group consists of 40 women who received self-care guidelines. The data was collected between the first of March and the end of October 2023 in accordance with the subsequent inclusion criteria:

Inclusion Criteria:

1. Pregnant women who are admitted to the antenatal and high-risk pregnancy unit after ultrasound diagnosis of placenta previa lateralis or marginalis.
2. Third-trimester pregnant women diagnosed as placenta previa.

Exclusion Criteria:

- A diagnosis of placenta previa centralis in a pregnant woman.

Data Collection Tools:

Three tools were utilized to collect data for this study to achieve the aim of this study.

Tool I: Interview Questionnaire.

The researcher developed this questionnaire after reviewing of literature to collect data related to placenta previa women. This tool is divided into **2 main parts**.

Part 1: Socio Demographic characteristics, such as: women age, residence, occupation, level of education and phone number.

Part 2: Obstetrical characteristics include questions as number of gravidities, parities, abortion, any complications during previous pregnancies, mode of previous delivery, history of postpartum complications, gestational age of current pregnancy, and types of placenta previa.

Tool II: Assessment tool that includes three parts:

Part 1: Assess maternal and fetal conditions during pregnancy (initial assessment before intervention), maternal condition such as**: (**Weight, height, body mass index, and vital signs: temperature, pulse, respiration and blood pressure), and fetal condition such as: (fetal heart rate and fetal movement).

Part 2: Assess signs and symptoms of woman's placenta previa (two weeks after intervention) such as: Bleeding characteristics as: (amount, color, frequency, with or without pain, place of pain).

Part 3: Assess woman's self- care guidelines practices regarding placenta previa (two weeks after intervention), it involved 19 actions as avoiding raising heavy object, bed rest, check vaginal bleeding for amount and color, avoid clamping stairs, eating high iron meals, monitor and account of fetal movement, follow with health care provider`s instructions about routine activities, encouraging a balanced, nutritious diet with plenty of fluid intake, prevention further bleeding episodes through avoiding vaginal exam, avoid psychological environment changes, avoid nipple stimulation to prevent uterine contractions, to follow the status of fetus , position patient supine with elevated hip or left side lying position, taking tocolytic agents if described, avoid sexual intercourse after 28 weeks, avoid putting anything as tampons and douches into vagina, follow HB level, and follow antenatal visits continuously.

Self- care guidelines practices scoring system:

Self-care guidelines practices checklist involved 19 items. Each action was recorded as one point for done and zero point for not done. The total score ranged from 0-19 point. While the total scores level was calculated as the following: practices were considered satisfactory if the percentage of score is >70 % (14 point or more) and unsatisfactory if percent is 70% or less (13 point or less)**.**

Tool III: Assessment tool to assess maternal and fetal Outcomes after delivery: This tool is divided into three main parts:

Part 1: Assessment for maternal outcomes after delivery such as: (week of gestation at delivery, mode of delivery, and maternal complications during labor as (hysterectomy, infection, blood transfusion, post-partum hemorrhage, internal iliac and uterine artery ligation).

Part 2: Assessment of fetal outcomes after delivery such as: (birth weight, admission to NICU, neonatal death, congenital anomalies, neonatal complication as respiratory distress, and fetal hypoxia.

Part 3: Standardized Assessment tool to assess fetal well-being by Apgar score in the first minute after birth that incorporates five elements: respiratory efforts, heart rate, reflexes irritability, muscle tone and skin color **(Simon, et al. 2021)**.

Validity and Reliability:

For the face and content validity by 5 experts in the field of obstetrics and gynecology nursing specialist the tool has been examined, and 10% of the participants a pilot study was conducted on them (excluded from the study sample), pilot study done to evaluate the clarity and applicability and to agree with the necessary modifications to be made. Furthermore, the tool was examined for its reliability and the obtained values of Cronbach's alpha test coefficient was 0.684, 0.697, and 0.713 for tool I, II, and III respectively. These tests indicated that the tool was highly reliable.

Data Collection Procedure:

The study participants were recruited from the antenatal and high-risk departments of Minia University Hospital for Maternity and Child. The dean of the nursing faculty authorized the insurance of an official letter. In this letter, the aim of the study was summarized before beginning the study and the directors of Minia maternity and child university hospital granted the authorization.

The researcher translated the tool into Arabic and pregnant women were interviewed to define the nature and objectives of the study. At 3 times a week from 9:00am to 1:00 pm, the researcher met women. The researcher defined herself to each recruited mother and explained details about goal of the study. Before the researcher thoroughly clarified each component of the tool everyone gave oral informed approval to share in the study. During the interview, the researcher filled out the tool (I and II) with each woman, the questionnaire took between 15 and 30 minutes to complete for each woman in both groups.

