



# Level of Maternal Satisfaction with Post-operative Pain Management After Caesarian Section Delivery at Debre Markos Comprehensive Specialized Hospital, Debre Markos, Ethiopia, 2022. A Cross Sectional Study

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**Keyword:** Cesarean section; Level of satisfaction; Postoperative pain.

**Abstract**

**Background:** Patient satisfaction is the individual's positive evaluation of distinct dimensions of health care. The rate of cesarean sections is on the rise and being performed more frequently in recent times. Assessment of maternal satisfaction with postoperative pain management is a vital tool for measuring the quality of care in the health center. There is a paucity of data regarding this topic, as it does not previously been studied yet in the study area.

**Objective:** The aim of this study was to assess the level of maternal satisfaction with post-operative pain management after c/s among mothers who deliver at Debre Markos Comprehensive Specialized Hospital, Northwest, Debre Markos Ethiopia, 2022

**Methods:** An institutional-based cross-sectional study was conducted among 337 mothers who had undergone c/s delivery in Debre Markos comprehensive specialized hospital, in 2022. All consecutive mothers who under gone cesarean delivery was included the study time and data was collected using a questionnaire distributed. The collected data were coded and analyzed. Orientation was given for data collectors and enters by using SPSS version 25.

**Result:** Among the total of 337 mothers, 244(72.4%) were satisfied with pain management the rest 93(27.6%) were dissatisfied. A total of 337 parturients who delivered with cesarean section were involved in this study with a 100% response rate. The majority of parturient 197(58.8%) & 112(33.2 %) had age 20-30 years and 31-40 respectively.

**Conclusion:** The level of maternal satisfaction with post-operative pain management among C/S was high (72.4%).



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## Introduction

Post-cesarean section pain is a common cause of acute pain in obstetrics, although pain relief and patient satisfaction are still inadequate in many cases [1]. A global element of health care management has become measuring maternal satisfaction states that a basic indicator of the quality of care is maternal satisfaction [2]. In order to fully understand the satisfaction of post-C/S pain management, it is imperative to identify factors influencing satisfaction with pain management among mothers [3]. Maternal satisfaction with postoperative pain management is the result of satisfaction with the care process and care outcome which include waiting time, provision of information, access, and adequacy of care [4,6]. Maternal satisfaction with pain management generally encompassed both psychosocial and technical aspects of care, strongly associated with effective pain management [7].

Patient satisfaction is one of the essential indicators of health management which can help improve the quality of service in healthcare settings. Thus, the current study was aimed at determining the extent of maternal satisfaction after c/s with pain management at Debere Markose Specialized Comprehensive Hospital. The findings of the study should help upper-level health management, in particular those overseeing health institutions in the country by providing a better understanding of hospitals.

Patient satisfaction with post-operative pain management still remains a common problem in health care [2]. However, despite persistent pain for most patients in clinical contexts, pain management has received astonishingly little attention from healthcare professionals, due to unrealistic patient satisfaction with pain management services [8].

Maternal" satisfaction with postoperative pain is crucial to measure the performance and success of healthcare institutions. To provide a standard of practice in pain management, and reduce the cost of dissatisfaction it is necessary to identify patient outcomes in terms of patients" self-reports of pain management satisfaction [13].

Prior studies in our county related to postoperative pain management were mainly focused on the prevalence of postoperative pain intensity. During my search, there was no evidence that shows the magnitude of maternal satisfaction with postoperative pain management in the study area. The available evidence in different set up and participants might affect the level of maternal satisfaction. This study might play an important role in this case as a baseline for the next research to be done in this area, to resolve the problems of maternal dissatisfaction.

## Materials and Methods

### Study area, design and Study period

An institutional-based cross-sectional study was conducted at DMSCH in East Gojjam zone, North West Ethiopia, Amhara, Debre Markos, Ethiopia, from February 1 to May 1, 2022.

### Population

#### Source and study population

All women who undergo c/s in Debre Markos comprehensive specialized hospital and Women who underwent C/S at DMCSH from February 1 to May 1, 2022.

### Inclusion criteria

All Women who were undergone C/S during the study period.

