Novelty Journals

ISSN 2394-7330

International Journal of Novel Research in Healthcare and Nursing
Vol. 9, Issue 1, pp: (37-51), Month: January - April 2022, Available at: www.noveltyjournals.com

Effects of peri partum integrated nursing care for placenta previa versus routine care: randomized control trail

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Abstract: **Back ground: Placenta previa is one of the most serious complications during pregnancy and is associated with numerous adverse maternal and fetal-neonatal complications. Aim: Determine the effectiveness of peri partum integrated nursing care for the patients with placenta previa versus routine care. Design: (randomized control trail) .Setting: This study was conducted at Woman's Health Hospital, Assiut University, emergency department and inpatient department. Sample: A convenience sample, 100 patients (study &control group1:1) Tools: Structured Interview Questionnaire& observation checklist were used. Results: Finding revealed that the Mean age 29.18 &31.16 in group A &B respectively, There was statistical significant difference between two groups according to maternal and fetal complication .And showed highly statistical significant difference regarding the patients satisfaction about care introduced. Conclusion: Nurses have very crucial role in the treatment of placenta previa , integration of nursing staff in the treatment of women with placenta previa is valuable and helps proper management. A satisfactory significant difference was found between study group and control group about care introduced Recommendations: The study recommends focused on Application of Integrated nursing care for the patients with placenta previa, can improve treatment success rate, decrease complications and upgrade nursing quality.**

Keywords: **Fetal complication, Maternal complication, Placenta previa, randomized control trail.**

1. INTRODUCTOIN

The placenta previa is ones of the further dangerous conditions during pregnancy and is associated with several adverse maternal and fetal-neonatal complications. Many of these are direct outcomes as maternal antepartum and intra-partum hemorrhage **(Silver.,2015)**

The term of placenta praevia are utilized when the placenta lain closely overstayed on the internal os. For pregnancy at some more than 16 weeks of gestation the term low-lying placenta are used when the placental edge is less than 20 mm from the internal os on trans-abdominal or trans-vaginal scanning (TVS) **(RCOG., 2018)**

The classification of Placenta previa is divided into four categories according to the distance from placental edge to internal os: low-lying placenta, marginal placenta, partial placenta, and total placenta previa, this classification system is useful in the management of cases of placenta previa. **(Ishibashi et al, 2018)**

The pathogenesis of the placenta previa would unidentified. One hypothesis is that the existence of areas of sub optimally vascularized endometrium in the upper uterine cavity due to previous surgery or pregnancies enhances implantation of

trophoblastic or unidirectional growth of trophoblast toward the lower uterine cavity. Otherness presumption is that in particular broad flattens area of placental, as in multiple parities or in due to decrease utero placental perfusion and increases the possibility that the placenta will overlay or exceed on the cervical os. **(Lockwood and Russo, 2017)**

Placenta previa diagnosis by sonography is a simple, safe and accurate method. Trans- vaginal sonography might use to investigating placental localization any time in pregnancy when the placenta is believed to be dipped lying. Trans vaginal are noticeably more accurate than trans- abdominal sonography and safety well established. **(Bhutia Pet al, 2011)**

The risk factors related with a broadened risk of placenta previa are progressed maternal age, past abortion, grand multiparty, past history of Caesarian Section, and smoking amid pregnancy. Patients with placenta previa must minimize activity to avoid rebreeding. Moreover, examinations of pelvic and sexual intercourse must be avoiding. **(Almnabri et al, 2017)**

Nurses play a vital role in care for the patients with placenta previa at- antenatal, clinical evaluation, crucial thinking, decision making suitable preparation and appropriate emergency obstetric care and resource allocation must be rapid and suitable to enhance the likelihood of positive outcome of late ante partum hemorrhage for mother, fetus and neonate as well as decreasing mortality and morbidity. **(Ranjana, 2016)**

The patient's satisfaction and nursing-sensitive quality indicators are imperative to improve the nursing quality. In clinical practice, more attention should be paid to PP and quality sensitive indicators of PP should be constructed and carried out to prevent its risk at an early stage. The key to improve the nursing quality of PP in obstetrics is to improve the evaluation method of nursing quality, construct sensitive indicators and evaluate the sensitive indicators outcome of PP **(Gao et al, 2018)**

Significance of the study:

The placenta previa remains a risk factor for various maternal complications. The prevalence rate varies between as high rate of 1 in 100 to as low rate as 1 in 1000 live births. These conditions in general are found in 0.4 % to 0.6 % of all births. Placenta previa is a rare disaster connected with high incidence of maternal morbidity and mortality. The incidence of placenta previa is increase because of the higher rate of caesarean section being done, and a trend of child bearing at a later age among the women. **(Arain et al, 2016)**

Placenta previa (PP) are the obstetric complications that take place in the second and third trimesters. It might lead to grievous morbidity and mortality to both the maternal and the fetal. It is consider one of the major causes of vaginal bleeding in the second and third trimesters. Placenta previa held about 0.4 % gravid women and it's a deaths rate of 0.03% **(Zakherah etal, 2018)**

Aim of the study:

Determine the effectiveness of peri partum integrated nursing care for the patients with placenta previa versus routine care.

Research Hypothesis:

The patients with integrated nursing care of placenta previa would be better than the patients with routine care.

Study design:

Experimental design: (Randomized Control Trail)

Setting:

This study was conducted in Woman's Health Hospital, Assiut University, emergency department with logistic capacity 8beds, and inpatient department (the fourth and fifth turn) with logistic capacity approximately 100 beds. These units provide services for all patients who are resident in Assiut city and neighboring city and villages.

Sample:

A convenience sample was used, the total sample was including (100) patients with placenta previa, divided into two group**1:1**

- **Group A (study group):** 50 patients.

- **Group B (control group):** 50 patients.

Tools of the study

Tool I-A structured Interview Questionnaire

This questionnaire was developed by the researcher after reviewing of literature. This tool was divided into **2** main parts.

-Part (1) personal data:

-Includes: names, age, parity, obstetric history, past history and current data.

-Part (2) baseline and assessment data of the patients:

-vital signs, blood loss amount, mode of delivery, fetal out comes, maternal out comes, patient satisfaction

Tool II- An observation checklist:-

It was concerned with assessing the patients regarding nursing care of placenta previa .This tool was developed by researcher according to guideline of **Royal College of Obstetricians and Gynecologists, 2018)**, and divide into three main parts: preoperative, intraoperative and postoperative.

Part (1) pre-operative: includes assessment of women general condition, reserved blood and Hemoglobin level

Part (2) Intra-operative: Includes assessment of vital signs, hypothermia and management of hypothermia

-Part (3) Post-operative: Includes maternal complication (e.g. DIC, PPH& Maternal death), fetal complication (e.g. IUGR& Fetal death) and woman satisfaction about care introduced in the hospital

preparation phase

Phase 1:

A written approval taken from director of Woman's Health Hospital to conduct this study and oral consent taken from the patients in the study. The purpose and nature of the study was explained for directors and every interviewed patients .Participant patients have ethical right to accept or refuse participation in the study, the information that obtained are confidential and used only for the purpose of the study

-Validity and Reliability:

The content validity was used to assess the study tools. Item-Level Content Validity Index (I-CVI) was calculated by a panel of five experts rating each scale's items for its relevance to the construct of health care. The ratings were on a 4-point scale with a response format of 1 = not relevant to 4 = highly relevant.

TheI- CVI for each item was computed based on the percentage of experts giving a rating of 3 or 4, indicating item relevance. The content validity index for the total scale (S-CVI) calculated by averaging the I- CVI responses from the five experts and dividing by the number of items, was equal to 96. A rating of 90 is considered to be an acceptable standard for an S-CVI.

-pilot study

A pilot study was carried out before starting data collection on 10% of patients (10 patients), included in the sample.

Implementation phase

- The process of data collection and implementation consumed, in the period from February 2019 to February 2020.

- All patients of placenta previa, admitted during this period, were selected as research subjects. According to different conditions

-Patients were randomly divided into two groups by days

- Case range 1-2 patients/day, approximately 3 hours /patients

-A total of 50 patients receiving integrated nursing care were included in the study group, called group **A.** this occur in days of Saturday, Monday and Wednesday.

- While 50 patients receiving routine nursing were included in the control group, called group **B** this occur in days of Sunday, Tuesday and Thursday.

- The process of data collection and caring implementation starting from 8:30am to1:30pm.

-Before the start of the study, oral consent was obtained from the patients.