The researcher collects the responses of the pregnant women on all items of questionnaires and to help follow the aim of the study, every question from the pregnant women

was thoroughly explained. The participants in the control group received routine hospital care regarding placenta previa includes: monitoring of maternal vital signs, uterine activity, and vaginal bleeding. However, for the study group, the women received an educational program concerning self- care guidelines practices that should be followed during her pregnancy. The program given in a form of lecture, and the researcher used pictures and videos to help them to understand all information. Every session involved 2-4 women, and took from 40 -50 minutes.

Follow up visits:

First follow up visit (After two weeks of intervention), the researcher ~~was~~ assessed woman's signs and symptoms of placenta previa and assessed the intervention of self- care guidelines practices that provided to them in both groups.

Second follow up visit (immediately after delivery), the researcher met the woman (face to face) and assessed maternal and fetal outcomes for both groups.

Ethical Considerations:

An official letter was obtained by the Minia University Faculty of Nursing's Research Ethics Committee. The dean of the nursing faculty at Minia University authorized the study's conduct.

Permission was given by the directors of the Minia University Hospital for Maternity and Child. Before conducting the pilot study and the main study, oral consent was acquired from the women who volunteered to participate after they were informed about the nature as well as purpose of the research.

Pregnant women's privacy was respected during the data collection process, and they had the right to refuse participation or to withdraw from the research at any moment and without cause. Each woman was given her number instead of her name to maintain her privacy, and they were assured that all of their information would be confidential. The study did not contradict with traditional, cultural, or religious considerations, there were no health hazards.

IV-Statistical Design:

A Statistical Package for Social Science (SPSS) version (28) was used for data entry and statistical analysis. Descriptive statistics, such as means and standard deviations, frequencies and percentages, were used to present the data. The internal consistency of the created tool was evaluated using the Cronbach alpha reliability test. Chi square and Pearson test was used to determine association between variables, probability (p-value) is the degree of significance and if it less than 0.05 was considered statistically significant,

Results:

Table (1): Frequency distribution of the women under study in both groups according to their socio-demographic characteristics

Items	Study group (n = 40)		Control group (n = 40)		*Test of significance*	
	No.	%	No.	%	X^2	P – Value
Age						
15 < 20	5	12.5	2	5.0	4.884	0.181
20 < 25	7	17.5	7	17.5		
25 < 30	**19**	**47.5**	**16**	**40.0**		
30 ≤ 35	9	22.5	15	37.5		
Mean ± SD	**26.5 ± 4.7**		**27.9 ± 4.1**		1.237	0.346
Residence						
Rural	**34**	**85.0**	**30**	**75.0**	0.738	0.390
Urban	6	15.0	10	25.0		
Education						
Illiterates	6	15.0	6	15.0	Fisher test 4.198	0.380
Primary	**18**	**45.0**	**18**	**45.5**		
Secondary	13	32.5	10	25.0		
University	1	2.5	0	0.0		
Diploma	2	5.0	0	0.0		
Occupation						
Housewife	**33**	**82.5**	**34**	**85.0**	0.092	0.762
Employed	**7**	17.5	6	15.0		

Table 1 displays the frequency distribution of the women (study and control group) based on their socio demographic characteristics. Placenta previa is most common in the group`s age between 25-30 years in study and control group (47.5%, 40%) respectively. In additionally, the same table represents the primary educational level is highest in study and control group (45.5%) for both groups. Also, the same table illustrates that, women under the study were most common from rural than urban area in the control and study group (75%, 85%) respectively. Also, 82.5% in the study group and 85% in the control group were housewives, with no statistically significant difference between study and control group regarding age, residence, educational level, and occupation when p-value >0.05.

Table (2): Frequency distribution of the women under study in both groups according to their obstetrical characteristics

