

Effect of Discharge Teaching Quality on Women's Discharge Readiness and Post Cesarean Section Outcomes

Fatma Ahmed Mohammed Sabry¹, Nawal Kamal Abd Elkhalek², Mervat M. Hassan³, Mona Thabet⁴, Mona R. Ahmed⁵

1 Obstetric and Gynecological Nursing Department, Faculty of Nursing, Sohag University. Egypt

2 Obstetric and Gynecological Nursing Department, Faculty of Nursing, South Valley University. Egypt

3 Obstetric and Gynecological Nursing Department, Faculty of Nursing, South Valley University. Egypt

4 Administration Nursing (Education Nursing Department), Faculty of Nursing, Minia University

5 Obstetric and Gynecological Nursing Department, Faculty of Nursing, Assuit University. Egypt

Abstract

Background: cesarean section rises the danger of psychological and physical status for mothers and their babies. It is necessary to exhaustive estimate the mothers' discharge readiness from hospital and prevent adverse outcomes post cesarean section. **The aim:** To evaluate the effect of discharge teaching quality on women's discharge readiness and post cesarean section outcomes. **Setting:** the study was carried out at post-partum unit in women health at Assiut University Hospital. **Design:** quasi experimental research design was used in this study. **Sample:** a convenience sample of 100 women underwent cesarean delivery, was divided into two groups, study group (50 women), control group (50 women). **Tools:** Four tools were utilized for data collection in this study, Tool (1) structured interviewing questionnaire, Tool (2) discharge readiness assessment tool, Tool (3) discharge teaching quality assessment tool, Tool (4) post cesarean section outcomes assessment tool. **Results:** There was highly statistical significance difference between the study and control group regarding the discharge readiness, and post cesarean section outcomes, with p-value 0.001. **Conclusion:** discharge teaching skills had positive effect on mother-reported discharge readiness and their post cesarean section outcomes. **Recommendations:** the nurses must practice discharge teaching to enhance the discharge readiness and post-surgical outcomes for women undergoing cesarean section.

Keywords: Cesarean Section, Discharge teaching quality, Discharge readiness, Outcomes, Women.

Introduction

Cesarean section (c-section) considered the commonest surgery in the world [Boerma et al, 2018], Cesarean delivery is the safest kind of delivery for pregnant women with affirmation cases like an intrauterine fetal death, placenta abruptio and placenta previa. Cesarean section rates are rise worldwide (Vogel et al, 2015)

In comparison between cesarean delivery and normal labor, display a high hazard of maternal mortality and morbidity, as wound hematoma, wound infection, considerable puerperal sepsis, cardiac constrict, deep venous thrombosis and hysterectomy [Bishop et al, 2019]. Additionally normal labor could lead to

physical defects, while cesarean delivery rises the risk of postpartum depression. Infection keeps greater for those who undergo cesarean delivery than for those who undergo vaginal delivery, where maternal mortality after cesarean delivery increasing fifty times higher than in the high-income countries [Khasawneh et al,2020].

Additionally, regarding to the rate of normal healing and curing, after cesarean delivery in comparison to vaginal delivery, women undergo c-delivery delaying in wound healing, so future planning deliveries and recovery are consider an emergency condition. Mothers undergo one cesarean-delivery will be at a risk of needing another cesarean-delivery

in the next pregnancy, plus maternal obesity, gestational age, another medical problem all considered important elements in decision-making according to the woman who introduce trial for delivery against a repeat cesarean-delivery [Zhao et al, 2020].

Cesarean delivery affects newborn and infant condition, it rises the admissions of neonates to intensive care unit (ICU) [Kupari et al, 2016]. Some studies clarified that babies delivered through cesarean delivery had a rising rate of their medical problems as food allergy [Polos et al, 2019] allergic rhinitis [Brandao et al, 2016], , asthma [Kristensen et al, 2016], atopic dermatitis [Papathoma et al, 2016], and childhood obesity [Mueller et al, 2015]. So, introducing good during the postpartum care plays a major role in enhancing maternal and the neonatal validity after cesarean delivery [Pan et al, 2020].