### Exclusion criteria

Unconscious patients, Patients transferred to the intensive care unit post-C/S, Patients who lost neonate by any cause, and ASA>II.

### Sample size and sampling procedure

The sample size was determined by single population proportion formula with the following assumptions were made:

level of confidence 95%;  $Z_{\alpha/2} = 1.96$ , a 5% margin of error ( $d=0.05$ ), and the proportion of the previous study done in Gondar Hospital was (72.2%) [25].

$$S_s = \frac{(z_{\alpha})^2 p(1-p)}{d^2} \text{ where } Z_{\alpha} \text{ is } p=0.723, 1-p = q=0.277, d = 0.05$$

$$n = \frac{1.96^2(0.723)(0.277)}{0.05^2} = 307$$

So, the calculated sample size (307) and, adding for 10% possible nonresponse rate, resulting in a total sample size of 338 patients and all consecutive mothers who had undergone cesarean delivery were included in the study time.

### Operational definitions

Acute Postoperative Pain: pain present in a surgical patients soon after surgical procedures [26].

Cesarean Delivery: the delivery of a fetus through surgical incisions made through the abdominal wall (laparotomy) and the uterine wall (hysterectomy) [27].

Patient Satisfaction: a subjective measure of whether a patient's expectations about a health encounter were met [11].

5-Likert Scale; A type of psychometric response scale in which respondents specify their level of satisfaction to a statement in five points used to measure satisfaction level [28].

Systemic Analgesia: opioids and/ or non-opioids analgesic drugs given for postoperative pain [29].

NRS; is a subjective measure in which individuals rate their pain on an eleven point numerical scale. The scale is composed of 0(no pain at all) to 10(worst imaginable pain) [29].

### Data collection instrument, procedures and quality control

The training was given to data collectors by the principal investigator to make them familiar with the data collection tool. Data was collected via patients" chart review, and interviewing Pain intensity was measured based on Verbally Responded Numerical Rating Scales (VNRS). During data collection, regularly supervised and follow-up will be undertaken by supervisors daily and with further cross-checks by the principal investigator for completeness and consistency of data. Data clean up and crosschecking of missing data were done by multiple imputation methods before analysis on SPSS.

### Data analysis procedure

The data collected was cleared and checked for its completeness, consistency, and accuracy before analysis then it was coded, entered, and processed using SPSS version 25. It was analyzed using descriptive statistics the results of the finding was described using narrating, tables, graphs, and charts The

patient’s satisfaction via a 5-point Likert scale was dichotomized into satisfied and dissatisfied groups based on a demarcation threshold formula

$$: \frac{\text{total highest score} - \text{total lowest score}}{2} + \text{total lowest scores}$$

[30].

**Result**

**Socio demographic characteristics of study participants**

A total of 337 parturients who delivered with cesarean section were involved in this study with a 100% response rate. The majority of parturient 197(58.8%) & 112(33.2 %) had age 20-30 years and 31-40 respectively. 189(56.1) were housewife’s and most of mothers 273(81%) had an income in the range b/n 400-5000 (in Table 1).

**Table 1:** Distribution of socio demographic characteristics of respondents DMCSH, Debre Markos, Ethiopia, 2022.

Variable	Category	Frequency	Percentage (%)
Age	20-30	197	58.5
	31 -40	112	33.2
	>40	28	8.3
Ethnicity	Amhara	332	98.5
	Oromo	4	1.2
	Others	1	0.3
Educational level	Illiterate	85	25.2
	Can read and write	87	25.8
	Primary	38	11.3
	Secondary	65	19.3
	College and above	62	18.4
Marital status	Single	5	1.5
	Married	331	98.2
	Widowed	1	0.3
Occupation	house wife	189	56.1
	Merchant	68	20.2
	Student	2	0.6
	civil servant	58	17.2
	Laborer	9	2.7
	Other (state.....)	11	3.3
Income	400-5000	273	81
	5001-10000	61	18.1
	>10000	3	0.9
Resident	Urban	218	64.7
	Rural	119	35.3

**Perioperative maternal related factors**

A Large proportion of parturients (52.5%) had one c/s scar & multipara mothers were 66.8% and most of them were transverse incisions 95.8%. About one hundred eighty-three (54.3%) of parturients were presented as an emergency and the rest one hundred fifty-four (45.7%) were scheduled as elective cesarean section (in Table 2).