Items	Study group (n = 40)		Control group (n = 40)		*Test of significance*	
	No.	%	No.	%	X^2	P – Value
Gravidity						
Primigravida	2	5.0	3	7.5	0.213	0.644
Multigravida	**38**	**95.0**	**37**	**92.5**		
Parity						
	(n=38)		**(n=37)**			
Primiparity	5	13.1	6	16.2	0.140	0.708
Multiparity	**33**	**86.8**	**31**	**83.8**		
History of abortions						
	(n=38)		**(n=37)**			
None	**22**	**57.8**	**22**	**59.6**	0.279	0.869
Once	12	31.7	10	27.0		
More than once	4	10.5	5	13.4		
Mode of previous deliveries						
	(n=38)		**(n=37)**			
SVD	1	2.6	0	0.0	0.377	0.828
CS	**36**	**94.7**	**35**	**94.6**		
Both	1	2.7	2	5.4		
Complications during past pregnancies						
	(n=38)		**(n=37)**			
None	**28**	**73.7**	**19**	**51.4**	4.210	0.122
Placenta previa	0	0.0	3	8.1		
Abortion	**10**	**26.3**	**15**	**40.5**		
History of Postpartum Complications						
	(n=38)		**(n=37)**			
None	**37**	**97.5**	**33**	**89.2**	2.016	0.156
Postpartum hemorrhage	1	2.5	4	10.8		
Gestational age of current pregnancy (weeks)						
35 < 37 week	**32**	**80.0**	**34**	**85.0**	0.346	0.556
37 week or more	8	20.0	6	15.0		
Mean ± SD	**35.35±1.410**		**35.5±0.961**		4.949	**00.0001****

Table 2 demonstrates the frequency distribution of the women under study based on their obstetrical characteristics of the control and study groups; there is no statistically significant difference between any of the study and control groups regarding gravidity, parity, history of abortions, mode of deliveries, complications during past pregnancies, and history of postpartum complications and week of gestation of current pregnancy.

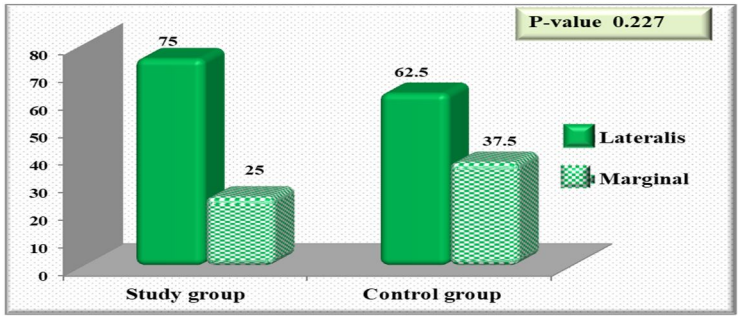

Figure (1): Frequency distribution of the studied women in both groups according to their type of placenta previa

Figure 1 points out that 75.0% of the women in study group and 62.5% in control group have placenta previa lateralis with no statistical significant difference between both groups at p-value > 0.05.

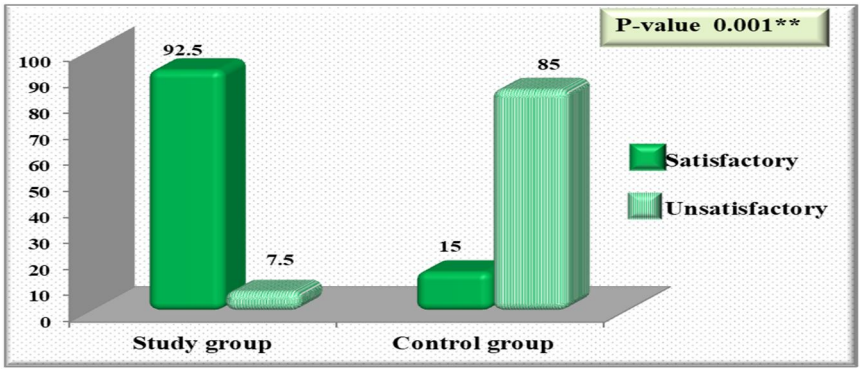

Figure (2): Comparison of the women under study based on their total self-care guidelines practices in study group (after intervention) and routine hospital care in control group

Figure 2 demonstrates that 92.5% of the women in study group have a satisfactory care practices regarding total self- care guidelines regarding placenta previa, compared to only 15% in control group with highly statistically significant differences between study and control group at p-value <0.01.

Table (3): Comparison between study and control group according to their sign and symptoms of placenta previa during pregnancy (two week of intervention)

