Effect of Immediate Nursing Intervention Regarding Applying Amniotic Membrane on Pain and Healing of Cesarean Wound

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Abstract

Background: Cesarean section (CS) is one of the most frequently performed major abdominal surgeries, the amniotic membrane is the inner layer of the placenta that surrounds the embryo and forms a sac filled with amniotic fluid. **Aim:** This research aims to evaluate the effect of immediate nursing intervention regarding applying amniotic membrane on pain and healing of cesarean wound. **Research Design:** A quasi-experimental (study /control group) was used in the study. **Setting:** The study was conducted at labor unit in Hawaa center, Manshia Naser, Cairo, Egypt. **Sample:** A purposive sample of 60 laboring women. The total sample divided into two groups equally; study group (30) and control group (30). **Tools for data collection:** Three tools were used to collect data; **Tool (I):** Structured interviewing questionnaire: which is divided into two parts Part 1: Demographic Characteristics, Part 2: Obstetric history. **Tool (II)**: REEDA scale was used to assess cesarean section wound healing. **Tool (III): Laboring women pain assessment questionnaire include two parts: Part1: Behavioral rating scale (qualitative pain assessment), Part2: Visual analogue scale (quantitative pain assessment). Results**: The current study revealed a highly statistically significant improvement in laboring women' wound healing and decreases the pain level in the study group. **Conclusion:** The current study concluded that, the applying of amniotic membrane in cesarean section wound improve the healing and decrease level of pain more than routine care, which supports the research hypothesis **Recommendations:** the present study findings high light on applying of amniotic membrane in management of cesarean section wound is recommended as effective intervention among laboring women.

Keywords: Immediate Nursing Intervention, Amniotic Membrane, Cesarean Wound

Introduction:

Caesarean section (CS) is the birth of a fetus through an incision in the abdominal and uterine walls. It is one of the most common surgical operations performed worldwide. In some situations, it may be lifesaving for the child, the mother, or both. Cesarean sections are one of the most popular methods of managing cesarean section after effects, such as discomfort, hematoma, and delayed wound healing. This is especially important in maintaining maternal health and ability to care for the infant **(Niazi, Moradi, Askari, & Sharifi., 2021).**

Wound healing is a complicated process that occurs in three stages: inflammation of damaged blood vessel serum (in the first days homeostasis and immune system reactivity), proliferation (up to 4 weeks granulation and neovascularization), and maturation or remodeling (up to 1-2 years collagen formation, deposition, and remodeling). Because the final impact is the repair of the

incision area, these activities must occur in the exact sequence and timeframe for successful wound restoration. The same techniques and dates are indicated for healing a cesarean incision **(Stupak, Kondracka, Fronczek, & Kwaśniewska .,2021).**

The amniotic membrane is the inner layer of the placenta that surrounds the embryo and forms a sac filled with amniotic fluid. The chorionic layer is lined by a collagen-rich membrane that is thin, translucent, and robust. The amniotic membrane's primary function is to protect the fetus from harmful external influences during intrauterine development **(Patil., 2023).**

All major types of placental tissues can be used to treat wounds. Placental tissues are increasingly being used as allografts to improve wound healing outcomes in chronic wound patients. These materials increase cytokine release from recruited fibroblasts, endothelial cells, and stem cells, as well as cell proliferation and migration. Increase vascularization, decrease scaring, decrease fluid formation, decrease inflammation, decrease pain, decrease healing time, increase wound closure rate, prevent blood clots, decrease scare formation, decrease bacterial contamination are some of the unique properties of the amniotic membrane and their impact on various aspects of the wound healing process **(Klama-Baryła, et al .,2020).**

Pain after cesarean delivery is a complex experience that is unique to each patient. Pain severity and duration increase the chance of increased opiate usage, delayed recovery, and impaired mother and fetal bonding. Severe acute pain in CS is a significant risk factor for postpartum depression and chronic pain, resulting in long-term psychological, social, and economic difficulties. However, considering the negative effects on the mother, the possibility of transmission to the neonate via breastfeeding, and the cost, pharmacological therapy is not the only alternative for pain relief. As a result, complementary therapies such as thermotherapy, hypnosis, music therapy, aromatherapy, and amniotic membrane as wound dressing have been developed **(Mohseni, Saem, Sekhavati, Molazem, & Tabrizi .,2018).**