-The researcher introduces her-self to all patients and staff member working in the departments and explained the purpose and importance of the study hence.

-The current study explored the effects of integrated nursing care applied on improving the clinical efficacy to the patient of placenta previa

- **The study group -A-**:

-Was given integrated nursing care, based on guideline of **Royal College of Obstetricians and Gynecologists, 2018)**, to prevent complications caused by placenta previa and improving outcome.

- The patient keeps closely monitoring, closely observing changes of various indicators, including: vital signs, fetal heart rate monitoring, vaginal bleeding volume, and uterine contraction.

- Thermal resistance warming blankets were used to keep the patients warm.

-The temperature of corresponding infusion was heated by covering with linen.

- After the operation, health team regularly inspected the maternal condition.

-This method may improving emotional status of the maternal and enhances the confidence of recovery after operation.

- Psychological assurance before and after operation was performed.

Assess anxiety level of the patient.

Reduce the patient's fair

Reduce the patient's pain

Reduce the patient's stress about her baby

Offer additional comfort and rest to the patients

Explain any procedure to the patients to reduce the stress

Spiritual enhance by participation in caring process

- **The control group- B-:**

- was given routine nursing care for placenta previa.

-The researcher observes the patient under routine care during preoperative, intra operative and postoperative period

- Before implementation of the operation, the health team introduced possible interventions.

-They worked to constantly strengthen communication, aiming to improve the compliance of patients.

- After the operation, the researcher close observation of the patients and the health team strictly followed the doctor's instructions, treating the patients with the appropriate drugs.

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All patients will include randomly assigned into two main groups:-

	study group (A)	**Control group (B)**
Preoperative care	**- Complete bed rest** **-Assess baseline vital every 5-15 minutes.** **-Assess fetal heart sounds** **- The patient fully investigated (CBC, blood group) and ultrasound** **-Monitor uterine contractions to establish the progress of labor of the mother.** **- Apply sterile vulval pads** **-Assist the patient in a side lying position when bleeding.** **-Evaluate the patient for hysterectomy option and provide support and reassurance.** **-Preparation for operation.**	**-Observe the patient under routine care during preoperative period.**
Intraoperative care	**Assess vital signs, blood loss, maternal and fetal health.** **- NPO and monitoring during anesthesia and operation for any complication.** **-Start I.V infusion of saline or Ringer's lactate** **-Blood replacement as deemed necessary (based on amount of bleeding and maternal vital signs)** **- Insert urinary catheter** **- Monitor intake and output.** **-Monitoring p.t for hypothermia and preventing it using warming of infusion fluid.** **- Fetal APGAR score and vital signs after delivery**	**-Observe the patient under routine care during intraoperative period.**
Postoperative care	**-Monitoring maternal state.** **-Monitoring fetal state.** **-Monitoring patient for any complication** **-Evaluating patient satisfaction**	**-Observe the patient under routine care during postoperative period.**

Phase III: (Evaluation phase)

The evaluation was done by the researcher to evaluate the effect of integrated nursing care provided to patients with placenta previa.

Statistical analysis:

Date entry and data analysis were done using SPSS version 22 (Statistical Package for Social Science). Data were presented as number, percentage, mean, standard deviation. Chi-square test and Fisher Exact test were used to compare between qualitative variables, independent samples t-test was used to compare quantitative variables between groups. P-value considered statistically significant when $P < 0.05$.

Table (1): Distribution of Personal data of the patients (N=100)

Variables	**Group A (n= 50)**		**Group B (n= 50)**		**P-value**
	No.	**%**	**No.**	**%**	
Age: (years)					0.055
Mean ± SD	29.18 ± 5.11		31.16 ± 5.09		
Range	20.0-38.0		22.0-39.0		
Residence:					0.806
Rural	40	80.0	39	78.0	
Urban	10	20.0	11	22.0	
Occupation:					0.275
Working	10	20.0	6	12.0	
Housewife	40	80.0	44	88.0	
Level of education:					0.009*
Educated	44	88.0	33	66.0	

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Non educated	6	12.0	17	34.0	
Family history about medical disease:					
None	19	38.0	15	30.0	
Hypertension	11	22.0	4	8.0	0.092
Diabetes	12	24.0	16	32.0	
Both	8	16.0	15	30.0	