Items	Study group (n = 40)		Control group (n = 40)		*Test of significance*	
	No.	%	No.	%	X^2	P – Value
Bleeding characteristics						
Amount						
Spots	17	42.5	8	20.0	4.713	**0.030***
Heavy	**23**	**57.5**	**32**	**80.0**		
Color						
Pink	1	2.5	0	0.0	1.386	0.500
Dark red	2	5.0	1	2.5		
Bright red	**37**	**92.5**	**39**	**96.5**		
Frequency						
Once	16	40.0	3	7.5	31.251	**0.0001****
Twice	**23**	**57.5**	**14**	**35.0**		
More than twice	1	2.5	23	57.5		
Characteristics of Pain						
Presence of pain						
Without pain	9	22.5	1	2.5	7.314	**0.007****
With pain	**31**	**77.5**	**39**	**96.5**		
Site of pain						
No pain	9	22.5	1	2.5	14.495	**0.002****
Lower back	6	15.0	5	12.5		
Lower abdomen	**14**	**35.0**	**10**	**25.0**		
Lower back and abdomen	**11**	**27.5**	**24**	**60.0**		
Anemia symptoms						
Color of face and skin						
Pale	**22**	**55.0**	**27**	**67.5**	**1.401**	0.496
Pink	6	15.0	5	12.5		
Yellowish	12	30.0	8	20.0		
Fatigue						
None	**25**	**62.5**	**28**	**70.0**	**1.261**	0.532
Once	5	12.5	6	15.0		
More than once	10	25.0	6	15.0		
Hemoglobin level						
Mean ± SD	**9.4 ± 0.7**		**9.2 ± 0.8**		t=0.908	0.367

Table 3 shows that there is a highly statistically significant difference between study and control group regarding frequency of bleeding, presence of pain and site of pain at p-value<0.01. Also, there is a statistically significant difference between study and control group regarding amount of bleeding, (p-value<0.05), while there is no statistically significant difference between study and control group regarding other signs and symptoms (p-value >0.05).

Table (4): Comparison between study and control group according to their maternal outcomes after delivery

Items	Study group (n = 40)		Control group (n = 40)		*Test of significance*	
	No.	%	No.	%	X^2	P – Value
Gestational age at delivery						
35- 37 week	3	7.5	13	32.5	7.813	**0.005****
More than 37 weeks	**37**	**92.5**	**27**	**67.5**		
Mean ± SD	**38.245±0.747**		**37.650±0.699**			
Mode of delivery						
Normal vaginal delivery	18	45.0	9	22.5	4.528	**0.000***
Cesarean section	**22**	**55.0**	**31**	**77.5**		
Maternal complications						
Hysterectomy	0	0.0	3	7.5	3.512	**0.001****
Infection	0	0.0	1	2.5		
Blood transfusion	**5**	**12.5**	**18**	**45.0**		
Postpartum hemorrhage	**2**	**5.0**	**11**	**27.5**		
Uterine artery ligation	0	0.0	5	12.5		
Internal iliac artery ligation	0	0.0	3	7.5		

Table 4 illustrates comparison based on their maternal outcomes after delivery between study and control group. There is a highly significant difference between study and control group regarding the mode of delivery, p< .01, also blood transfusion most common in study and control group (12.5%,45%) respectively. Blood transfusion and postpartum hemorrhage are the highest between control group (45%, 27, 5%) respectively, but in study group are lower (12.5%, 5%) respectively.

Table (5): Comparison between study and control group according to their fetal outcomes after delivery

Items	Study group (n = 40)		Control group (n = 40)		*Test of significance*	
	No.	%	No.	%	X^2	P – Value
Fetal birth weight						
Low Birth weight (< 2.50 kg)	0	0.0	2	5.0	2.051	0.152
Normal (2.500- 3.999 kg)	40	100	38	95.0		
Mean ± SD	**3.0 ± 0.299**		**2.8 ± 0.4**			
Fetal complications						
Admission to NICU	0	0.0	7	17.5	**2.94**	**0.004****
Neonatal death	1	2.5	2	5.0		
Congenital anomalies	0	0.0	1	2.5		
Respiratory distress	0	0.0	5	12.5		
Hypoxia	4	10.0	8	20.0		
Asphyxia	0	0.0	1	2.5		
Fetal Apgar score						
Appearance (Skin color)						
Cyanotic\pale	1	2.5	1	2.5	12.350	**0.002****
Peripheral cyanosis	7	17.5	22	55.0		
Pink	**32**	**80.0**	**17**	**42.5**		
Pulse (Heart rate)						
Absent	1	2.5	1	2.5	7.222	**0.027***
< 100 b/m	4	10.0	14	35.0		
100 – 140 b/m	**35**	**87.5**	**25**	**62.5**		
Grimace (Reflex)						
No response to stimulation	1	2.5	0	0.0	12.295	**0.002****
Grimace or weak	3	7.5	16	40.0		
Cry when stimulated	**36**	**90**	**24**	**60.0**		
Activity (Tone)						
Floppy	1	2.5	1	2.5	2.053	0.358
Some flexion	0	0.0	2	5.0		
Well flexed and resisting extension	**39**	**97.5**	**47**	**92.5**		
Respiration						
Apneic	1	2.5	1	2.5	15.600	**0.0001****
Slow, irregular breathing	0	0.0	13	32.5		
Strong cry	**39**	**97.5**	**26**	**65.0**		

Table 5 show fetal outcomes after delivery among the study and control group, and represents that there is no significant difference between study and control group regarding weight of baby at birth when p-value >0.05. However, there is a statistically significant difference regarding Apgar score (appearance, pulse, reflexes, respiration) at p-value <0.05.