Hospital discharge readiness defined as an analyzing of the capacity of patients to go away from the hospital. Qualified RHD directs the patients to been cured enough medically to be safely discharged [Lau et al,2016]. Generally, RHD was dependent on the quality of discharge teaching (DTQ) and the patient's readiness for hospital discharge which means that the health care professional should merge patient's physiological, psychological and the social criteria to estimate their ability to go away from the hospital and improve their rehabilitation plan. Patient-reported discharge readiness has been assumed as a probable indicator of post-discharge outcomes [Qiu et al,2019]. Post cesarean section outcomes were documented according to the quality of discharge teaching and RHD between women underwent cesarean section [Weiss et al,2017].

Significance of the study

Diminish the duration for hospital length refer to that patients discharged in the early stage after recovery. A brief duration of hospital length has been constructively accompanied with post-discharge critical visits [Shih et al,2020]. So that, the discharge teaching regarding post-operative self-care and criteria of management about post-discharge conditions are very important because these ruling could

help patients to detect when he needs to medical interference [Kang et al, 2018]. So that, minimize the duration of hospital length eliminates the period available for nurses and doctors to introduce health teaching, for that the discharge teaching considered very crucial [Nurhayati et al,2019], optimizing the discharge education is related to hospital readmission. So that, quality of the discharge education for women who underwent day gynecologic operation should be well prepared to be effective, but a few research consider this subject (Wright et al,2018).

The post cesarean section outcomes were served to estimate the post-discharge outcomes. Our study, deal with the relations between quality of discharge teaching, mother-reported discharge readiness and post cesarean outcomes for mothers undergoing cesarean section

Aim of the study

The aim of the study was to evaluate the effect of discharge teaching quality on women's discharge readiness and post cesarean section outcomes

Research Hypotheses:

Discharge teaching quality will have positive effect on woman-reported discharge readiness and their post cesarean section outcomes.

Subjects and methods:

Research Design:

In this study, quasi experimental research design with study and control group was used.

Subjects:

Setting:

The study was carried out at postpartum unit in women health hospital Assuit University which is a big ward, consist of 6 rooms, 2 for normal labor, 3 for CS and one room for septic cases. This hospital has a higher rate of women attendance from both rural and urban areas in Assiut city, and it offers free services to women who live in the Assiut city.

The subjects:

A convenience sample was used in this study.

Sample size:

Sample size was estimated as 100 women, 50 women for the study group and 50 women for the control group.

Sample size calculation:

The calculation of the sample was done through using (Epi-info statistical package and version 7.2, which designed via the Center for Disease Control and Prevention (CDC) by 80 percent power, the 2.5 value was chosen according the acceptable limit of precision (D) according 95 percent confidence level (C1), with the expected prevalence with 10 percent, the worst acceptable 25 percent. As a result, the size of sample was estimated by 100 women.

Inclusion criteria:

- Women underwent cesarean section and accepted to involve in the study

Exclusion criteria:

- Women who admitted to the ICU or had danger intraoperative, postoperative problems, like amniotic fluid embolism, intraoperative& postoperative hemorrhage, intraoperative& postoperative near miss cases.

Tools of Data Collection:**Tool (1), structured interviewing questionnaire include**

Part I: woman personal data: name, age, residence, educational level, occupation, and marital status.

Part II: Data related to women past obstetric history included: number of gravidities, number of cesarean section and method of anesthesia.

Tool (2) Discharge teaching quality assessment tool: the scale included about 18 points for three parts:

Part (I) Content needed: this part estimates how much knowledge needed for the patients before discharge, it used to compare with the received part content

Part (II) Content received: this part estimate how much knowledge the patients already received

Part (III) Delivery: this part means the nurses introducing methods to the knowledge needed toward discharge

Scoring system

The content needed, content received parts contained (items from 1 to 6), the delivery part includes 12 items (items 7–18). Every item scored from zero score to ten score and the total score of this scale is the collection of the content received and delivery, the highest total scores referring to discharge teaching improvement (Weiss et al,2007)

Tool (3): Discharge readiness assessment tool. This tool was created in 2006 by, Weiss et al,2006, its reliability and validity were done in 2020 by, Chen et al,2020. This scale includes four parts:

Part (I) personal status (7 items), which assess the mother's emotional and physical conditions.

Part (II) knowledge (9 items), which include information about the needs and problems of the mothers and their infants post-cesarean section time

Part (III) coping ability (4 items) that include the woman's ability to care for her-self and the baby's healthcare demands after discharge

Part (IV) the social support (2 items), which include the instrumental and emotional assistance expected to be exist after discharge from the hospital.

Scoring system

This scale considered a self-estimation scale which includes a sum of 22 items. Remaining items score ranges from zero to ten score. Not at all or completely unknown = 0 score and completely able or completely know = 10 score. Higher total scores indicate greater readiness for hospital discharge.