Table (2): Distribution of data according to obstetric history of the patients

	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Parity:					
Primi	2	4.0	0	0.0	0.495
Multi	48	96.0	50	100.0	
Previous obstetric history:	N=48		N=50		
Normal	21	42.0	32	64.0	0.017*
Abnormal	27	54.0	18	36.0	
Type of complication:					
Gestational diabetes	0	0.0	8	80.0	0.002*
Gestational hypertension	0	0.0	2	20.0	
Previous placenta previa	2	100.0	0	0.0	0.002*
fetal death	2	4.0	4	8.0	0.000*
Abortion	23	46.0	4	8.0	0.000*
Number of abortion:					
None	25	50.0	46	84.0	0.001*
Once	10	20.0	2	4.0	
Two or more	13	30.0	2	12.0	
Previous labor history:	N=48		N=50		
Normal	46	95.8	48	96.0	1.000
Abnormal	2	4.2	2	4.0	
Type of complication:					
ICU admission	0	0.0	2	100.0	0.333
Rupture of uterus	2	100.0	0	0.0	
Types of Previous deliveries:	N=48		N=50		
Normal	2	4.2	2	4.0	1.000
CS	46	95.8	48	96.0	
No. of CS:					
One	14	30.4	14	29.2	
Two	11	23.9	9	18.8	0.343
Three	10	21.7	18	37.5	
Four	11	23.9	7	14.6	

Table (3): Distribution of data according to baseline character of patients

Variables	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Data related the patient: Gestational age:					
< 34 WKs	6	12.0	15	30.0	0.027*
≥ 34 WKs	44	88.0	35	70.0	
Mean ± SD	35.64 ± 1.95		34.66 ± 2.54		0.033*

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Degree of placenta previa:					0.275
Low lying	0	0.0	2	4.0	
Marginal	0	0.0	0	0.0	
Partial	4	8.0	6	12.0	
Complete	46	92.0	42	84.0	
Patient complain:					0.841
Symptomatic	26	52.0	25	50.0	
Asymptomatic	24	48.0	25	50.0	
Anti-D immunoglobulin dose:					0.050
Yes	4	8.0	11	22.0	
No	46	92.0	39	78.0	
Dexamethasone dose:					1.000
Yes	38	76.0	38	76.0	
No	12	24.0	12	24.0	
View of the patient toward hysterectomy:					0.487
Accept	47	94.0	44	88.0	
Refuse	3	6.0	6	12.0	
Data related the fetus: Fetal heart rate:					0.056
Normal	50	100.0	45	90.0	
Abnormal	0	0.0	5	10.0	
Fetal position:					0.817
Normal	37	74.0	38	76.0	
Abnormal	13	26.0	12	24.0	
Presenting part:					0.373
Cephalic	34	68.0	38	76.0	
Other	16	32.0	12	24.0	

Table (4): Distribution of data according to Clinical pre-operative management

Variables	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Patient general condition:					0.059
Conscious	49	98.0	43	86.0	
Unconscious	1	2.0	7	14.0	
Patient vital signs: 1- Blood pressure:					0.001*
Normal	49	98.0	38	76.0	
Abnormal	1	2.0	12	24.0	
2-Pulse:					0.002*
Normal	49	98.0	39	78.0	
Abnormal	1	2.0	11	22.0	
3-Respiration:					0.112
Normal	49	98.0	44	88.0	
Abnormal	1	2.0	6	12.0	
4-Temperature:					0.059
Normal	49	98.0	43	86.0	
Abnormal	1	2.0	7	14.0	
Hemoglobin level:					0.181
Normal	39	78.0	33	66.0	
Abnormal	11	22.0	17	34.0	

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Platelets:					0.269
Normal	44	88.0	48	96.0	
Abnormal	6	12.0	2	4.0	
Amount of blood loss:					0.160
None	24	48.0	25	50.0	
<500	21	42.0	14	28.0	
≥500	5	10.0	11	22.0	
Amount of reserved fluid:					1.000
500 -1000	21	91.3	18	94.7	
1500-2000	2	8.7	1	5.3	
2500-3000	5	10.0	11	22.0	