Table (6): Relation between the studied women's socio-demographic characteristics and total self- care guidelines practices in both groups

Items	Study group (n = 40)				Test of significance		Control group (n = 40)				Test of significance	
	Satisfactory (37)		Unsatisfactory (3)				Satisfactory (6)		Unsatisfactory (34)			
	No.	%	No.	%	X^2	P – Value	No.	%	No.	%	X^2	P – Value
Age												
15 < 20	4	10.8	1	33.3	2.674	0.445	0	0.0	2	5.9	1.475	0.688
20 < 25	7	18.9	0	0.0			2	33.3	5	14.7		
25 < 30	17	45.9	2	66.7			2	33.3	14	41.2		
30 ≤ 35	9	24.3	0	0.0			2	33.3	13	38.2		
Residence												
Rural	33	89.2	1	33.3	**6.790**	**0.009***	3	50.0	27	79.4	2.353	0.125
Urban	4	10.8	2	66.7			3	50.0	7	20.6		
Education level												
Illiterates	3	8.2	3	100.0	**18.378**	**0.001****	0	0.0	6	17.6	21.900	**0.001****
Primary	17	45.9	0	0.0			0	0.0	18	52.9		
Secondary	10	27.0	0	0.0			3	50.0	10	29.4		
University	0	0.0	0	0.0			1	16.7	0	0.0		
Diploma	7	18.9	0	0.0			2	33.3	0	0.0		
Occupation												
Housewife	30	81.1	3	100.0	0.688	0.407	2	33.3	32	94.1	**14.777**	**0.001***
Employed	7	18.9	0	0.0			4	66.7	2	5.9		

Table 6 illustrates relation between personal data and total self-care guidelines practices in both groups, and reported that in the study group there are highly statistically significant relation between total practices and the studied women residence and educational level at p-value <0.01, while there is no statistical significant difference between total practices and age at p-value >0.05. In control group, there is highly statistically significant relation between total practices and the studied women educational level at p-value <0.01, while there is no statistical significant difference between total practices and age and residence at p-value >0.05.

Table (7): Relations between the studied women's total self-care guidelines practices and maternal and fetal outcomes after delivery in both groups

Items	Study group (n = 40)				Test of significance	Control group (n = 40)				Test of significance
	Satisfactory (37)		Unsatisfactory (3)			Satisfactory (6)		Unsatisfactory (34)		
	No.	%	No.	%	P – Value	No.	%	No.	%	P – Value
Occurrence of maternal complications										
Yes	4	10.8	3	100.0	0.001**	1	15.7	26	76.5	0.004**
No	33	89.2	0	0.0		5	83.3	8	23.5	
Occurrence of fetal complications										
Yes	3	8.1	2	67.7	0.003**	0	0.0	15	44.1	0.040*
No	34	91.9	1	33.3		6	100.0	19	55.9	

Table 7 reports that there is a highly statistical significant relation between total self-care guidelines practices and occurrence of maternal complications in the control group at p- value <0.01, and there is statistical significant relation between total self- care guidelines practices and occurrence of neonatal complications in the control group at p- value <0.05.

Discussion:

Placenta previa is a condition where placenta implants in lower uterine segment either very near or covering the internal cervical os. Placenta previa contributes to one third of all cases of antepartum haemorrhage **(Maiti et al., 2020).** Life-threatening problems for the mother, including as shock and hemorrhage, as well as problems for the fetus, can arise from placenta previa such as premature baby, stillbirth, and fetal and neonatal death. It considers major clinical problem, as the pregnant women with placenta previa might have to stay at hospital for examination, she may require transfusion of blood, and she is high risk for preterm labor **(Awad et al., 2021).**

Regarding socio demographic data of the two group, study and control groups, The current study revealed to no statistical significant difference between the study and control group with almost half of study and control group were between 25-30 years old with a mean age of 26.5 - 27.9 in study and control group respectively and had a primary education ,The majority of the study and control group were from rural areas, This result supported by **Saleh et al., (2021)** who reported that the Mean age of the studied sample was 26.5+6.65 ; in a study done in Fallujah Hospital.