Tool (4) Post cesarean section outcomes assessment tool

This tool designed by researcher to assess post cesarean section outcomes through

observational check list such as wound site infection, pain, fever, urinary tract dysfunction, bowel dysfunction, vaginal bleeding.

Content validity:

The study tools were examined for content validity by a panel of three experts in the fields of maternity and newborn health nursing and community health nursing, and modifications were made as needed.

Content reliability:

The tool reliability was evaluated by Cronbach's alpha reliability test $\alpha=92\%$ that revealed every tool composed of relatively homogenous points as detected from moderate to high reliability of every tool.

Ethical and legal considerations:

Official permission was received from the manager of the women health hospital at Assiut University. Subjects agreed to involve in the study after the aim of the study was informed to them. Prior to data collection, women were informed of the purpose and nature of this study, which will not cause any risk or pain. Women were also assured that the data would be considered confidential and used only for research purposes. The researcher informed the participants that their involvement in the study was entirely voluntary and that they had the right to leave the study at any time.

Pilot study:

Ten women (10%) were carried out from total sample to be participated in the pilot study to assess the applicability and clarity of the tools; no changes were made. The women participated in the pilot study were included in the total sample.

Procedure:

The actual fieldwork was conducted at a six-months period from June 2022 to November 2022, including the development, implementation, and evaluation of the discharge teaching quality.

Preparatory phase

A discharge teaching quality was designed in Arabic language following

reviewing the relevant current Arabic and English literature covering various aspects of the discharge instructions, in order to address the readiness of women for discharge and evaluate post cesarean section outcomes.

The implementation phase:

Assessment phase: the researcher corresponded the women through face to face (study, control group) every interview took from 15 to 30 minutes before the beginning of discharge teaching, at the beginning of each interview, after that the researcher introduced herself to the woman then the researcher explained the purpose and the nature of this study, an oral consent was obtained from every woman to participate in the study. After that, the researcher assessed the personal data & the obstetrical history of the woman using the structured questionnaires which were completed face-to-face before the beginning of discharge teaching. Women in control group received Hospital routine care only, While Women in the study group received Hospital routine care plus the discharge teaching quality.

Intervention phase (Discharge teaching quality)

The discharge teaching was given to every woman in the study group separately and was presented for 25 minutes with video assisted teaching. **First interview:** It included (general postnatal care with appropriate timing and services provided – health education about wound care and signs of wound infection – education about using antibiotics – health education about future birth – contraceptive counseling – psychological condition, self-esteem – health education toward post-partum depression). **Second interview:** It included (physiological and psychological changes, physiological and abnormalities conditions of infant, nutrition, fluid intakes, ambulation, activity, rest, warning signs, medications, breast feeding and follow up). At the end of discharge teaching protocol, questions of mothers were debated to correct any mistakes or misunderstanding, and a brochure was given to mother. This brochure included all the instructions needed about discharge teaching such as detection and management of the

physiological, pathological changes for maternal and common problems of babies and infant, as well infants' behaviors and needs.

Evaluation phase

The effect of the discharge teaching quality on women discharge readiness was evaluated after one day, women' post cesarean section outcomes was evaluated after one month through WhatsApp for the two groups, using the online self-evaluation tool for report postoperative problems including wound site infection, pain level, fever, urinary tract defect, bowel dysfunction and vaginal bleeding.

Statistical analysis

By using the statistical package for social science program (SPSS. version 22), data entry, statistical analysis was performed. Quantitative variables was presented as mean + SD. Qualitative variables was presented as a number and percentage, comparison among the quantitative variables was done by using student t-test, comparison among the qualitative variables was performed by using chi-square.

Results

Table (1): Revealed that the women' distribution regarding to their personal data. According to age, it was noticed that women' mean age were 30.00 ± 5.84 , more than half (58.0%) of the women their age between (25< 30yrs old). Regarding residence, it was observed that more than two thirds (76%) of the mothers were living in rural areas. It was observed that a majority (60.0%) of the women had university level education. According to women's occupation it was observed that most (80.0%) of the women were employed.

Table (2): Revealed the distribution of the women regarding to their obstetrical history.

It was noticed that about half (50.0%) of the women were primigravida and first time for cesarean section.

Table (3): Showed the distribution the women in study group according to their perception towards the discharge teaching quality. Where most of the women had high level of perception according discharge teaching quality with mean score 8.44 ± 1.44 .