Table (5): Distribution of Clinical Intra-operative management

Variables	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Gestational age at admission OPR:					0.029*
< 34 WKs	4	8.0	12	24.0	
≥ 34 WKs	46	92.0	38	76.0	
Patient general condition in OPR:					0.016*
Normal	44	88.0	34	68.0	
Abnormal	6	12.0	16	32.0	
Blood pressure:					0.021*
Normal	47	94.0	39	78.0	
Abnormal	3	6.0	11	22.0	
Pulse:					0.461
Normal	9	18.0	12	24.0	
Abnormal	41	82.0	38	76.0	
Respiration:					0.007*
Normal	48	96.0	39	78.0	
Abnormal	2	4.0	11	22.0	
Temperature:					0.461
Normal	9	18.0	12	24.0	
Abnormal	41	82.0	38	76.0	
Presence of hypothermia:					0.461
Yes	41	82.0	38	76.0	
No	9	18.0	12	24.0	
Management of hypothermia:					
Monitoring	41	100.0	38	100.0	--
Extra-covering	41	100.0	3	7.9	0.000*
Warmth I.V fluid	41	100.0	38	100.0	--
Bed rest	41	100.0	22	57.9	0.000*

Table (5): Cont.

Variables	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Amount of blood loss:					0.059
< 500	22	44.0	13	26.0	
≥ 500	28	56.0	37	74.0	

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Type of reserved fluid:					
Blood	36	72.0	39	78.0	0.488
Plasma	12	24.0	17	34.0	0.271
Packed RBSs	26	52.0	35	70.0	0.065
Ringer	45	90.0	38	76.0	0.062
Glucose	16	32.0	16	32.0	1.000
Amount of reserved fluid:					
500 -1000	2	4.0	5	10.0	0.002*
1500-2000	24	48.0	8	16.0	
2500-3000	24	48.0	37	74.0	

Table (6): Distribution of data according to maternal progress

Variables	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Mode of delivery:					
CS	50	100.0	50	100.0	--
Intraoperative maternal progress:					
Uterine artery ligation	43	86.0	28	56.0	0.000*
Internal iliac artery ligation	3	6.0	1	2.0	
Normal progress	4	8.0	21	42.0	
Hysterectomy:					
Yes	6	12.0	15	30.0	0.027*
No	44	88.0	35	70.0	
Placenta previa related causes:					
None	13	26.0	9	18.0	0.334
Mal-presentation	16	32.0	12	24.0	0.373
Obstructed labor	2	4.0	0	0.0	0.495
PROM	5	10.0	11	22.0	0.102
Maternal complication:					
Accidental bladder injury	17	34.0	16	32.0	0.832
ICU admission	9	18.0	18	36.0	0.043*
Hysterectomy	6	12.0	15	30.0	0.027*
Intra uterine hematoma	5	10.0	0	0.0	0.056

Table (7): Distribution of data according fetal progress

Variables	Group A (n= 50)		Group B (n= 50)		P-value
	No.	%	No.	%	
Fetal outcome:					
Normal	41	82.0	15	30.0	0.000*
Abnormal	9	18.0	35	70.0	
APGAR score at 1 min:					
< 7	23	46.0	37	74.0	0.004*
≥ 7	27	54.0	13	26.0	
APGAR score at 5 min:					
< 7	9	18.0	35	70.0	0.000*
≥ 7	41	82.0	15	30.0	
Fetal body weight:					
< 2 kg	8	16.0	22	44.0	0.002*
2-3 kg	42	84.0	28	56.0	

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NICU admission:					0.001*
Yes	11	22.0	27	54.0	
No	39	78.0	23	46.0	
Fetal complication:					
None	38	76.0	13	26.0	0.000*
Prematurity	8	16.0	10	20.0	0.603
Asphyxia	0	0.0	4	8.0	0.117
IUGR	2	4.0	1	2.0	1.000
Increased incidence of malformation	0	0.0	0	0.0	--
Perinatal mortality	0	0.0	0	0.0	--
Fetal death	0	0.0	8	16.0	0.006*
RD	2	4.0	8	16.0	0.046*
DM	0	0.0	6	12.0	0.027*