In the same context, this finding is supported by **Urmila et al., (2022)** who reported that the Majority of the women aged between 20-29 years and from rural; in a study explained Demographic Characteristics, and Feto maternal Outcomes in Cases of Placenta Previa. Additionally, **Hemalatha et al., (2021**) who reported the same result.

Nonetheless, in disagreement with **Maiti et al., (2020)** who reported that maternal age was more than 30 in half of studied sample; in a study entitled as "Maternal and fetal outcome in placenta previa. Similarly, in congruent with **Fyala et al., (2018)** who studied "Maternal and Perinatal Outcome of Major Degree Placenta Previa at Mansoura University Hospital and reported that the mean age was 31.12 & the majority had secondary education.

Regarding the obstetric history, The present study revealed that the majority of the studied women were multi gravida , multi para ,more than ≥35 weeks of gestation during pregnancy and had previous CS in control and study group , This result supported by **Yadava et al.,(2019)** who reported that the majority of the women with placenta previa were multigravida & multipara and half of them had previous CS .Additionally **Sorakayalapeta & Manoli ,(2019)** who studied "Maternal and perinatal outcome in placenta previa at a tertiary care hospital in Mysore, Karnataka, India and reported the same result .Also , This result is in the same line with the study of **Fyala., (2018)** who explain that majority of pregnant women had a gestation of 36 weeks at the time of birth. Nevertheless, this result is different with **Im et al., (2023)** who observed that nearly half of the studied women with placenta previa were nullipara and only one fourth of them had previous CS.

From researcher point of view, these results are congruent with well-documented relationship between a history of cesarean sections (CS), multiparity, and the occurrence of placenta previa in most previous research. Since the surgical incision from a cesarean section can cause scarring in the uterine lining, which may interfere with the normal implantation of the placenta in subsequent pregnancies and increase the likelihood of abnormal placental placement, such as placenta previa. Additionally, the repeated stretching and remodeling of the uterine wall associated with multiple pregnancies may contribute to abnormal placental implantation.

Regarding classification of placenta previa in the studied sample, the current study illustrated that most studied women in study group and around two thirds of the control group had placenta previa lateralis with no statistically significant difference between both groups This result is different with **Hamed et al., (2022)** who reported that most of the studied women had complete placenta previa; in a study conducted to determine the effectiveness of peri partum integrated nursing care for the patients with placenta previa versus routine care in women health hospital, Assuit University. Also in congruent with **Awad et al., (2019)** who reported that most of the studied women had centralis placenta previa; in a study carried out to analyze maternal and neonatal outcome measures of placenta previa patients presented to Ain Shams university maternity hospital. Additionally, **FYALA et al., (2018)** who reported more than half of the studies women had complete centralis placenta previa.

Regarding the total self-care practices among the study and control group, the current study revealed a highly statistically significant difference between study and control group, where the majority of the study group had a satisfactory level compared to low percent of the control group and the majority of the control group had unsatisfactory level of practices. This result agrees with **Ali et al., (2022)**

who reported improvement in total self-care practices post nursing intervention with satisfactory practices in the majority; in a study conducted to evaluate effect of Self-Care Guidelines on Knowledge and Practice of Pregnant Women with Gestational Diabetes Mellitus.

From researcher' point of view, the role of nurses in promoting adherence to self-care practices is critical. When nurses actively engaged with patients in the study group, adherence to self-care practices significantly improved. This improvement is attributed to the personalized education, support, and follow-up provided by the nurses. Patients in the study group felt more accountable and empowered to follow through with self-care routines, leading to better health outcomes. Conversely, the control group, which receives the routine nursing intervention, exhibited lower adherence rates. This contrast underscores the pivotal role nurses play in patient education and motivation, demonstrating that targeted nursing interventions can effectively bridge the gap between medical recommendations and patient compliance.

Regarding bleeding characteristics in the studied sample, the present study showed that more than half of study group and the majority of control group complain of heavy vaginal bleeding during pregnancy and the majority of control group and study group had bright red vaginal bleeding with pain in lower abdomen and back. This result supported by **Tokue et al., (2019)** who mentioned that almost half of studied women had a massive bleeding; in a study entitled "Risk factors for massive bleeding based on angiographic findings in patients with placenta previa and accreta who underwent balloon occlusion of the internal iliac artery during cesarean section. additionally in the same line with **Bethany et al., (2019)** who reported that bright red heavy bleeding common in women with placenta previa; in a study conducted to assess hemorrhagic morbidity in placenta accreta spectrum with and without placenta previa, also supported with **Do et al., (2023)** who reported the same result in a study carried out to assess risk factors and pregnancy outcomes of antepartum hemorrhage in women with placenta previa.

