ORIGINAL ARTICLE

The Effectiveness of the Enhanced Recovery after Cesarean Surgery (ERACS) method on patients' pain levels and satisfaction in hospitals: a quasi-experimental posttest design

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Received: 13 May 2023 **Revised:** 2 July 2023 **Accepted:** 12 July 2023 **Available online:** September 2023
DOI: 10.55131/jphd/2023/210309

ABSTRACT

Enhanced Recovery after Cesarean Surgery (ERACS) is an evidence-based, interdisciplinary method used before, during, and after surgery. The purpose of this study is to determine the effectiveness of ERACS on patients' pain levels and satisfaction during their hospital stay. This research is expected to be a consideration for the development of hospital midwifery services in the future. This study adopted quantitative research methodology with a quasi-experimental posttest design only approach. The sampling technique used was purposive sampling. There were two types of subject criteria: the intervention group with ERACS and control groups of mothers who had conventional Cesarean sections (C-sections). A total of 140 respondents were divided into the control and experimental groups, with 70 respondents each. Pain levels were measured using the visual analog scale (VAS). Patient satisfaction data were collected using a pretested questionnaire and analyzed using IBM-SPSS version 22 statistics. There was a significant difference between pain levels at rest 24 h after C-section ($p < 0.001$) and at movement 24 h post-C-section ($p < 0.001$) in the control group compared to the experimental group. The ERACS method has been shown to be effective in reducing pain levels at rest and at movement in patients 24 h after C-section ($p < 0.001$). There was no significant difference between ERACS and non-ERACS patient satisfaction, but the customer satisfaction index (CSI) indicated that the patients were very satisfied. The ERACS method has been shown to be effective in reducing pain levels in C-section patients. This study also proved that the ERACS patients were very satisfied, based on the CSI results. Therefore, the ERACS method must be used and improved to enhance hospital midwifery services.

Key words:
ERACS; post-operative pain; patient satisfaction

Citation:
Fithriani Sri Utami, Elsye Maria Rosa. The Effectiveness of the Enhanced Recovery after Cesarean Surgery (ERACS) method on patients' pain levels and satisfaction in hospitals: a quasi-experimental posttest design. J Public Hlth Dev. 2023;21(3):107-119 (https://doi.org/10.55131/jphd/2023/210309)

INTRODUCTION

Enhanced Recovery After Cesarean Surgery (ERACS) is a fast post-Cesarean recovery method consisting of preoperative, intraoperative, and postoperative stages.[1] The ERACS method is a development of the *Enhanced Recovery After Surgery* (ERAS) protocol, which was originally applied to digestive surgery operations. This ERAS protocol has been shown to reduce complications during surgery, reduce the length of hospital stays, and increase patient satisfaction. Then this ERAS protocol is applied in obstetric surgery.[2]

ERAS has been applied in the field of obstetrics and has been studied comprehensively for Cesarean section (C-section) in recent years. The principles of ERAS can be effectively applied to Cesarean delivery with excellent protocol compliance.[3] The implementation of the ERAS protocol in C-sections is associated with a significant improvement in analgesic and recovery outcomes. This improvement in the quality of care suggests that the ERAS protocol can be considered for elective C-sections.[4,5]

A C-section is the most performed abdominal surgery on women worldwide. The problem after a C-section is postpartum and postoperative treatment. The ERACS method is applied to effectively overcome this problem.[6]

ERACS shows encouraging results in clinical practice. Available evidence suggests that ERACS significantly reduces postoperative complications, lowers postoperative pain scores, and lowers opioid use, shortening hospital stays, and potentially reducing hospital costs without sacrificing remission rates.[7,8]

Other studies have shown that ERACS can shorten the *length of stay*, reduce hospital costs, and lower the incidence of complications. The study adds to the growing body of evidence showing that ERACS is feasible, effective, and safe. However, because of the limited quantity and quality of studies and their potential heterogeneity, further large and randomized controlled studies should be conducted to confirm these findings.(8) The implementation of the ERACS protocol does not negatively affect neonates and can benefit both the mother and her baby.[9]