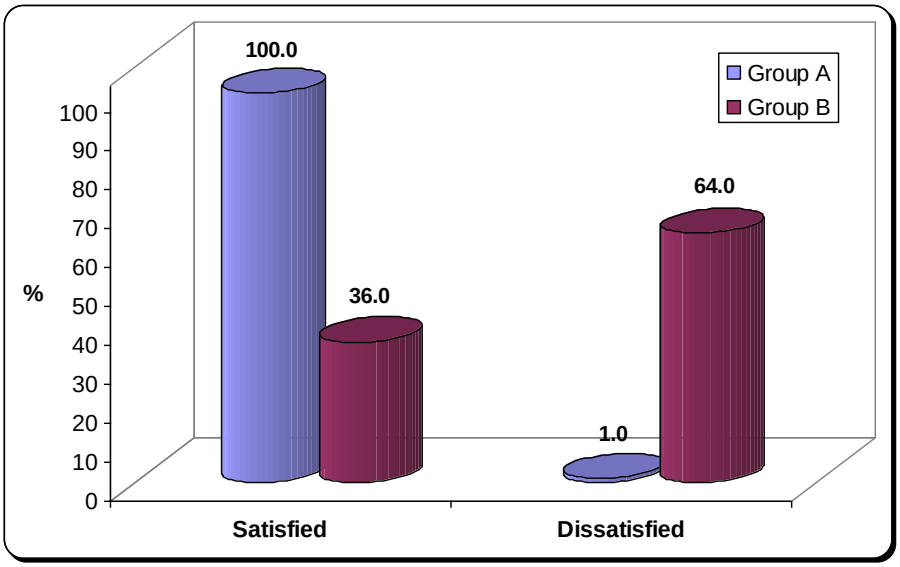

Figure (1): Distribution of Patient satisfaction about care

Table (1): showed the distribution of the patients according to their personal data. As regard age: Mean age 29.18 &31.16 in group**A &B** respectively.And showed these are statistical significant between the patients according there level of education in group **A & B** respectively 88.0٪ and 66.0٪ educated.

Table (2): shows there are a statistical significant difference 0.001, 0.017, 0.002, 0.000 respectively between group **A** and **B** according to their obstetrical history of previous pregnancy and deliveries and type of complication.

Table (3): shows distribution of patients according to baseline characteristics which reflect that the vast majority 92.0٪ of patients were complete placenta previa in group **A**, while two third of them 84.0٪ of patients were complete placenta previa in group **B**

Table (4): shows clinical pre-operative data which reflected that hemoglobin level was normal in more than two -third (78٪) in group **A**, while it was normal in less than two -third (66٪) in group **B**

Table (5): showed these are statistical significant between group **A&B** in gestation age at admission in operative room, patient general condition, management of hypothermia and amount of reserved fluid to the patient.

Table (6): showed highly statistically significant in maternal data between group **A&B** (P value 0.000)

Table (7): showed highly statistically significant in fetal data between groups **A&B** in all items.

Fig (1): Illustrated that more than half percentage of the patients (64٪) dissatisfied in group **B**, while it reached to the highest percent (100٪) in group **A**, which reflect highly statistically significant.

NOTE: Statistical significant mean P value < 0.05

2. DISCUSSION

Placenta previa is an obstetric complication that classically presents as painless vaginal bleeding in the third trimester secondary to an abnormal placentation near or covering the internal cervical os. However, with the technologic advances in ultrasonography, the diagnosis of placenta previa is commonly made earlier in pregnancy. Historically, there have been three defined types of placenta previa: complete, partial, and marginal. More recently, these definitions have been consolidated into two definitions: complete and marginal previa **(Almnabri et al., 2017).**

The aim of this study was to determine the effectiveness of peri partum integrated nursing care for the patients with placenta previa versus routine care.

The present study showed that the mean ages were 29.18 &31.16 years old. This finding agreed with **(Ogawa et al., 2017)** in the study entitled " the association between very advanced maternal age and adverse pregnancy outcomes" the majority of patients including aged 30 years or elderly, and concluded that patients age 34 years or older had a 2-3 times high hazard of placenta previa in relatedness to the women more than 20 years old. Also, these were in alignment with the study of **(Weiner et al., 2016)** who studied the effect of placenta previa on fetal growth and pregnancy outcome, in correlation with placental pathology ,cesarean deliveries of 119 pregnancies with placenta previa, they concluded that increasing older mothers seem to excess the hazard of placenta previa unbiased of other factors.