But, in disagreement with **Faten et al.,(2022)** Who reported that only one quarter complained with heavy vaginal bleeding ; in a study Carried out to assess Experience of Women with First Time Placenta Previa.

Also, This result is different with most previous research as **Wenjie et al., (2020) , Do et al.,(2023) ,Prayudha et al.,(2023) & Shu-Yu et al., (2021)** who reported that Bleeding in women with placenta previa was typically painless and Painful bleeding was not characteristic of placenta previa. While painless bleeding is a common symptom of placenta previa, the possibility of painful bleeding exists in some cases often due to uterine contractions resulting from partial placental separation.

Regarding presence of anemia, the current study findings revealed most of the women under study were anemic and mean± SD of hemoglobin level was (**9.4 ± 0.7** – **9.2 ± 0.8**) in the study and control group respectively, this is in agreement with **Alsammani & Nasralla (2021)** who aimed to determine the fetal and maternal outcomes of major placenta and reported that more than one quarter complained with anemia. Also, Supported by **Kalpana, (2022)** who reported that mean hemoglobin level was 9.25gm%; in a study entitled as "Placenta Previa and Its Maternal and Fetal Outcome in a Tertiary Level Care Hospital in Chengalpattu.

But, on contrary with **Herlin et al., (2022)** who reported that mean hemoglobin level in women with placenta previa is 11 g/dl ; in a study conducted to assess the association between Hb levels in placenta previa patients with apgar scores.

From researcher' point of view, this lower hemoglobin level in women with placenta previa can lead to reduced blood supply to the placenta, potentially impacting fetal health and increasing the risk of adverse outcomes such as fetal growth retardation and neonatal respiratory disorders .Therefore, monitoring hemoglobin levels in pregnant women with placenta previa is crucial for early detection and appropriate management to improve maternal and fetal outcomes.

Regarding maternal complication after delivery in the study and control group, the current study revealed a highly statistical significant difference between the study and control group with a significant improvement in the study group where blood transfusion, postpartum hemorrhage and uterine artery ligation were the most common complications in the studied women. This result agrees with **Urmila et al., (2022)** who reported that hemorrhage, blood transfusion, long hospital stays were the most common complications of placenta previa. Also in the same line with **Jyoti et al., (2022)** who reported that Postpartum hemorrhage wad most common maternal complication after delivery in women with placenta previa and Peripartum hysterectomy due to massive PPH observed in some cases; in a study conducted to assess Maternal and perinatal outcomes in pregnancy associated with placenta previa. To our knowledge, this study is the first study to evaluate effect of self-care guideline on maternal and fetal outcomes of women with placenta previa.

From researcher' point of view, this result implies to importance of applying self-care guideline on improving maternal outcomes for the women with placenta previa. These guidelines help prevent severe bleeding, and a common complication of placenta previa through activity restrictions. They also emphasize regular self-monitoring for symptoms like vaginal bleeding or contractions, enabling early detection and timely medical intervention, proper nutrition and hydration stressed in self-care guidelines that support maternal health and fetal growth. Self-care guidelines also highlight the importance of attending scheduled prenatal visits, allowing for close monitoring by healthcare providers, educating women on recognizing symptoms and knowing when to seek help empowers them to actively participate in their care.

Regarding fetal outcome after delivery, the current study show that there are ahighly statistically significant difference between study and control group regarding weight of baby at birth and Apgar score with a significant improvement in the study group where weight at birth and APGAR score were with in normal range in all women of the study group compared to small number had low weight at birth and low APGAR score in the control group. this result agrees **Alsammani &Nasralla., (2021)** who reported that birth weight was within normal range in women with placenta previa; in their study.

But incongruent with **Pamulaparthi et al., (2019)** Who reported that Prematurity, low birth weight, and low APGAR score were observed in most women with placenta previa ; in a study conducted to assess Obstetric factors and pregnancy outcome in placenta previa. Additionally with **Kalpana ,(2022)** who reported that low birth weight at birth was observed in the majority.

With regards to neonatal complications, the present study clarified a highly statistically significant difference

between study and control group where hypoxia, admission to NICU, respiratory distress and neonatal death were the most common complications in the control group.This result agrees **Nahid et al., (2021)** who reported that neonatal complications included NICU admission, RDS, prematurity, and death; in a study done at Dongola/Sudan".

But incongruent with **Asem et al., (2020)** who reported that neonatal complications in Placenta Previa included congenital malformations; in a study conducted to risk of congenital malformations among singleton births in women with placenta previa.