In the future, rapid recovery may be considered for all women who give birth to help them quickly return to their normal status of physical and mental functioning while reducing medical expenses and unnecessary use of medical resources. The goal of ERACS is to accelerate recovery and improve maternal and infant outcomes. ERACS is only the beginning of the development of optimized methods in pregnancy.[4] Another study on ERACS was able to show a significant reduction in length of stay during surgery and a significant increase in exclusive breastfeeding rates.[10] The application of the ERAS protocol in patients undergoing elective C-sections significantly reduced pain during surgery.[11,12]

Patients who will be undergoing the ERACS method need to get complete and clear information so that they can make decisions regarding their health care. Patients should have complete information and understand this method before the procedure is performed. This is in line with the implementation of patient-centered care (PCC) which is a health care system that consistently involves patients in making decisions regarding their health care.[13] PCC provides better treatment outcomes, increases patient satisfaction, and reduces health costs.[14]

Poorly treated postoperative pain can contribute significantly to surgical patient morbidity, resulting in delayed recovery, and the ability to return to daily functional activities. Previous research has shown that pain that is not treated properly after a C-section is associated with an increased incidence of chronic pain and post-traumatic stress syndrome.[15]

Maternal satisfaction with maternity health services is an important indicator of quality of health services. Quality of care is increasingly recognized internationally as an important aspect of maternal and neonatal health services. This health service includes care during childbirth and in the postpartum period. Quality maternity services are specialized services associated with very important events in the life of every future mother, including the birth of a child. Improving the quality of maternal health is one of the eight "Major Development Goals" of the World Health Organization (WHO).[16] The concept of "patient satisfaction" is a quality indicator routinely used in marketing as a measure of patient retention and a measure of the quality of health care. Patient satisfaction can affect clinical outcomes, so it means a lot to health care providers.[17]

Given the importance of research on the level of satisfaction and the attributes that need to be improved to meet patient satisfaction, researchers need to measure the quality of service carried out using importance-performance analysis (IPA)[18] and measure customer satisfaction using the customer satisfaction index (CSI).[19] The results will show how the level of patient satisfaction with hospital services can be used as an evaluation in decision-making to improve service quality.[20]

The research was conducted at a private hospital located in Klaten, which is in Central Java, Indonesia. This hospital specializes in providing maternal and pediatric care, with its midwifery services being particularly prominent. It is important to note that there is still a lack of research on the ERACS method in Indonesian hospitals. The purpose of this study is to determine the effectiveness of ERACS on patients' pain levels and satisfaction in the hospital. This research is expected to be a consideration for the development of hospital midwifery services in the future.

METHODS

Study design and population

This study was specifically designed using only a quasi-experimental posttest design. The study population consisted of patients in the postpartum period following C-sections. The research was conducted at a private hospital located in Klaten, which is in Central Java, Indonesia. The ERACS method was applied to patients who underwent elective or planned procedures. Spinal block anesthesia was used as the type of anesthesia.

Sample size and sampling procedure

The study sample size was determined using a sample size calculator, considering a confidence level of 95%, a margin of error of 5%, and a population proportion of 50%. On average, there were 145 C-section patients per month. Data collection was conducted in March 2023.

This study employed purposive sampling, which involved selecting research participants based on specific considerations to ensure the obtained data is more representative. The inclusion criteria for the intervention group were as follows: patients who underwent treatment with the ERACS method at the hospital, available to participate in the study, over 18 years old, and conscious. Similarly, the inclusion criteria for the control group were patients who underwent a conventional C-section at the hospital, available to participate in the study, over 18 years old, and conscious. The exclusion criteria encompassed individuals employed at the hospital, patients with mental disorders, and those experiencing a decrease in consciousness or being in an unconscious state. Ultimately, the intervention group consisted of 70 respondents, while the control group comprised 70 respondents.

Data collection

The research instruments used in this study were the Questionnaire and Visual Analog Scale (VAS), which were administered to measure pain levels at rest 24 hours postoperatively and during movement 24 hours postoperatively. Prior to use, the questionnaire underwent validity and reliability testing. The patients completed the questionnaire and utilized a previously described device to assess their pain levels. The VAS, known as the most effective tool for measuring pain intensity, has been widely used in clinical care and research. It is presented as a horizontal line, and researchers provided explanations for the meaning of each point on the scale. The patients were evaluated and asked to mark the scale corresponding to the pain they experienced.[15]

Data analysis

The data obtained were processed and analyzed using SPSS for Windows version 22. Univariate analysis was used to analyze each variable. Bivariate analysis was used to analyze simultaneously two variables. In this study, an independent t-test for the variables of pain level and patient satisfaction level of the ERACS method in the hospital, and multivariate analytical tests were carried out so that the significance of the ERACS method in reducing pain was known. As for patient satisfaction, a special analysis was carried out regarding the expectations and reality experienced by patients after obtaining the ERACS method.