In this aspect, **(Carusi., 2018)** who studied the placenta accreta spectrum: epidemiology and risk factors. Clinical obstetrics and gynecology discussed that excess the lifetime of mothers and prior cesarean section considers the main risk factors of the placenta accreta as a type of placenta previa.

The present study showed that there was a statistical significant differences between two group of patients according there level of education and the presence of placenta Previa., This disagreed with **(Ozler et al., 2019)** in studying adverse maternal outcomes in placenta previa who found that there was no difference between the educational level and the presence of placenta Previa.

The present study revealed that a statistical significant differences between two group of patients according family history about chronic diseases including diabetes mellitus and the presence of placenta Previa. This result agree with results of study by **(Räisänen et al., 2014)** studied placenta previa and the hazards and founded that, an increased prevalence of placenta previa in patients was connected with chronic diseases including diabetes mellitus, and maternal diabetes mellitus.

The present study showed that there was a statistically significant difference between study group and control group according to their previous pregnancy and deliveries, the results revealed that the majority of patients with placenta previa had multi-parity. This agree with **(Farquhar et al., 2017)** studied about incidence, risk factors and perinatal outcomes for placenta previa in Australia and New Zealand: a case–control study, documented that multi-parity are the most significant risk factors for placenta previa. Also this result was agree with the finding of **(Sibbou et al., 2020)** study conducted at Mothers Child Imagery Service in Rabat, Morocco added that history of grand multi-parity is also quoted in literature as other important risk factors of placenta previa.

The present study revealed that majority of patients has a perior caesarian section in the study group and control group. In this respect, Literature also refers that previous caesarian section as one of the most serious causes for placenta previa, this result came in the same line with the study of **(Belachew et al., 2017)** in a prospective cohort study entitled "Placental location, postpartum hemorrhage and retained placenta in women with a previous cesarean section delivery" reported that the risk of placenta previa increase with previous caesarean section, the risk increasing with the number of previous caesarean sections.

The present study reflected that majority of patients were more than ≥34 weeks of gestation and complete placenta previa. this finding was similar to the study of **(Fyala., 2018)** conducted in Department of Obstetrics & Gynecology, Mansoura University Hospital, Egypt, found that majority of patients had a gestation of 36 weeks at the time of birth. So that **(Panaiotova et al., 2019)** "Screening for morbidly adherent placenta in early pregnancy. Ultrasound in Obstetrics & Gynecology" at King's College Hospital, London, found that the earliest gestation at which placenta previa was being diagnosed.

The present study reflected that the majority of the studied women had a normal vital signs and less than one quarter massive blood loss, This finding disagreed with study by **(Unal et al., 2020)** that titled "Peri-operative blood transfusion in elective major surgery: incidence, indications and outcome–an observational multi-center study. Blood Transfusion", who found the patients high morbidity in their study was primarily related to extensive surgery and includes massive blood loss and transfusion. Also disagreed with study by, **(Panigrahi et al., 2017)** in the study of "A standardized approach for transfusion medicine support in patients with morbidly adherent placenta" concluded that women with (morbidly adherent placenta) MAP as a type of placenta previa had a high incidence of bleeding complications with an averaged loss of blood and abnormal vital signs.

The present study clarified that the vast majority of the patients were conscious in pre-operative period, this finding agree with **(Kole et al., 2020)** who study the reproductive services for the patient at increased risk for morbidity and mortality during the second trimester**,** which found that majority of that the patient with placenta previa were conscious.

The present study reflected that there was a statistical significant differences between study group and control group regarding normal vital signs intraoperative, patient general condition, majority of patients in study group had normal vital signs ,This match with **(Lal et al., 2020)** who found in their study about placenta previa: an outcome-based cohort study in a contemporary obstetric population, the same findings that concerned on the intraoperative condition of the patients with placenta pravia.

The present study showed highly statistically significant between study and control groups regarding peri-partum hysterectomy there were less than one quarter of patients has peri-partum hysterectomy, This disagree with **(Porreco & Stettler., 2010)** who studied surgical remedies for postpartum hemorrhage, Clinical obstetrics and gynecology, who found the patients of placenta previa are particularly at an increased risk for peripartum hysterectomy and usually performed due to uncontrolled bleeding.