Table (4): showed women distribution according to their perception level towards RHD. Where most of the women in study group who had discharge teaching, had high perception level toward their RHD with mean score 8.05 ± 1.11

Figure (1): Showed the distribution of women according to their reported discharge readiness, most (85%) of the mother in the study group was reported discharge readiness, but less than one quarter (20%) of the women in the control group was reported discharge readiness.

Table (5): Showed the relationship between the discharge teaching and discharge readiness and clarifies high statistical significance between discharge teaching quality and readiness for discharge from hospital, women who had teaching discharge, had high level readiness for discharge from the hospital with p- value 0.001

Figure (2): Showed women' distribution according to post cesarean outcomes, and clarifies highly statistical significance between quality of discharge teaching and post cesarean section outcomes with p- value 0.001, as most (85%) of women in the control group was suffered from adverse outcomes after discharge, in compared to 12% only among the study group who was suffered from adverse outcomes after discharge.

Table (1): Distribution the women regarding to their socio-demographic data (N=100)

Personal data	Study N=50		Control N=50	
	(N=50)	%	(N=50)	%
1.Age				
Less than 20 years	5	10.0%	7	14.8%
20-24 years	11	22.0%	10	20.0%
25-30	29	58.0%	24	48.2%
31-35	3	6.0%	5	10.0%
More than 35	2	4.0%	4	8.0%
Mean age ± SD	30.00±5.84			
2.Residence				
Urban	38	76.0%	35	70.0%
Rural	12	24.0%	15	30.0%
3.Educational level				
Illiterate	2	4.0%	1	2%
Read and write	4	8.0%	4	8%
Secondary education	14	28.0%	13	26%
University or higher education	30	60.0%	32	64%
4.Women's occupation				
Housewife	10	20%	11	22.0%
Employed	40	80%	39	78.0%
5.Marital status				
Married	45	90%	40	80%
Un married	5	10%	10	20%

Table (2) Distribution the women regarding to their obstetrical history (N=100)

Obstetrical history	Study (N=50)		Control (N=50)	
	N	%	N	%
1- Gravida				
Primigravida	25	50%	23	46.0%
Multigravida	25	50%	27	54.0%
2- Number of cesarean sections				
First time	25	50%	23	46%
Second time	17	34%	18	36%
Third or more	8	16%	9	18%
3- Pregnancy complications				
Yes	14	28%	16	32%
No	36	72%	34	68%
4- Anesthesia method				
Epidural	20	40%	18	36.0%
Spinal	20	40%	22	44.0%
General	10	20%	10	20%

Table (3) Distribution the women in the study group according to their perception towards the discharge teaching quality (N=50)

Discharge teaching quality	Item	Mean ± SD	Level
1- Content needed <ul style="list-style-type: none"> • Mother care • Infant care • Medical treatment and instrumental requirements • Medication practice and treatment • Time and person to call for help • Family members' information 	6	8.51 ± 1.01 8.75 ± 1.02 7.22 ± 2.22 7.84 ± 1.62 8.59 ± 1.20 8.64 ± 1.17 8.46 ± 1.01	High
2- Content received <ul style="list-style-type: none"> • Infant's care • Mothers Emotional status • Medication practice and treatment • Time and person to call for help • Family members' information • Medical treatment and instrumental requirements 	6	7.12 ± 1.93 7.75 ± 1.69 7.22 ± 2.12 8.84 ± 1.02 6.09 ± 2.20 7.64 ± 1.67 7.46 ± 1.51	Moderate
3- Delivery <ul style="list-style-type: none"> • Resolving questions and concerns • Listening to worries of mothers • Paying attention to values and beliefs of mothers • Guides the methods of infant care • Teaching about understood manner • Information understanding • At a appropriate time to guidance Delivery • Participation of family members • Improving the mother care' confidence • Knowledge about the emergency action • Elimination anxiousness about returning home • Self-confidence 	12	8.60± 1. 46 7.84 ± 1.82 7.46 ± 1.51 8.69 ± 1.10 7.09 ± 2.00 8.19 ± 1.20 8.04 ± 1.67 7.46 ± 1.51 7.34 ± 1.70 8.14 ± 1.57 7.46 ± 1.51 8.09 ± 1.20 8.64 ± 1.17	High
Total scale	18	8.44 ± 1.44	High