**Table 2:** The percentage and frequency of maternal related factors DMCSH, Debre Markos, Ethiopia, 2022.

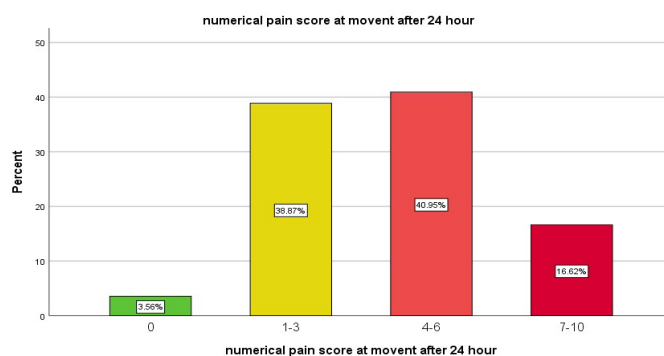
Variable	Category	Frequency	Percent (%)
No of c/s	1	177	52.5
	2	125	37.1
	3 and above	35	10.4
Type of c/s	Emergency	183	54.3
	Elective	154	45.7
Parity	Primipara	112	33.2
	Multipara	225	66.8
Still birth	Yes	86	25.5
	No	251	74.5
Twin pregnancy	Yes	44	13.1
	No	293	86.9
ASA status	2	335	99.4
	3 and above	2	0.6
Type of incision	Midline	14	4.2

**Numerical pain score at rest with in 24 Hr at rest**

The 24 hour post-operative numeric pain rating scale shows that(10.68%) of parturient had no pain, while, about (43.62%) of parturient reported to had mild pain the rest mothers about 35.01% & 10.68% had moderate & severe pain respectively.



**Figure 1:** Post-operative pain reports after cesarean section within 24 hr at rest of the study participants in DMCSH, Debre Markos, Ethiopia, 2022.



**Figure 2:** Post-operative pain reports after cesarean section within 24 Hr at movement of the study participants in DMCSH, Debre Markos, Ethiopia, 2022.

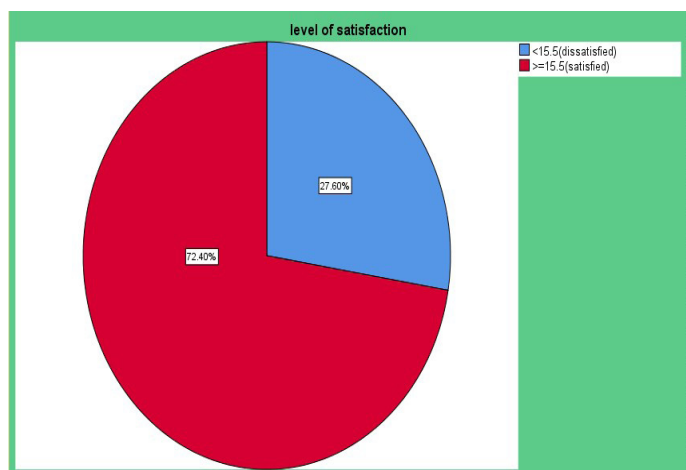
### Numerical pain score in 24 hr. at movement

The 24-hour post-operative numeric pain rating scale shows that (3.86%) of parturients had no pain, while, about (38.87%) of parturients reported to had mild pain the rest of mothers about 40.95% & 16.62% had moderate & severe pain respectively.

### Likert scale (assessment of level of satisfaction)

By using demarcation formula we got the cut point first to level the satisfaction

$$= \frac{\text{highest point} - \text{lowest}}{2} + \text{the lowest point} = \frac{25 - 6}{2} + 6 = 15.5$$
, we use this is the cut point mothers who scored <15.5 consider as dissatisfied while, who score  $\geq 15.5$  said to be satisfied. by using this 72.4% mothers were satisfied the rest 27.6% mothers were dissatisfied with postoperative pain management.