Ethical Consent

Ethical approval for this study was obtained from the Health Research Ethics Commission, Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta (No. 120/EC-KEPK FKIK UMY/II/2023). Informed consent was obtained from each respondent, and strict confidentiality was maintained for the respondents' data.

RESULTS

Characteristics of respondents

Table 1 Characteristics of respondents

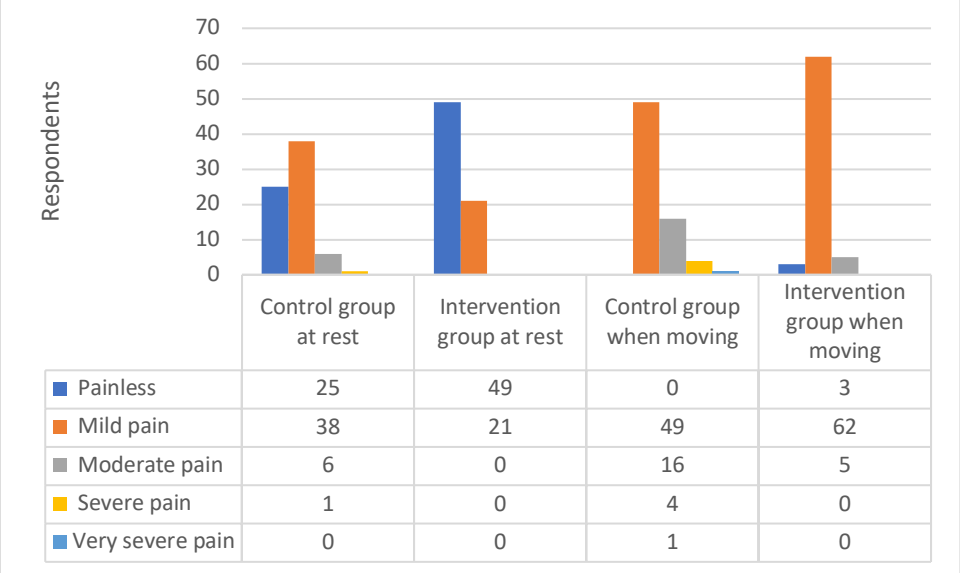
	Characteristics of respondents	**Control group**	**%**	**Intervention group**	**%**	**Total respondents**	**%**
Age (year)	18-22	14	20	6	8,6	20	14,3
	23-27	26	37.1	17	24.3	43	30.7
	28-32	12	17.1	22	31.4	34	24.3
	33-37	13	18.6	14	20	27	19.3
	>38	5	7.2	11	15.7	16	11.4
	Total	70	100	70	100	140	100
Religion	Islam	66	94.3	68	97.2	134	95.7
	Christian	1	1.4	1	1.4	2	1.4
	Catholic	2	2.9	1	1.4	3	2.2
	Hindu	1	1.4	0	0	1	0.7
	Buddhist	0	0	0	0	0	0
	Confucianism	0	0	0	0	0	0
	Total	70	100	70	100	140	100
Education	Elementary school	3	4.3	3	4,3	6	4.3
	Junior school	8	11.4	10	14,3	18	12.9
	High school	38	54.3	35	50	73	52.1
	Bachelor	21	30	22	31.4	43	30.7
	Total	70	100	70	100	140	100