Role of the nurse in wound care include: Assessing and monitoring wounds, cleaning and bandaging wounds, working collaboratively with other members of the patient care team to determine if additional treatments or changes in care are required, educating patients and caretakers on wound care, infection and injury prevention, writing orders to expedite wound healing and avoid skin breakdown. In addition to these roles, wound care nurses often serve as advocates, wellness educators, and cheerleaders for patients, especially relatively painful procedures or surgeries **(Morton& Thurman.,2023).**

Nurses play an important role in postoperative pain management. The nurse must assess the patient's pain level, the effectiveness of pain therapy. in the first 24 hours post-cesarean, pain was evaluated by a physician, nurse or nursing technician obtained by a Visual Analog Scale (VAS) score **(Kiabi, Emadi, Jamkhaneh, Aezzi, & Ahmadi .,2021).**

Significance of the study:

Worldwide caesarean section rates have risen from around 7% in 1990 to 21% to 2021.The World Health Organization states that, Egypt is one of only five countries where C-sections outnumber natural deliveries .According to the data by the Central Agency for Public Mobilization and Statistics (CAPMAS) on the Health of the Egyptian Family (HEF) in late August, C-section

births increased to 72 percent in 2021, up from 52 percent in 2014.

As a major procedure, caesarean section complications include bleeding, infection, delayed wound healing, and pain. Discomfort is the most common complication of caesarean section, with 50-70% of patients experiencing discomfort following the procedure. Pain can cause mother immobility, an increased risk of thromboembolic illnesses, the inability to breastfeed, and poor newborn care. **(Taheri, Amiri-Farahani,Haghani, Shokrpour & Shojaii .,2022).**

Pain is frequently treated after a cesarean section using narcotic analgesics or nonsteroidal anti-inflammatory medications. However, pharmacological therapy has side effects on the mother and is passed on to the neonate through breastfeeding, not to mention the cost. As a result, complementary therapies such as thermotherapy, hypnosis, music therapy, aromatherapy, honey dressing, and amniotic membrane as wound dressing are used. Placental membrane growth factors serve a critical function in wound healing. The amnion and chorion contain many growth agents. Furthermore, anti-inflammatory and antibacterial properties **(Roy, Mantay, Brannan, & Griffiths.,2022).**

Aim of the study:

The aim of this research to evaluate the effect of immediate nursing intervention regarding applying amniotic membrane on pain and healing of cesarean wound

Research hypotheses:

To fulfill the aim of this study, two research hypotheses will test:

Hypotheses 1: Applying amniotic membrane expected to be improve wound healing in cesarean section more than traditional method

Hypotheses 2: Applying amniotic membrane expected to be decrease the level of pain in cesarean section wound more than traditional method

Subject & Methods

Research design:

A quasi experimental design (study /control group) was utilized in this study. It is an empirical study used to estimate the causal impact of an intervention on its target population without random assignment.

Setting:

The study was conducted at labor unit in Hawaa center, Manshia Naser,Cairo ,Egypt. Hawaa Center is consists of waiting area, nursing office, examination room, and ultrasound room, 1st stage area is consist of four private rooms, 2nd and 3rd stages area and 4th stage area same the1st stage area .

Sampling:

Sample type:

A purposive sample was used according to inclusion and exclusion criteria as the following:

Inclusion criteria:

1- Laboring women in full term.

2- Age from 20-35 years old.

Exclusion criteria:

1-Laboring women with high risk pregnancy

Sample size:

According to Hawaa Center statistical office, 2022, flow rate of Laboring women diagnosed with Cs were 600 women at the end of year 2022. Ten percent of flow rate (60 laboring women) were selected and divided into two groups at random: The control group, which consisted of 30 women who received only routine hospital care, and the study group, which consisted of 30 women who received application of amniotic membrane on Cs wound.

Tools for data Collection:

- The data for this study was collected using four tools:

The first tool: Structured interviewing questionnaire:

It was developed by the researcher based on the recent related literature review and experts' opinion. It included two parts:

Part one: Socio-demographic data such as; - age, level of education, and socioeconomic level and occupation.

Part two: Past& Current obstetric history such as; - last menstrual period, gestational age and expected date of delivery, number of pregnancy, delivery and abortion, intrauterine fetal death.