Table (4) women Distribution according to their Perception level regarding RHD

Discharge readiness	Item	Mean \pm SD	Level
1- Personal condition	7	8.81 \pm 1.01	High
<ul style="list-style-type: none"> • Physical readiness of mothers • Mother's strength • Mother's energy • Mental state of the Mothers • Mother's self-care • Mother's emotionally ready 		8.65 \pm 1.34 8.85 \pm 1.11 7.75 \pm 1.94 8.14 \pm 1.36 8.21 \pm 1.71 9.27 \pm 0.75	
2- Knowledge scale	9	8.61 \pm 1.11	High
<ul style="list-style-type: none"> • Child care • personal needs of Child • Development and growth need for child • Medical needs • Elements for attention after going home • Person to call for help • Childcare post returning home • Follow-up treatment • Community medical service 		8.15 \pm 1.74 8.65 \pm 1.01 7.15 \pm 1.94 8.14 \pm 1.36 8.21 \pm 1.71 7.25 \pm 1.71 7.25 \pm 1.11 6.25 \pm 1.71 8.15 \pm 1.01	
3- Coping ability scale	4	8.55 \pm 1.21	Moderate
<ul style="list-style-type: none"> • Handle demands at home • Performing personal care • Medical treatment • Household activity support 		8.15 \pm 1.74 8.25 \pm 1.21 6.25 \pm 1.71 6.55 \pm 1.94	
4- Expected social support	2	8.25 \pm 1.71	High
<ul style="list-style-type: none"> • Emotional support • Medical care or resources support 		7.25 \pm 1.25 8.25 \pm 1.71	
Total scale	22	8.05 \pm 1.11	High

Figure (1) Distribution of women according to their reported discharge readiness (N=100)

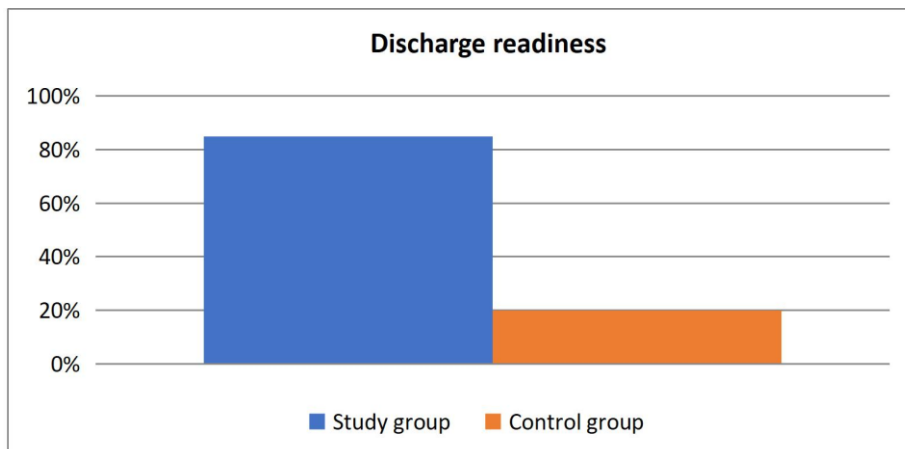
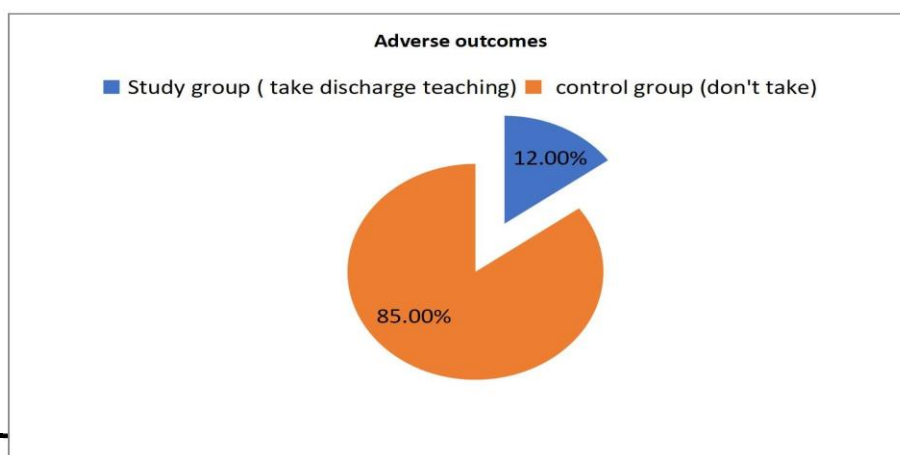