	Characteristics of respondents	Control group	%	Intervention group	%	Total respondents	%
Job	PNS/TNI/POLRI	3	4.3	5	7.1	8	5.7
	Self employed	3	4.3	6	8.6	9	6.4
	Private employees	26	37.1	23	32.9	49	35
	Housewives	38	54.3	36	51.4	74	52.9
	Total	70	100	70	100	140	100
Income	<2.000.000	40	57.1	40	57.1	80	57.2
	2.000.001-4.000.000	22	31.5	16	22.9	38	27.1
	4.000.001-6.000.000	5	7.1	9	12.9	14	10
	>6.000.000	3	4.3	5	7.1	8	5.7
	Total	70	100	70	100	140	100
Types of financing	National health insurance	66	94.3	68	97.1	134	95.7
	Self-financing	4	5.7	2	2.9	6	4.3
	Total	70	100	70	100	140	100
Treatment class	First class	11	15.7	9	12.9	20	14.3
	Second class	18	25.7	23	32.9	41	29.3
	Third class	39	55.7	38	54.2	77	55
	VIP class	2	2.9	0	0	2	1.4
	Total	70	100	70	100	140	100
Previous childbirth history	Vaginal	13	18.6	11	15.7	24	17.2
	C-section	32	45.7	40	57.1	72	51.4
	First delivery	25	35.7	19	27.2	44	31.4
	Total	70	100	70	100	140	100
Baby condition	Born alive	70	100	70	100	140	100
	Stillbirth	0	0	0	0	0	0
	Total	70	100	70	100	140	100
Previous stay history	0-6 Months	3	4.3	4	5.7	7	5
	7 Months–1 Year	2	2.9	1	1.4	3	2.1
	2-5 Tahun	6	8.6	9	12.9	15	10.7
	5 Years	3	4.3	9	12.9	12	8.6
	Never	56	80	47	67.1	103	73.6
	Total	70	100	70	100	140	100
Reasons to choose this hospital	Modern Facilities Available	10	14.3	12	17.1	22	15.7
	Quality Care	18	25.7	14	20	32	22.9
	Referred	10	14.3	4	5.7	14	10
	Comfortable	11	15.7	15	21.4	26	18.6
	Availability of a Good Doctor	20	28.6	23	32.9	43	30.7
	Low Cost	1	1.4	2	2.9	3	2.1
	Total	70	100	70	100	140	100

The characteristics of the study respondents are depicted in Table 1. Most respondents were in the age group of 23-27 years (30.7 %). Most respondents were Muslims. Most respondents had a High School Education (52.1 %). Most respondents worked as housewives (52.9 %). The highest income of the respondents was below two million rupiah per month (57.2 %). The largest type of financing is National Health Insurance (95.7 %), and 55% of respondents were treated in grade 3. The largest previous history of childbirth was C-Section with 51.4%. The condition of the baby born was 100% alive. Most of the respondents were patients who had never stayed at this hospital before (73.6%). The most common reason for choosing this hospital was the availability of good doctors (30.7%).

Pain level analysis

The study measured 24 h postoperative pain levels at rest and during movement using the Visual Analog Scale (VAS). VAS is one of the most common methods of measuring pain intensity in post-C-section patients. This method involves using horizontal lines labeled with the numbers 0-10, where 0 indicates no pain at all and 10 indicates the most severe pain imaginable. To perform VAS measurements in post-C-section patients, the doctor or nurse will ask the patient to mark points on a horizontal line that correspond to the intensity of the pain that they are experiencing.



	Control group at rest	Intervention group at rest	Control group when moving	Intervention group when moving
Painless	25	49	0	3
Mild pain	38	21	49	62
Moderate pain	6	0	16	5
Severe pain	1	0	4	0
Very severe pain	0	0	1	0

Figure 1 Results of measurement of pain level at rest and when moving 24 h after C-section

Figure 1 describes the level of pain at rest and when moving 24 h after a C-section. The level of pain at rest in the control group, “mild pain” was the highest pain level with 38 respondents, or 54.3 %, whereas in the intervention group, the highest pain rate was “painless,” with 49 respondents, or 70 %. In the control group, the highest level of pain when moving was “mild pain,” with 49 respondents, or 70 %. In the intervention group, the highest level of pain was “mild pain,” with 62 respondents, or 88.6 % of respondents.

In this study, an analysis was carried out using independent samples T-test to determine whether there was a significant difference in pain level between the control group and the experimental group. If the significance value of the two-tailed test is less than 0.05, then we can conclude that there is a significant difference between the two groups of data. However, if the significance value of the two-tailed test is greater than 0.05, then we cannot reject the null hypothesis and conclude that there is no significant difference between the two groups of data.