The second tool: **REEDA scale adopted from** (**Toomari, Hajian, Mojab, Omidkhah, & Nasiri ., 2021**): The REEDA scale is a tool for measuring the healing process of an incision related to cesarean section. It has five components including redness, edema, ecchymosis, discharge, and approximation of the two edges of the wound. In this scale, a score ranging from 0-3was awarded to each component. A score of "0" means there is no sign of a particular component, while "3" is the highest score, indicating the presence of one of the five signs. Interpretation of total score on REEDA scale; healed: 0; moderately healed: 1 to 5; mildly healed: 6 to 10; not healed: 11 to 15.

The third tool: Laboring women pain assessment questionnaire include two parts:

Part1: Behavioral rating scale (qualitative pain assessment): that adopted from (Payen, et al., 2001) the behavioral pain assessment scale rated by each of the 5 measurement categories (face, restlessness, muscle tone, vocalization, and Consolability) (0, 1, or 2). Add these together. Document the total pain score out of 10.

Part2: Visual analogue scale sheet (quantitative pain assessment): Adopted from (Scott& Huskisson, 1976) modified by (Thong, Jensen, Miró, and Tan., 2018): This tool was used to assess labor pain. It consists of 10-cm horizontal line. The right end is marked 0& indicates no pain at all. The left is marked 10 indicate severe intolerable pain.

Validity:

Three nursing specialists of obstetrics and gynecological nursing reviewed the data collecting tools to determine the validity of the content. The tools were corrected in accordance with the panel's recommendations about the clarity of the sentences and the relevance of the material.

Reliability:

Reliability of the study tools were tested for its internal consistency by Cronbach's Alpha. Reliability of the study tools was 0.730 for REEDA scale .568 for the Behavioral rating scale (Qualitative pain assessment) and Visual analogue scale (quantitative pain assessment) after cesarean.

Administrative design:

An official written approval letter clarifying the title, purpose, and setting of the study was obtained from the Dean of the Faculty of Nursing of Helwan University to director of Hawaa Center

Ethical considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee of the Faculty of Nursing at Helwan University and Hawaa Center. The researcher clarified the objectives of the study to the laboring women included in the study to gain their confidence and trust. The researcher obtained consents from laboring women. The researcher assured maintaining anonymity and confidentiality. Laboring women was informed that they are allowed to choose to participate or not in the study and that they have the right to withdraw from the study at any time. Ethics, values, culture and beliefs will be respected.

Pilot study:

A pilot study was conducted on a sample of 10% (6) of women to test the applicability, clarity and the efficiency of the tools. Necessary modifications were carried out and tools finalized, so they were excluded from the study sample.

Field work:

- Actual field work was carried out in the period from the beginning of September 2023 to ending of November 2023, consuming 3 months. after obtaining all official permissions.
- The laboring women interviewed through three days per week from 10 am - 2 pm.
- The researcher visited the study setting and met the nursing supervisor of setting and doctor manager of Hawaa Center then introduced herself and the aim of the study was explained and gave them a complete background about the study and sheet format which used to collect the required data.
- After the approval to conduct the study was achieved, the nursing supervisor and doctor manager help the researcher to interview the labor unit of the obstetrics department.
- The aim of the study was explained to each laboring woman then the researcher introduced herself to gain their confidence agreement as well as obtained their consent to participate in the study.
- All ethical considerations were respected. The gathered date helped the researcher to assess their general condition and provide appropriate intervention accordingly.
- The researcher showed sympathy and concern for the laboring women to gain trust and create an atmosphere of cooperation for the benefit of the laboring women.
- The cesarean section was performed by the surgeon with a low transverse incision on the uterus. After the surgery and skin repair with plastic suture and 3.0 nylon threads for both groups (control-study).
- **Study group:** The wounds of study group were dressed with amniotic membrane immediately after birth, the researchers separated amniotic membrane from placenta and fetal chorionic membrane carefully by using sterile gloves.
- After washing gently with normal saline solution and clearing blood from membrane, it was kept in a sterile basin filled with normal saline solution in room temperature (22°C) till the end of surgery.
- At the end of surgery, amniotic membrane was removed from normal saline solution and placed, in 2 layers, directly on sutured cesarean section incision in study group by surgeon and researchers.
- In order to prevent the membrane from drying, sterile gauze moisturized with normal saline was placed on the membrane and then, it was dressed with several dry gauzes.
- **Control group:** In the control group, on the other hand, routine dressing performed by putting dry sterile gauze on the wound
- Level of pain was measured by Visual analogue scale and Behavioral rating scale for both groups (study- control) after 4 & 6 hours after surgery, recorded, and compared between the two groups.
- Healing status of cesarean section wound was assessed after 7 days from surgery for both groups (study- control) by using REEDA scale, recorded, and compared between the two groups.

