

Assessing Maternal Satisfaction with Cesarean Delivery at Zagazig University Hospital in Egypt

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ABSTRACT

Background: Cesarean Delivery is the most common method of delivery in Egypt. It is applied in more than 60% of all deliveries. Women for whom it is indicated must accept the procedure and be satisfied with it. Satisfied mothers are found to be more positive about their condition and more likely to actively participate in their treatment regimens and hence, better maternal and neonatal outcomes. **Objective:** The study aimed to improve the quality of perinatal care by assessing the level of satisfaction after cesarean delivery and determining the reasons for maternal satisfaction and dissatisfaction. **Methods:** This was a cross-sectional study conducted from June to December 2021 at Zagazig University Hospital, Egypt. A total of 221 women who delivered by Cesarean were enrolled and interviewed using a simple structured researcher-administered questionnaire for data collection.

Results: The mean age was 27.83 ± 5.24 years, and the median parity was 1. The overall satisfaction with hospital delivery services was high (93.7%). Women's satisfaction was associated with birth outcomes, nurses' concern and attitude, time spent with the doctor during the examination, care providers' measures taken to assure privacy during examination and availability of medicines. Facility cleanliness gained the least satisfaction.

Conclusion: The study found that most women were satisfied with the care received during Cesarean delivery. In-depth studies are needed to assess satisfaction with many aspects of the Cesarean birth experience.

Keywords: Cesarean delivery, Maternal satisfaction, Egypt.

INTRODUCTION

The two most common reasons for women's admittance to healthcare facilities are pregnancy and childbirth. High-quality birth services ensure that both the mother and the baby have healthy lives ⁽¹⁾.

Cesarean section is one of the most common major surgical procedures performed worldwide, with an estimated 18.5 million instances performed each year, and it is a crucial component of emergency obstetric care and safe motherhood. Women who are recommended for it must accept the procedure as advantageous. Maternal happiness with cesarean birth is critical to its acceptance ^(2,3).

The World Health Organization (WHO) advocates assessing women's satisfaction in order to improve the quality of health care, as well as promoting competent attendance at every birth in order to reduce maternal mortality ^(4,5). According to the findings of the literature review, maternal satisfaction should be viewed as a predictor of future use of healthcare services and desire to suggest these services to others, as well as a factor influencing treatment compliance and success ⁽⁶⁾. Patients can impact healthcare quality mostly through "exit" and "voice." Patients who are dissatisfied with their physicians can leave, or they can communicate their concerns in an attempt to change their care. Surveys are important since they are the most widely used method of eliciting patients' "voices" ⁽⁷⁾.

Inquiring about women's perspectives and experiences with perinatal care is an effective approach of measuring the quality of maternity care received, and can provide crucial indicators to healthcare providers at both the specialist and organizational levels. As maternity services evolve and the women they serve

change, there is an ongoing need to analyze and document the perspectives of women who have recently received care.

Despite numerous research, there is a dearth of data on women's satisfaction with delivery services in various Egyptian hospitals. Hence, this study was conducted to show the Egyptian case at Zagazig University Hospital in Egypt.

METHODS

Study design, setting, and period:

This facility-based cross-sectional study was carried out at Zagazig University Hospital's, Department of Obstetrics and Gynecology from June to December 2021.

Source and Study Population:

The study population included 221 women between the ages of 18 and 38 who just had a cesarean delivery 1 to 7 days prior and had an unremarkable medical and obstetric history.

Exclusion criteria: Post-delivery laparotomy, significant complications such as hysterectomy and ICU stay, and cases of major newborn abnormalities.

Sample Size Calculation and Sampling Method:

This study's sample size was established assuming the target women attending Zagazig University Hospital for CS who were 2100 and the percentage of satisfaction was 80%. At 95% CI and 80% power, the estimated sample will be 221 women. Open epi

Data Collection:

The data were acquired using a simple structured researcher-administered questionnaire that was first written in English, then translated into Arabic (the

participants' native language), and then returned to English. The Arabic version of the questionnaire was used to collect data.

The questionnaire had two parts:

The first part was conducted during the first 24 hours post-operative and consisted of study participants' sociodemographic characteristics and obstetric history. Sociodemographic characteristics included age, phone number and level of education. While, obstetric history included parity and type of current cesarean delivery. The respondents' level of education was measured by asking them to state their greatest degree of education acquired.

The second part was conducted one-week post-operative and assessed satisfaction with perinatal care using 15 questions that were adopted from **Srivastava et al.** ⁽⁸⁾. The study's purpose was communicated to the participants in straightforward terms. They were assured of their confidentiality and that their response would have no detrimental impact on their care.