Table 2 Independent test results *T-test* pain level differences

Condition	Respondents	N	Mean	Std. deviation	Sig. (2-tailed)
Pain when moving	Control	70	2.84	1.807	0.000
	Experiment	70	1.81	1.011	
Pain at rest	Control	70	1.09	1.412	0.001
	Experiment	70	0.44	0.555	

As shown in Table 2, the significance values of two-tailed tests were <0.001 and <0.001 or less than 0.05. Therefore, there were significant differences between the two groups of data. In this study, there was a significant difference between the level of pain at rest and during movement in the control group and the experimental group.

The Effectiveness of the ERACS Method on Pain Level

The effectiveness of this method was assessed using multivariate analytical test. Therefore, the significance of the ERACS Method in reducing pain can be known. The researchers also analyzed the fullness of assumptions before the test was performed, resorting to nonparametric analysis when assumptions were not met. The researchers also determined the effect size.

The Kolmogorov-Smirnov test showed the p value <0.05, indicating that the pain level was not normally distributed. The assumptions for the ANOVA test were not met, so a nonparametric test was carried out.

Based on the result of the Kruskal-Wallis test, the p-value was < 0.001, indicating that there was a significant difference between the level of pain at rest and when moving in the control group and the experimental group. The results of Eta Squared were 0,113 (pain level at rest) and 0,111 (pain level when moving) or had a moderate effect. In conclusion, the ERACS method is effective in reducing pain levels at rest or moving 24 h after a C-section.

Patient satisfaction analysis

In this study, an analysis of patient satisfaction was carried out using five dimensions, namely the reliability (R), responsiveness (RS), assurance (A), the empathy (E), and tangible (T) dimensions.[21]

Table 3 Results of the patient satisfaction questionnaire

Statement	Category	Control group		Intervention group		Sig. (2-tailed)
		Frequency	Percent (%)	Frequency	Percent (%)	
T1	Quite Satisfied	12	17.1	15	21.4	0.602
	Satisfied	**35**	**50**	**45**	**64.3**	
	Very satisfied	23	32.9	10	14.3	
	Total	70	100	70	100	
T2	Very dissatisfied	1	1.4	0	0	
	Quite Satisfied	19	27.1	12	16.1	
	Satisfied	**28**	**40**	**42**	**60**	
	Very satisfied	22	31.4	16	22.9	
	Total	70	100	70	100	

Statement	Category	Control group		Intervention group		Sig. (2-tailed)
		Frequency	Percent (%)	Frequency	Percent (%)	
T3	Very dissatisfied	1	1.4	0	0	
	Quite Satisfied	10	14.3	8	11.4	
	Satisfied	**37**	**52.9**	**42**	**60**	
	Very satisfied	22	31.4	20	28.6	
	Total	70	100	70	100	
T4	Quite Satisfied	5	7.1	3	4.3	
	Satisfied	30	42.9	**36**	**51.4**	
	Very satisfied	**35**	**50**	31	44.3	
	Total	70	100	70	100	
T5	Quite Satisfied	6	8.6	5	7.1	
	Satisfied	**37**	**52.9**	**43**	**61.4**	
	Very satisfied	27	38.6	22	31.4	
	Total	70	100	70	100	
E1	Quite Satisfied	9	12.9	4	5.7	0.129
	Satisfied	27	38.6	**38**	**54.3**	
	Very satisfied	**34**	**48.6**	28	40	
	Total	70	100	70	100	
E2	Quite Satisfied	1	1.4	3	4.3	
	Satisfied	28	40	33	47.1	
	Very satisfied	**41**	**58.6**	**34**	**48.6**	
	Total	70	100	70	100	
E3	Quite Satisfied	3	4.3	7	10	
	Satisfied	33	47.1	**37**	**52.9**	
	Very satisfied	**34**	**48.6**	26	37.1	
	Total	70	100	70	100	
E4	Quite Satisfied	6	8.6	5	7.1	
	Satisfied	27	38.6	**40**	**57.1**	
	Very satisfied	**37**	**52.9**	25	35.7	
	Total	70	100	70	100	
E5	Quite Satisfied	3	4.3	5	7.1	
	Satisfied	27	38.6	**35**	**50**	
	Very satisfied	**40**	**57.1**	30	42.9	
	Total	70	100	70	100	
R1	Quite Satisfied	5	71	4	5.7	0.121
	Satisfied	29	41.4	**37**	**52.9**	
	Very satisfied	**36**	**51.4**	29	41.4	
	Total	70	100	70	100	
R2	Quite Satisfied	1	1.4	2	2.9	
	Satisfied	29	41.4	**38**	**54.3**	
	Very satisfied	**40**	**57.1**	30	42.9	
	Total	70	100	70	100	
R3	Quite Satisfied	4	5.7	3	4.3	
	Satisfied	22	31.4	33	47.1	
	Very satisfied	**44**	**62.9**	**34**	**48.6**	
	Total	70	100	70	100	
R4	Quite Satisfied	1	1.4	2	2.9	
	Satisfied	23	32.9	33	47.1	
	Very satisfied	**46**	**65.7**	**35**	**50**	
	Total	70	100	70	100	
R5	Quite Satisfied	3	4.3	2	2.9	
	Satisfied	28	40	**36**	**51.4**	
	Very satisfied	**39**	**55.7**	32	45.7	
	Total	70	100	70	100	
RS1	Quite Satisfied	2	2.9	3	4.3	0.225
	Satisfied	24	34.3	31	44.3	