Statistical Analysis: -

Data was entered and analyzed by using SPSS (Statistical Package for Social Science) statistical package version 26. Graphics were done using Excel program. Quantitative data were presented by mean (X) and standard deviation (SD). It was analyzed using student t- test for comparison between two means;

Qualitative data were presented in the form of frequency distribution tables, number and percentage. Chi-square tests, the Paired Samples T test, and Pearson correlation coefficients were used. Every statistical test that was conducted yielded a p-value: > 0.05 meant that there was no statistically significant difference, <0.05 meant that there was, and ≤ 0.001 meant that there was a highly significant difference.

Results:-

Table 1: demonstrate that near two third of studied labored women in study and control group were in age group (20 - 25years) (56.7and 60% respectively), with mean of 1.4333±.50401 years and 1.4000±0.49827 years respectively, however, this difference was significant statistically (P=000**). As regards occupation more than half of study group were working (56.7%) while almost of control group were working (70%). Concerning education, among study group, more than one third of them were illiterate (33.3%) while two third of control group were university (60%).

Table 2 reveales that among study group near half 40% had 1-2 gravida ,while more than two third (66.7%) had 1 to 2 gravida in control group. Among study group majority (83.3%) of labored women delivered 1-2 times, while near half (40%) had 1 - 2 of labored women delivered in control group. Concerning number of abortions nearly three quarter (74.7%) of control group had no abortions, while majority (85.7%) of study group had no abortions. There were significant difference between study and control groups regarding all items of obstetric history (P <0.0001for each).

Figure (1) illustrates that, the majority of control group and the study group (96.7, 86.7 respectively) had normal previous pregnancy. Additionally 3.3% of control group had previous high risk pregnancy compared to 13.3% in the study group

Figure (2) shows that, almost of the control group 90% and nearly three quarter 70% had previous CS

Table 3 highlights the degree of CS wound healing by using REEDA scale among study and control group, the table reveals highly significant improvement in all items in the study group, all of laboring women had non Edema, Ecchymosis and Discharge with p.value < 0.000

Figure (3) refers to total REEDA scale among the studied groups clear that, nearly two thirds 60% of the study group had healed wound compared to 10% in the control group

Table 4 reveals a highly significant deference (p<0.000) in the five items of behavioral pain score among the study group than the control group after 4 & 6 hour of CS. On the other hand there is no significant difference immediately after CS for each Behavioral pain rating scale' items.

Table (5) The table demonstrates that, non-labored women in study group have sever intolerable pain while control group 13.3% have sever intolerable pain after 4 hours of CS. concerning moderate pain sensation study group have 6.7% compared to nearly quarter 20% in control group. Moreover, nearly three quarter 73.3% in the study group have no pain after 6 hours compared to 6.7% in control group with highly significant difference (P <0.000).

Table 6 demonstrates that, the majority of laboring women (86.7) had no hurt in all pain assessment measurement in the study group compared to 6.7 in the control group. The table indicates improvement in the level of pain in the study group with Mean ±SD (9.07±2.27) compared to (12.2±4.01) in the control group.

Table 7 shows that, there were no statistical significant differences between the laboring

women' demographic characteristics and their total score of REEDA scale (p >0.05) for each item

Table 8 reveals that, there was statistically significant positive correlation between total analogue score and total behavior after4 & 6 hour score in both groups (P ≤ 0.05). On the other hand, there was a statistically significant negative correlation between Total REEDA score, and total behavior after4 & 6 hour score

Table 1: Comparison between study and control groups regarding their demographic characteristics n (60)

Demographic characteristics		Groups					
		control group (n = 30)		study group (n = 30)		Chi-Square test	p. value
		No.	%	No.	%		
Age	20-25 Years	18	60	17	56.7	19.027	.000**
	25-35 Years	12	40	13	43.3		
	Mean ± SD	1.4000±0.49827		1.4333±.50401			
Occupation	Housewife	9	30	13	43.3	10.866	.001**
	Working	21	70	17	56.7		
Education	Illiterate	4	13.3	10	33.3	45.185	.000**
	Elementary education	6	20	9	30.0		
	Secondary education	2	6.7	2	6.7		
	University	18	60	9	30.0		

(**)Highly statistically significant p < 0.001

Table 2: Comparison between study and control groups regarding their obstetric history n (60)