Table (5): Relationship between the discharge teaching and discharge readiness (N=50)

Variables	Mothers' readiness for hospital discharge	Knowledge of mothers	Physical, Emotional condition	Social support	Coping ability
- Total quality of discharge teaching scale	0.448	0.367	0.406	0.354	0.090
- Content needed	0.234	0.060	0.379	0.330	0.120
- Content received	0.427	0.374	0.337	0.332	0.093
- Delivery	0.382	0.297	0.379	0.306	0.073

**p- value 0.001

Figure (2) Distribution of women according to post cesarean outcomes (N=100)



Discussion

Women undergoing cesarean section are discharged during early stage after recovery. The discharge teaching quality and discharge readiness are crucial to patients' post cesarean section outcomes, but minimal research has imported with that, thus our study was aimed to evaluate the effect of Discharge Teaching Quality on women's Discharge Readiness and Post Cesarean Section Outcomes

This study revealed that the mean age and SD of the women was (30.00 ± 5.84) years, most of women had university education level, employed and more than two thirds of the mothers were from urban areas, also most of women were married, these were come in accordance with (XIA, et al, 2022) who performed a cross-sectional study in China about "women readiness for discharge from hospital post a cesarean delivery and accompanied factors between Chinese mothers" and observed that the mean age of the women was (31.10 ± 6.5) , the majority of the women had higher education.

The present study revealed that mean score of the discharge teaching quality for women who under-went cesarean delivery was 8.44 ± 1.44 , these results similar with (Zhang et al, 2021) who performed study in China about "discharge education, hospital discharge readiness and after-discharge outcomes for cataract patients" and observed that participants received their needed information about discharge, as the doctors and nurses introduced positive quality discharge education for these patients despite their short duration of hospital length.

According to the finding of the current study the "Delivery" part, get median score which was relatively high, this result was agree with the result of (Kang et al, 2018) study about "discharge education introduced for general surgical patients toward their management of recovery after discharge" who reported that the discharge teaching practices and effects of doctors and nurses were desirable for gynecological women who under-went day operations.

As regarding, Hospital Discharge Readiness, the mean score was 8.44 ± 1.44 , these results were similar with the study done by (Qian et al, 2021) about "hospital discharge readiness and associated factors", in this study the researchers noticed that the readiness of postnatal mothers for hospital discharge was highest.

As regard to the relation between the discharge teaching quality and discharge readiness, it was verified to be effective relation between hospital discharge readiness and each dimension of the discharge teaching quality as hospital discharge readiness showed strong positive relations. These findings were consistent with previous study done by (Meng et al, 2020) about "Association among patient-reported readiness to hospital discharge and outcomes in patients who diagnosed with anxiety disturbances" in which they reported that discharge education as a medical curative process was verified to be an indicator for hospital discharge readiness.

Also the current study found relation between discharge teaching quality and post cesarean section outcomes, These findings indicated positive relation between discharge teaching quality and post cesarean outcomes, as the higher skills level and positive effects of doctors and nurses' during the discharge teaching, affect positively on the post cesarean section outcomes. Moreover, these findings support that the discharge teaching as an instrumental curative in medical process was verified to be an indicator as postsurgical outcomes, these results similar with (Hua et al, 2020) who performed study about "parental's readiness for hospital discharge like as a broker among discharge teaching quality and self-efficacy of prenatal in women of preterm babies" and reported that the discharge teaching quality had positive relations with postsurgical outcomes.

Strengths of the research

The main strengths of this study its novelty and the prospective design of the study.

Limitations of the study

- The poor national and international studies that study the current research topic.
- Also, sometimes the sessions were protracted because of noise and other interruption of individuals, finally the challenging was in collecting the subjects group, prepare the place for meeting and explain the sessions

Conclusion

Women who received discharge teaching had significant improvement in Their discharge readiness and post cesarean section outcomes compared to the women who didn't receive it.

Recommendations

- Nurses should practice discharge teaching to enhance the discharge readiness and post-surgical outcomes of women undergoing cesarean section.
- Nurses should assess women' physical conditions at discharge and teach them how to reduce stress and manage post-Surgical problems.
- Further research should be conducted to evaluate effect of discharge teaching quality on discharge readiness and post cesarean outcomes and to develop effective strategy to overcome discharge readiness hesitancy.

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