Statement	Category	Control group		Intervention group		Sig. (2-tailed)
		Frequency	Percent (%)	Frequency	Percent (%)	
	Very satisfied	**44**	**62.9**	**36**	**51.4**	
	Total	70	100	70	100	
RS2	Quite Satisfied	6	8.6	3	4.3	
	Satisfied	27	38.6	**36**	**51.4**	
	Very satisfied	**37**	**52.9**	31	44.3	
	Total	70	100	70	100	
RS3	Quite Satisfied	1	1.4	2	2.9	
	Satisfied	25	35.7	28	40	
	Very satisfied	**44**	**62.9**	**40**	**57.1**	
	Total	70	100	70	100	
RS4	Quite Satisfied	1	1.4	1	1.4	
	Satisfied	21	30	28	40	
	Very satisfied	**48**	**68.6**	**41**	**58.6**	
	Total	70	100	70	100	
RS5	Quite Satisfied	1	1.4	3	4.3	
	Satisfied	23	32.9	29	41.4	
	Very satisfied	**46**	**65.7**	**38**	**54.3**	
	Total	70	100	70	100	
A1	Quite Satisfied	3	4.3	1	1.4	0.326
	Satisfied	26	37.1	31	44.3	
	Very satisfied	**41**	**58.6**	**38**	**54.3**	
	Total	70	100	70	100	
A2	Quite Satisfied	2	2.9	2	2.9	
	Satisfied	25	35.7	**35**	**50**	
	Very satisfied	**43**	**61.4**	33	47.1	
	Total	70	100	70	100	
A3	Quite Satisfied	2	2.9	3	4.3	
	Satisfied	28	40	30	42.9	
	Very satisfied	**40**	**571**	**37**	**52.9**	
	Total	70	100.	70	100	
A4	Quite Satisfied	0	0	1	1.4	
	Satisfied	25	35.7	29	41.4	
	Very satisfied	**45**	**64.3**	**40**	**57.1**	
	Total	70	100	70	100	
A5	Quite Satisfied	3	4.3	4	5,7	
	Satisfied	25	35.7	30	38.6	
	Very satisfied	**42**	**60**	**36**	**55.7**	
	Total	70	100	70	100	

On the basis of the independent t-test, the p-value was >0.05, indicating that there was no significant difference between the patient satisfaction of the control group and the intervention group.

Customer satisfaction index (CSI)

The patient satisfaction index can be calculated using the following steps:

1. Calculate mean importance score (MIS) and mean satisfaction score (MSS).

2. Calculate the weighting factor (WF).

This weight is the percentage of MIS values per attribute to the total MIS of all attributes.

3. Calculate the weighted score (WS).

This weight is the multiplication between WF and MSS.

4. Calculate the weighted total (WT).

WT is calculated by summing the WS of all variables.

5. Calculate the customer satisfaction index (CSI).

The CSI is calculated by dividing WT by the nominal scale used and then by multiplying by 100 %.[20] The CSI criteria consist of five criteria, ranging from very satisfied to dissatisfied.