From researcher' point of view, self-care guidelines emphasize the importance of maternal nutrition, hydration, and avoiding activities that may trigger contractions or bleeding by maintaining optimal maternal health, these practices contribute to better fetal growth and development, reducing the chances of low birth weight and other complications. Educating women on the signs of preterm labor and the importance of seeking immediate medical attention can lead to quicker responses to any emerging issues, further safeguarding neonatal health. Overall, a structured self-care regimen plays a crucial role in managing pregnancies complicated by placenta previa, ultimately improving neonatal outcomes.

Regarding the relation between personal data and total self-care practices in both groups, the current study revealed a highly statistically significant relation between total practices and the studied women residence and educational level at p-value <0.01 in the study group, while there is no statistical significant difference between total practices and age at p-value >0.05. In control group, there is highly statistically significant relation between total practices and the studied women educational level at p-value <0.01, while there is no statistical significant difference between total practices and age and residence at p-value >0.05.This result agrees with **Belayneh et al., (2022)** who reported that higher education level are significantly related to adherence to self-care recommendations among heart failure patients. Also, Supported with **Addisu et al.,(2020)** who reported the same result in a study carried out to examine Nonadherence to Self-Care Practices, Antihypertensive Medications, and Associated Factors among Hypertensive Patients in a Follow-up Clinic at Asella Referral and Teaching Hospital, Ethiopia.

But, Incongruent with **Dahanayake et al., (2023)** who reported that Sociodemographic factors did not influence adherence to self-guidelines practices among post-MI patients in the study, indicating no significant association between the two variables; in a cross-sectional study of the knowledge of post-myocardial infarction patients in a low-middle-income country regarding myocardial infarction and adherence to secondary preventive strategies practices in India.

Also , This result isn't in the same line with **Zhenzhen et al.,(2020)** who reported that age influence adherence to self-management behaviors among patients with type 2 diabetes and hypertension and older patients were more likely to adhere to diet therapy and self-monitoring/self-care ؛ in a study to examine the socio-demographic correlates of patient adherence to self-management behaviors and the mediating roles of health attitudes and self-efficacy among patients with coexisting type 2 diabetes and hypertension.

From researcher' point of view, the relationship between educational level and adherence to self-care practices is well-documented and significant with higher education generally leading to better adherence and improved health outcomes. This correlation can be attributed to several factors. First, higher education often enhances health literacy, enabling individuals to better understand medical instructions and the importance of following self-care routines. Additionally, educated individuals are more likely to seek out information, understand the implications of their health behaviors, and adopt healthier lifestyles. Conversely, those with lower educational levels may struggle with comprehending complex medical advice, which can hinder their ability to effectively manage their health.

Regarding the relation between total self-guidelines practices and occurrence of maternal and neonatal complications in both groups, The current study revealed a highly statistical significant relation between total self-guidelines practices and occurrence of maternal and neonatal complications in both groups at p- value <0.01.

In both groups, the majority of studied women who had satisfactory practices and their neonates were free from any complications, While the majority of studied women who had unsatisfactory practices and their neonates complained of maternal or neonatal complications. This result agrees with **Fathy El-sayed et al., (2022)** who concluded that application of prenatal care protocol has a positive effect in improving maternal and neonatal outcomes in pregnant women with placenta accreta. As there were highly statistically significant differences between study and control groups regarding admission to hospital before delivery, there were highly statistically significant differences between neonatal outcomes in study and control groups as regarding preterm birth, Apgar score.

From researcher' point of view, Adherence to self-care guidelines is crucial for women with placenta previa to minimize the risk of maternal and neonatal complications. Placenta previa, where can lead to severe bleeding and other complications if not managed properly. Women who diligently follow self-care practices, such as avoiding strenuous activities, adhering to bed rest recommendations, and attending all prenatal appointments, tend to experience fewer complications. These practices help in monitoring and managing the condition more effectively, reducing the likelihood of premature labor and the need for emergency interventions. Conversely, poor adherence to self-care guidelines can lead to increased incidences of hemorrhage, preterm birth, and neonatal complications, such as low birth weight and respiratory issues. Therefore, strict adherence to self-care guidelines is pivotal in improving outcomes for the mother and the baby in cases of placenta previa.

Conclusion:

The present study concluded that pregnancy-related complications for both mothers and fetuses are lower in the study group that follows self-care recommendations. Moreover, applying self-care guidelines practices led to better outcomes for both mothers and fetuses in cases of placenta previa in study group than control group.

Recommendations:

Based on the study findings, it recommended that: Apply self-care guidelines as protocol in maternity hospitals for management the women with placenta previa to promote fetal and maternal outcomes.

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