Items		Groups					
		control group (n = 30)		study group (n = 30)		X2	p.value
		No.	%	No.	%		
Number of gravida	primigravida	3	10	9	30	28.000	.000**
	1-2	20	66.7	12	40		
	3-4	7	23.3	9	30		
Number of Para	1-2	12	40	15	83.3	21.818	.000**
	3-4	8	26.7	3	16.7		
Number of abortion	Non	20	74.7	18	85.7	21.304	.000**
	1-2	7	25.3	3	14.7		

(**)Highly statistically significant p < 0.001

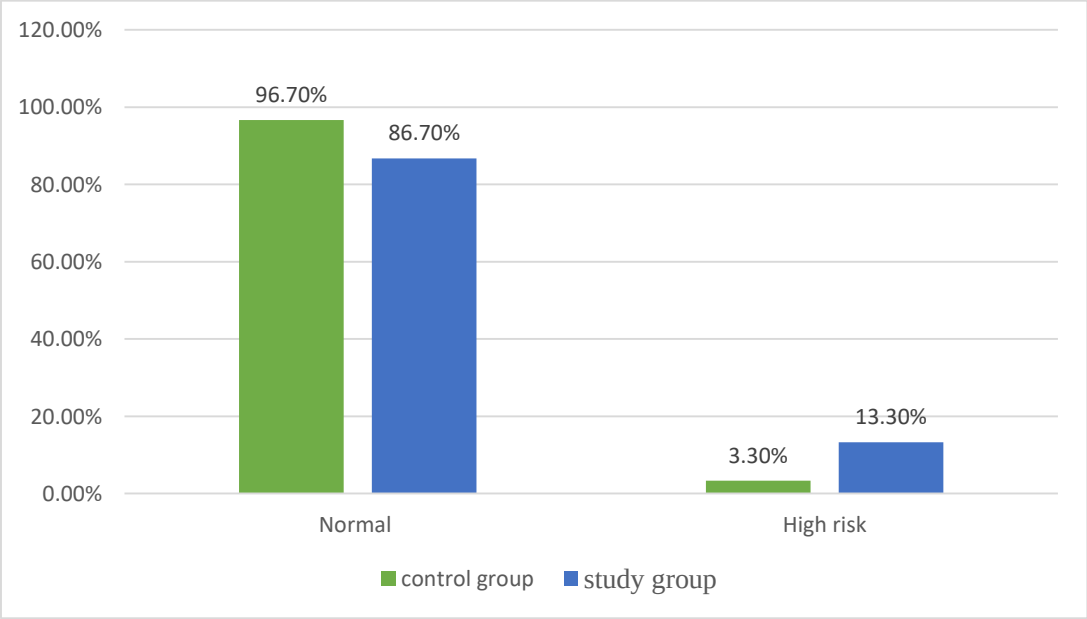

Figure (1) Distribution of the studied groups according to their previous pregnancy

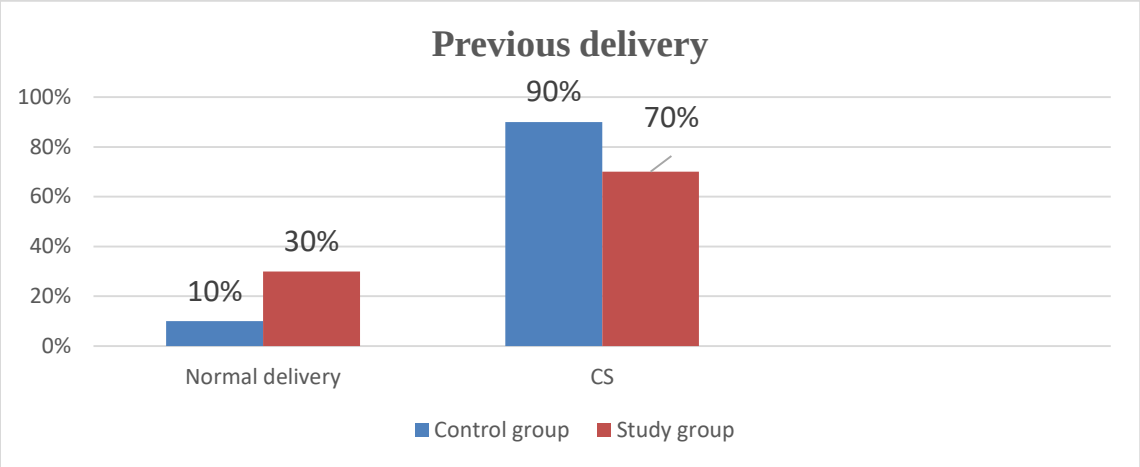

Figure (2) Distribution of the studied groups according to mode of previous delivery.