Table 4 Results of intervention group patient satisfaction analysis

Importance	MIS	Performance	MSS	WF	WS
Tangible					
T1	4.5	T1	3.9	3.8	15.1
T2	4.5	T2	4.1	3.9	15.7
T3	4.6	T3	4.2	3.9	16.5
T4	4.6	T4	4.4	3.9	17.1
T5	4.6	T5	4.2	3.9	16.5
Empathy					
E1	4.7	E1	4.3	4.0	17.6
E2	4.7	E2	4.4	4.0	17.8
E3	4.7	E3	4.3	4.0	17.0
E4	4.7	E4	4.3	4.0	17.2
E5	4.7	E5	4.4	4.0	17.6
Reliability					
R1	4.7	R1	4.4	4.0	17.5
R2	4.7	R2	4.4	4.0	17.7
R3	4.7	R3	4.4	4.0	17.9
R4	4.7	R4	4.5	4.0	18.0
R5	4.7	R5	4.4	4.0	17.8
Responsiveness					
RS1	4.7	RS1	4.4	4.0	17.6
RS2	4.7	RS2	4.4	4.0	17.5
RS3	4.8	RS3	4.5	4.1	18.6
RS4	4.7	RS4	4.6	4.0	18.5
RS5	4.7	RS5	4.5	4.0	18.1
Assurance					
A1	4.8	A1	4.5	4.1	18.4
A2	4.7	A2	4.4	4.0	18.0
A3	4.7	A3	4.5	4.0	18.1
A4	4.7	A4	4.6	4.0	18.4
A5	4.7	A5	4.5	4.0	18.0
Total	**117.3**	**Total**	**109.5**	**WT**	**438.1**
				CSI	**87.63 %**

As shown in Table 4, in the intervention group, the CSI reached 87.63% or the "Very Satisfied" criterion.

DISCUSSION

The problem after C-section is postpartum and postoperative treatment. The ERACS method is applied to overcome these problems effectively.[6] The ERAS protocol was initially applied to digestive surgery operations. The ERAS protocol has been shown to be effective in reducing postoperative complications, reducing the length of hospital stays, and increasing patient satisfaction. Then this protocol is applied in obstetric operations.[1,2,5] ERACS significantly reduces surgical complications, lowers postoperative pain levels, and opioid use, shortens stays, and potentially reduces hospital costs, without sacrificing remission rates.[8] This study showed that the ERACS method was effective in reducing pain levels 24 h postoperatively.

Given the importance of research on the level of satisfaction and on the attributes that need to be improved to meet patient satisfaction, researchers need to measure the quality of service carried out using IPA and to measure customer satisfaction using the CSI. The results will show how the level of patient satisfaction with hospital services can be used as an evaluation tool in decision making to improve service quality.[20]

Maternal satisfaction with maternity health services is an important indicator of quality health services.[16] Patient satisfaction can affect clinical outcomes, so it means a lot to health care providers.[17] In this study there was no significant difference in patient satisfaction in the control group and intervention group. However, the CSI in the intervention and control groups indicated that the patients very satisfied.

This study proved that the ERACS method is effective in reducing pain levels in post-C-section patients. This study also proved that ERACS patients were very satisfied based on the CSI results. Therefore, the ERACS method is feasible to be applied and developed to improve midwifery services in hospitals.

This study has several limitations that may affect the results of the study, including the following:

1. A patient was handled by three different doctors. This can affect patient satisfaction results, because the reason for staying in this hospital is mostly due to the availability of skilled doctors. Researchers suggest that future studies pay attention to this aspect.
2. This research was quantitative in nature , therefore qualitative research is still needed to obtain more in-depth research results on the quality of ERACS method services on patient satisfaction.

RECOMMENDATIONS

This study revealed that the ERACS method effectively reduced pain levels 24 hours after surgery. Furthermore, based on the CSI results, the investigation demonstrated that patients who underwent the ERACS method reported a high level of satisfaction. Midwifery services should consistently implement and refine ERACS methodologies in hospitals. Regular assessments of patient satisfaction are necessary to obtain an overview and valuable input regarding the hospital's services. Patient satisfaction plays a critical role in ensuring the future quality and sustainability of hospital services. Satisfied and loyal patients are more likely to advocate for the hospital's services within the community, ultimately increasing hospital visits.

ACKNOWLEDGMENTS

The researchers would like to thank everyone for their encouragement, suggestions, and assistance in carrying out this study. Additionally, the University of Muhammadiyah Yogyakarta Hospital Administration Study Program has given the researchers the opportunity to conduct this research.

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