Data analysis

The data were loaded into the computer and analyzed with the IBM SPSS software program version 20.0 (IBM Corporation, Armonk, New York). Numbers and percentages were used to describe qualitative data. Range (minimum and maximum), mean, standard deviation, median, and interquartile range were used to characterize quantitative data (IQR).

According to the findings, maternal satisfaction with cesarean birth was determined by asking mothers 14 satisfaction-related questions. Each question assesses a five-point Likert scale (1 = very dissatisfied, 2 = unsatisfied, 3 = neutral, 4 = satisfied, and 5 = very satisfied) and binary questions (yes = 2 and no = 1), yielding a maximum of 46 and a minimum of 14. Then, responses to 14 measuring items were added and transformed to provide an overall degree of satisfaction score ranging from 1 to 100%. As a result, women who scored 75% or more on the questionnaire were considered content, while those who scored less than 75% were regarded as unsatisfied. Question No 15 was not calculated within the sum of the overall level of satisfaction as it was used to determine which aspect of care is most preferred by mothers.

Ethics approval and consent to participate:

We were very keen on making sure that each participant understands that it is not obligatory to answer this questionnaire. After obtaining verbal consent from each participant, the questionnaire items were conveyed to them in straightforward terms. They were assured of their confidentiality and that their response would have no detrimental impact on their care. Their participation in the survey and signature on the form constituted written consent. The study was authorized by Zagazig University's Hospital Ethics Committee. This experiment was done in compliance with the World

Medical Association's Code of Ethics (Declaration of Helsinki) for human studies.

RESULTS

Socio-demographic and obstetric characteristics of respondents

Socio-demographic characteristics are shown in table (1). For 24% of women, this was the first delivery, and 76% had 2-5 deliveries. 91 mothers (41.2%) had an elective cesarean delivery and 130 (58.8%) had an emergency cesarean delivery. The mean number of previous cesarean section was 1.51 ± 1.23 SD with a range of 0.0 - 5.0 as shown in table (2).

Table (1): Distribution of the studied cases according to socio-demographic data

Personal Information	No.	%
Age (years)		
< 27	84	38.0
≥ 27	137	62.0
Min. – Max.	18.0 - 38.0	
Mean ± SD.	27.83 ± 5.24	
Median (IQR)	27.0 (24.0 – 32.0)	
Educational Level		
Non educated	29	13.1
Primary education	9	4.1
Middle education	23	10.4
High school	118	53.4
Bachelor's degree	42	19.0
Master's degree	0	0.0
Residence		
City	67	30.3
Rural	154	69.7

IQR: Inter quartile range, SD: Standard deviation

Table (2): Distribution of the studied cases according to obstetric history

Obstetric History	No.	%
Type of Cesarean delivery?		
Elective	91	41.2
Emergency	130	58.8
Parity		
Primipara	53	24.0
Multi para	168	76
Number of previous Cesarean section		
Min. – Max.	0.0 - 5.0	
Mean ± SD.	1.51 ± 1.23	
Median (IQR)	1.0 (1.0 - 2.0)	

Dimensions of maternal satisfaction

The various items used to assess maternal satisfaction are organized into three scales: the scale of structural features, the scale of communication and interpersonal aspects of care, and the scale of health care results. The average satisfaction rating for each item is shown in tables (3, 4 and 5).

Table (3): Distribution of the studied cases according to satisfaction with the structural aspect of care

A. Structural aspect of care	No.	%
How would you assess the cleanliness of wards and hospital?		
Very Dirty	0	0.0
Dirty	3	1.4
Moderate	23	10.4
Clean	122	55.2
Very Clean	73	33.0
How would you rate the condition of the toilet?		
Very Dirty	14	6.3
Dirty	36	16.3
Moderate	33	14.9
Clean	121	54.8
Very Clean	17	7.7
How long did you wait in the exam room before the physician appeared?		
Very Long	3	1.4
Long	8	3.6
Average	20	9.0
Short	107	48.4
Very Short	83	37.6
Do all medicines needed available?		
Yes	208	94.1
No	13	5.9

Table (4): Distribution of the studied cases according to satisfaction with the interpersonal dimension of care

B. Interpersonal dimension of care	No.	%
How would you characterize the concern that the nurse showed for your problem?		
Very Bad	0	0.0
Bad	2	0.9
Average	18	8.1
Good	98	44.3
Very Good	103	46.6
Did the nurse respond to your requests within a reasonable period?		
Yes	195	88.2
No	26	11.8
Did you feel that your doctor spent an adequate amount of time with you?		
Yes	208	94.1
No	13	5.9
Please rate the clarity of the doctor's explanation of your condition and treatment options:		
Very Bad	2	0.9
Bad	3	1.4
Average	17	7.7
Good	99	44.8
Very Good	100	45.2
Were your questions answered to your satisfaction?		
Yes	206	93.2
No	15	6.8
How would you rate concern for your privacy?		
Very Bad	2	0.9
Bad	2	0.9
Average	22	10.0
Good	100	45.2
Very Good	95	43.0
Would you recommend this facility and its staff to your family and friends?		
Yes	203	91.9
No	18	8.1