**Figure 3:** The percentage of level of maternal satisfaction with pain management DMCSH, Debre Markos, Ethiopia, 2022.

### Health care provide related factors

For most mothers, 66.5% were done by gynecologists while for others the rest 26.1% & 7.4% were done by ISO and MSc midwives respectively. Among 338 mothers 139 (41.2%) were anesthesia by students and 35.6% given by BSc anesthetists. A large proportion of parturients 320 (95%) had undergone cesarean section under spinal anesthesia, while only about 17 (5%) of parturients were with general anesthesia (in Table 3).

**Table 3:** The frequency Table the frequency and percentage of care provider relating factors DMCSH, Debre Markos, Ethiopia, 2022.

Variable	Category	Frequency	Percent
The profession who done C/S	Gynecologist	224	66.5
	ISO	88	26.1
	MSc midwife	25	7.4
Responsible anesthetist	Student	139	41.2
	Level 5	68	20.2
	BSc	120	35.6
	MSc	10	3
Anti-pain given	Yes	171	50.7
	No	166	49.3
Type of anesthesia	General	17	5
	Spinal	320	95

### Discussion

This is the first study that tries to assess the level of maternal satisfaction with post-operative pain management after c/s at the study area. This study was not done in Ethiopia since we try to discuss the research done on general population satisfaction. The findings of this study revealed that the majority of the participants 244 (72.4%) This was higher than the study conducted in Tigray Region Zonal Hospital where patient satisfaction was 43.6% and lower than [31] study conducted in Pakistan district hospital where patient satisfaction was 97% [32]. This may be due to the high patient load in Tigray Regional Hospital due to seasonal malaria in the area and may also be due to the time or study period variability of the two studies.

In contrast, the level of patient satisfaction in this study was higher than the study conducted in government hospitals of Ethiopia like Debre Birhan, and Jimma Zonal Hospital where patient satisfaction was 57.7%, and 57.1%, respectively [33]. This may be because DMCSH was established earlier than both Debre Birhan and Jimma Hospital so they might be our hospital have greater access to resources, including better-trained and experienced staff. High patient load also may decrease patient satisfaction in those hospitals. It might also be due to the low motivation of health professionals in the current study as compared with the previous studies. This low motivation may be a result of payment and other administrative issues.

The level of patient satisfaction in this study was also lower than the regional health bureau target which was 85% and above [34]. This may be because the hospital only gives service to a high population number. This study showed that maternal satisfaction was about 72.4% This was higher than the study conducted in Gondar university hospital and Addis Ababa (35). This might be because Gondar University Hospital is an academic hospital in which the presence of a high number of health science students in comparison with DMSCH hospital might lead to overcrowding.

### Conclusion and recommendation

The overall level of maternal satisfaction with postoperative pain management was considerably low as compared with other studies. Hence, it is vital to implement a time-interval pain assessment method during the first 24 hours of the postoperative period and treat accordingly based on the WHO pain ladder. Moreover, we suggested that all mothers who underwent c/s should receive peripheral nerve blocks as part of multimodal analgesia to decrease the incidence and severity of post-op pain in order to increase the level of maternal satisfaction.

### Abbreviations and Acronyms

ASA: American society of anesthesiologist; CD: Cesarean Delivery; CDC: Centers for Disease Control and Prevention; DMCSH: Debre Marko's Comprehensive Specialized Hospital; NRS: Numerical rating scale.

### Declarations

### Ethics approval and consent to participate

Ethical clearance had been obtained from Debre Marko's University, collage of health science and Medicine ethical clearance review board and informed written consent was obtained from each respondent after illuminating the purpose and procedure of the study.

### Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

### Conflict of interest

The authors declare that they have no competing interests in this section.

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This research did not receive any specific grant from funding agencies.

### Authors' contribution

All Authors conceptualized, designed the study, collected, analyzed, and interpreted the data, and also drafted the manuscript. Data analysis, drafting of the manuscript, and advising the whole research paper and also involved in the interpretation of the data and contributed to manuscript preparation. All authors read and approved the final manuscript.

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