The present study showed that the maternal complication related to placenta previa were accidental bladder injury, ICU admission, intra uterine hematoma and hysterectomy, This finding disagreed with **(Gibbins et al., 2018)** In there findings titled Placenta previa and maternal hemorrhagic morbidity, This analysis included all women undergoing primary Cesarean delivery About 496 women with previa were especially in comparison to 24,201 women who did not have the condition. Initial result was compositely morbid maternal bleeding. morbid maternal bleeding were more common in women complain placenta previa which reported the Pregnancies complicated with placenta previa have been shown to be prone to adverse outcomes, such as postpartum hemorrhage, maternal sepsis, maternal blood transfusion, and hysterectomy, this finding supported by **(Zhu et al., 2016)** who studied the maternal and live-birth outcomes of pregnancies , study concluded that an increase in the incidence of the placenta previa significantly increased incidence risks of antepartum complications and peri partum complications.

The present study showed that more than two-third of patient had a normal fetal outcome in study group. This reflect that careful surveillance for the patients complain from placenta previa may help in minimizing maternal, fetal and neonatal complications, This disagree with **(Nawsherwan et al., 2020)** who study titled the LBW, and low index mediates the association between preeclampsia, the placenta previa, and neonatal mortality, who found that approximately half of patients connection between the placenta previa and death of neonatal, Also this finding similar with **(Carbone et al., 2020)** who found association with other hazard causes for adverse consequences of perinatal, such as congenital anomalies and prematurity, that contribute to this excess hazard of perinatal mortality in placenta previa.

In this respect, this finding were in alignment with study of **(Baumfeld et al., 2017)** which study the placenta associated pregnancy complications in pregnancies complicated with placenta previa, they reported that pregnancies complicated with placenta previa were more likely to result in hostile consequences, such as neonatal death.

The current study found that there was a statistical significant difference between study group and control group regarding satisfaction about care introduced for the patient with placenta previa, this emphasis by **(Yanfei et al., 2017)** who reported in their study about feed-forward control nursing model in expectant treatment of placenta previa**.** Patient satisfaction is the most important indicator of quality of care and it considered an outcome of healthcare services.

From the researcher's point of view this reflected that the patients with placenta previa are usually emotionally unstable and lack reasoning towards disease development and expectant treatment. They cannot judge their own condition accurately; therefore, they often require more medical care and help.

The current study results showed a statistical significant differences regarding satisfy rate in study group was much higher compared to that of the control group. Moreover, maternal and fetal complication rate was obviously lower in the study group. The gestational age and fetal weight improved in the study group as well, the researcher from point of view, if patients feel more comfortable during hospitalization; they are more likely to be satisfied with their caregivers. The implementation of a detailed management in the clinical nursing makes the nursing work to start from small goals and gradually move toward bigger goals such as bringing the clinical staff and patient closer to each other.

The patient's satisfaction and nursing-sensitive quality indicators are imperative to improve the nursing quality. In clinical practice, more attention should be paid to PP and quality sensitive indicators of PP should be constructed and carried out to prevent its risk at an early stage. The key to improve the nursing quality of PP in obstetrics is to improve the evaluation method of nursing quality, construct sensitive indicators and evaluate the sensitive indicators outcome of PP **(Gao et al., 2018)**

Finally, Application of peri partum integrated nursing care for placenta Previa can improve treatment success rate, decrease complications, upgrade nursing quality and increase patients' satisfaction.

3. CONCLUSIONS

Based on the results of the present study, it can be concluded that:

The maternal and fetal complication is less in study group who receiving the integrated nursing care .So satisfactory significant difference was found between study group and control group regarding care introduced.

The patient satisfaction is indicator for quality of care, The Integrated nursing care for the patients with placenta previa can improve treatment success rate, decrease complications and upgrade nursing quality.

Continuous evaluation for nurses is needed to determine any defect in nursing quality.

4. RECOMMENDATIONS

Based on the findings of the present study, it can be recommended that:

1- Application integrated nursing care as protocol for management the patients with placenta previa,

2- The hospitals provide periodical In-services training program for nurses. To help in improving their practice and update their knowledge.

3- Encourage nurses to attend continuing education in the form of workshops, conferences, training programs and review update nursing care related to placenta previa.

4- Provision of adequate resources and facilities is crucial for introduce the services for patient with placenta previa.

5- Future research is proposed to monitor the long-term effect of teaching program on nurse's knowledge regarding placenta previa.

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