Table 3: Comparison between study and control groups regarding wound healing after 7 days (n=60).

REEDA scale after 7 days		Groups					
		control group (30)		study group (30)		X2	p.value
		No.	%	No.	%		
Redness	Non	3	10	24	80	8.226	.000**
	Present	27	90	6	20		
Edema	None	12	40	30	100	5.835	.000**
	Mild	9	30	0	0		
	Moderate	9	30	0	0		
Ecchymosis	None	30	100	30	100	-	-
Discharge	None	12	40	30	100	6.595	.000**
	Serous	18	60	0	0		
Approximation	Closed	4	13.3	23	76.7	7.077	.000**
	Skin separation ≤3mm	26	86.7	7	23.3		

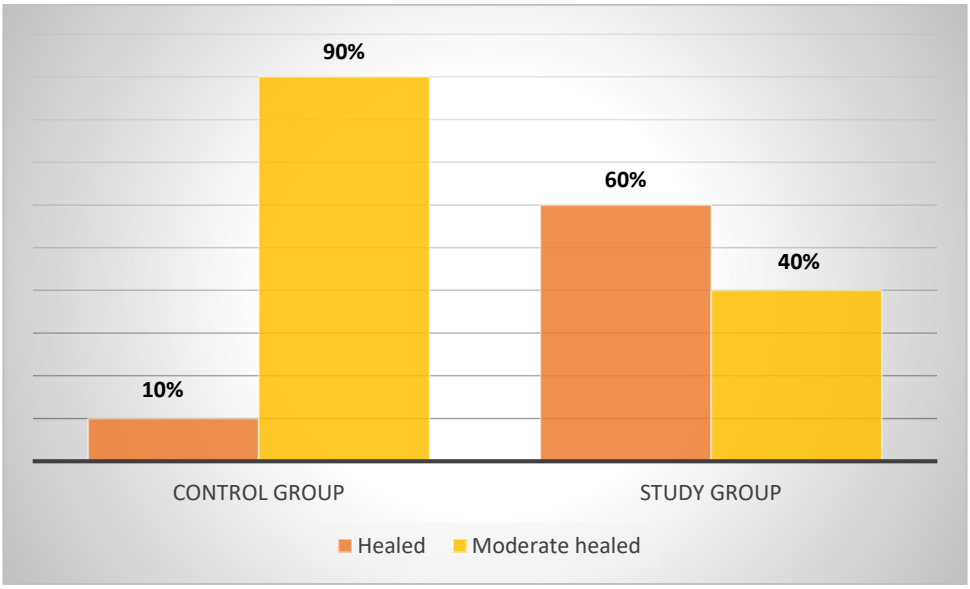

Figure (3) Comparison of Total REEDA scale among the studied groups after 7 days (n=60).

Table 4: Comparison of behavioral rating scale (Qualitative pain assessment) among the studied groups (n=60).

Behavioral rating scale (Qualitati pain assessment):		After 4 hour						After 6 hours					
		control group (n = 30)		study gro (n = 30)		X2	p-value	Control group (n = 30)		study gro 30)		X2	p-value
		No.	%	No.	%			No	%	No.	%		
Face	Face muscles relaxed	4	13.3	15	50	6.886	.000	3	10	19	63.3	6.88	.000
	Facial muscle tension, frown, grimace	27	90	11	36.7			27	90	11	36.7		
	Frequent to constant frown, clenched jaw	3	10	0	0			3	10	0	0		
Restlessn ess	Quiet,relaxed appearance, normal movement	1	3.3	28	93.3	12.042	.000	1	3.3	28	93.3	12.0	.000
	Occasional restless movement shifting position	26	86.7	2	6.7			26	86.7	2	6.7		
	Frequent restless movement may include extremities or head	15	50	3	10			24	80	3	10		
Muscle tone	Normal muscle tone	2	6.7	28	93.3	10.428	.000	2	6.7	28	93.3	10.4	.000
	Increased tone, flexion of fingers and toes	24	80	2	6.7			24	80	2	6.7		
	Rigid tone	4	13.3	0	0			4	13.3	0	0		
Vocalizat ion	No abnormal sounds	2	6.7	27	90	9.522	.000	2	6.7	27	90	9.52	.000
	Occasional moans, cries, whimpers and grunts	24	80	3	10			24	80	3	10		
	Frequent or continuous moans, cries, whimpers or grunts	4	13.3	0	0			4	13.3	0	0		
Consolab ility	Content, relaxed	0	0	18	60	6.139	.000	0	0	19	63.3	6.51	.000
	Reassured by touch distractible	21	70	12	40			21	70	11	36.7		
	Difficult to comfort by touch or talk	9	30	0	0			9	30	0	0		
	Mean ± SD	5.5.60 ± 1		2.310±0.3		10.25	.000*	5.60± 1.7		2.310±0.36		10.5	.000**

Table 5: Distribution of studied women regarding total behavioral rating scale among study and control groups. (N=60)

Groups of pain sensation		After 4 hour		X2	P-avlue	After 6 hours		X2	P-avlue
		Control group	Study group			Control group	Study group		
No pain	No.	0	14	10.251	.000**	2	22	7.576	.000**
	%	0	46.7			6.7	73.3		
Mild pain sensation (4 – 5)	No.	2	14			18	6		
	%	6.7	46.7			60	20		
Moderate pain sensation(6-7)	No.	24	2			6	2		
	%	80	6.7			20	6.7		
Severe intolerable pain sensation (8 – 10)	No.	4	0			4	0		
	%	13.3	0			13.3	0		

Table 6: Comparison of total Visual analogue scale (quantitative pain assessment) among the studied groups (N=60)

Visual analogue scale (quantitative pain assessment)	groups											
	After 4 hour						After 6hours					
	control group (n = 30)		study gro (n = 30)		X2	p-valu	control group (n = 30)		study grou (n = 30)		X2	p-value
	No.	%	No	%			No.	%	No.	%		
No hurt	0	0	26	86.7	12.6	.002	0	0	26	86.7	3.07	.079*
Hurts little bit	8	26.7	4	13.3			0	0	4	13.3		
Hurts little more	14	46.7	0	0			18	60	0	0		
Hurts even more	8	26.7	0	0			12	40	0	0		
Mean ±SD	12.2±4.01		9.07±2.2		14.2	.0	12.2±4.0		9.07±2.27		14.2	.000*

Table 7: Relation between the laboring women' demographic characteristic and total REEDA scale among studied groups (N=60)

Demographic characteristic		REEDA scale after 7 days											
		Control group n=30						Study group n=30					
		Healed		Moderate healed		X2	Pvalue	Healed		Moderate healed		X2	Pvalue
		No.	%	No.	%			No.	%	No.	%		
Age	20-25 Years	1	3.3	16	53.3	0.739	0.390	12	40	5	16.7	1.83	0.176
	25-35 Years	2	6.7	11	36.7			6	20	7	23.3		
Occupation	Housewife	1	3.3	12	40	0.136	0.713	8	26.7	5	16.7	0.023	0.880
	Working	2	6.7	15	50			10	33.3	7	23.3		
Education	Illiterate	1	3.3	3	10	5.617	0.132	2	6.7	2	6.7	1.75	0.624
	Elementary	1	3.3	5	16.7			4	13.3	2	6.7		
	Secondary	1	3.3	1	3.3			1	3.4	1	3.3		
	University	1	3.3	17	56.7			10	33.3	8	26.7		

Table (8): Correlation between Total REEDA score &total analogue score and total behavior after4 & 6 hour score among study and control group.

Item			Study group			
			Total REEDA score	Total behave after 4 hour score	Total behave after 6 hour score	Total analogue score
Control group	Total REEDA score	R	0.128	.120	.171	.221
		P-value	0.502	.527	.366	.240
	Total behavior after 4 hour score	R	**.028***	.248	.197	.324
		P-value	.883	.187	.296	.081*
	Total behavior after 6 hour score	R	**.028***	.248	.197	.324
		P-value	.883	.187	.296	.081*
	Total analogue score	R	.110	**.022***	**.034***	.436
		P-value	.562	.907	.857	**.016***

(*) Statistically significant p < 0.05

Discussion:-

Cesarean sections are procedures that include making incisions in the mother's abdomen and uterus to deliver the baby. The amniotic membrane is the placenta's inner layer, forming a sac filled with amniotic fluid around the embryo **(Setiawan, Sanjaya, Suardika, Widiyanti, & Kalimantara., 2023).** The nursing and treating medical teams must collaborate to effectively manage wounds. Poor wound treatment is one of the leading causes of increased morbidity and prolonged hospital stays. Thus, wound assessment and management are critical to providing nursing care **(Okur, Karantas, Şenyiğit, Okur& Siafaka., 2020).**

Amniotic membrane is one of the most popular temporary biological skin substitutes.

Ease of availability, low cost, sterilize and improved wound healing. The epithelium in the human amniotic membrane protects against evaporative loss and serves as a barrier. It offers several advantages, including pain reduction, infection control, maintaining a moist environment to encourage healing, good wound adhesion, and ease of use **(Darwish, Attia and Mostafa.,2022).** Thus, this study was conducted to evaluate the effect of immediate nursing intervention regarding applying amniotic membrane on pain and healing of cesarean wound**.**

As Regards socio-demographic characteristics of two groups, the present study showed that, nearly two third of studied labored women in study and control group were in age group (20 - 25years), with mean of 1.4333±.50401 years and 1.4000±0.49827 years.

Concerning level of education, among study group, more than one third of them were illiterate. while two third of control group were university .Regarding occupation, the findings of the present study showed that more than half of study group were working, while almost of control group were working. This means that there was no statistically significant difference between study and control groups regarding sociodemographic characteristics.

According to obstetric history revealed that among study group near half 40% were 1-2 had gravida, while more than two third had 1 to 2 gravida in control group. Among study group majority of labored women delivered 1-2 times, while near half had 1 - 2 of labored women delivered in control group. Almost of control group had no abortions, while majority of study group had no abortions. There were significant difference between study and control groups regarding each item on both past and current obstetric history (P <0.0001for each).

On the other hand, these results disagree with **(Taheri et al.,2022)** who study " The effect of olive cream on pain and healing of caesarean section wounds: A randomized controlled clinical trial " in Iran who mentioned that no significant differences in demographic, obstetric history between the study and control . From the researcher point of view, this may be explained that; the difference could be due to place of study research.

Concerning REEDA scale the current study showed that, there was highly significant improvement in all items in the study group after 7days from applying amniotic membrane on CS wound , This finding supported by a study of **(Setiawan et al.,2023)** that entitled as " The Benefit of Amniotic Membrane as A Surgical Wound Dressing for Post Cesarean Section" the study conducted in European and reported that the study group was highly significant different in wound healing across the groups 24 hours after cesarean section.

In the same line, this finding is congruent with the finding of **(Pandey, Mishra and Pandey.,2020)** entitled " Outcome of Burn

wound dressing with fresh placenta-An observational study " the study conducted in India and confirmed that duration of wound healing was significantly shorter ($P < 0.05$) in the studied group (17.61 ± 2.56 days) compared with the control group (21.16 ± 3.45 days)**.**

From the researcher point of view, this result may be due to the growth factors and cytokines present in placental membrane that regulate the four stages of wound healing: hemostasis, inflammation, proliferation, and remodeling.

As Regards level of pain nearly three quarter in the study group have no pain after 6 hours from applying amniotic membrane on CS wound compared to control group. highly significant difference, This result was supported by the finding of **(Ahmed, Mohammed and Mohammed Rashaan ., 2023**) entitled "Evaluation of Amniotic Membrane in the Dressing of second-degree burn" the study conducted in Iraq and reported that the highest proportion of the samples in control group had severe pain without dressing change compared to the study group, the no pain has got the lowest proportion.

On the other hand, these results disagree with **(Umoh.,2020)** who study " Clinical and Histological Outcomes of Allogenic Amnion-Chorion Membrane in the Healing of Free Gingival Graft Donor Site " in Texas who mentioned that no significant differences in level of pain between the study and control groups after using amniotic membrane. From the researcher point of view, this may be explained that; the difference could be due to the site of the dressing, and the type of surgery.

Conclusion:-

The current study concluded that, the applying of amniotic membrane in cesarean section wound as a dressing improve the healing and decrease level of pain more than routine care, which supports the research hypothesis

Recommendations

In the light of the present study findings, the following were recommended:

1. Applying of amniotic membrane in management of cesarean section wound is recommended as effective intervention in wound healing among laboring women.
2. Using amniotic membrane dressing as a complementary treatment of pain after CS.

Further researches:

1. Raising awareness of maternity nurses regarding the effect of amniotic membrane application to manage cesarean section wound.
2. Replication of the study on large representative probability sample is recommended

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