Table (5): Distribution of the studied cases according to satisfaction with outcome dimension of care

C. Outcome Dimension of care	No.	%
Are you satisfied with your health condition after delivery?		
Yes	213	96.4
No	8	3.6
Are you satisfied with your baby's health condition?		
Yes	213	96.4
No	8	3.6
Are you satisfied with the quality of care received?		
Yes	215	97.3
No	6	2.7
Which aspect of care, you are most satisfied with?		
Structural aspect of care	33	14.9
Interpersonal aspect of care	126	57.0
Outcome Dimension of care	62	28.1

The structural element of care received the lowest satisfaction ratings. According to this study, 88.2% of participants assessed the facility as clean or very clean, whereas just 62.5% described the toilets as clean or very clean. 86% of participants were satisfied with the waiting time to see physicians, describing it as short or very short and 94.1% were satisfied with the availability of medicine. Regardless of their complaints or criticisms of specific components, the study indicated that the vast majority of women were satisfied with the treatment they received.

The entire degree of pleasure with the service got was astounding (93.7%) as shown in table (6). Despite the high level of satisfaction indicated in this survey, a few women expressed concerns regarding the structural dimension of care, particularly restroom cleanliness.

Many participants commented on this item. Participant no. (3) said: *"I wish they pay more concern to the cleanliness of the wards and toilets"* while another participant no. (37) said: *"cleaners clean the toilets periodically, but the lack of attention of some patients and their companions is the reason for the toilets being dirty"*. Another participant no. (131) said: *"the number of cleaners is small compared to the number of visitors to the hospital, and therefore the toilets get dirty quickly"*

Table (6): Distribution of the studied cases according to the overall level of satisfaction (n = 221)

Overall Level of Satisfaction	No.	%
Unsatisfied (<75)	14	6.3
Satisfied (≥75)	207	93.7
Total Score	(14 – 46)	
Min. – Max.	25.0 – 46.00	
Mean ± SD.	40.27 ± 3.48	
Median (IQR)	41.0 (39.0 – 42.0)	
% Score		
Min. – Max.	54.35 – 100.0	
Mean ± SD.	87.55 ± 7.56	
Median (IQR)	89.13(84.78 – 91.30)	

There was no relationship between participants' age or location and mother satisfaction. While there was a strong relationship between respondents' educational degree and happiness with Cesarean delivery. When compared to educated mothers, less educated mothers were more satisfied (Table 7).

Our study found that multiparous women reported less satisfaction. This may be because the number of multiparous women in the sample size was much greater than primiparous women and thus they were more represented (Table 8).

Table (7): Relation between satisfaction and socio-demographic data of participants (n = 221)

Personal information	Satisfaction				χ ²	p
	Unsatisfied (<75) (n =14)		Satisfied (>75) (n =207)			
	No.	%	No.	%		
Age (years)						
< 27	7	50.0	77	37.2	0.912	.340
≥ 27	7	50.0	130	62.8		
Educational Level					12.098*	MC _p = 0.009*
Non educated	1	7.1	28	13.5		
Primary education	0	0.0	9	4.3		
Middle education	2	14.3	21	10.1		
High school	3	21.4	115	55.6		
Bachelor's degree	8	57.1	34	16.4		
Residence					2.741	FE _p = 0.131
City	7	50.0	60	29.0		
Rural	7	50.0	147	71.0		

χ²: Chi-square test MC: Monte Carlo FE: Fisher Exact, *: Statistically significant at p ≤ 0.05

Table (8): Relation between satisfaction and parity (n = 221)

Parity	Satisfaction				χ ²	MC _p
	Unsatisfied (<75) (n=14)		Satisfied (>75) (n=207)			
	No.	%	No.	%		
Primipar	5	35.7	48	23.2	9.647*	0.007*
Multi para	9	64.2	159	76.9		

χ²: Chi-square test MC: Monte Carlo

*: Statistically significant at p ≤ 0.05

DISCUSSION

The purpose of this study was to investigate the level of maternal satisfaction following Cesarean birth, as well as the causes for satisfaction and dissatisfaction at Zagazig University Hospital. Regardless of their complaints or criticisms of specific components, the study indicated that the vast majority of women were satisfied with the treatment they received. The overall level of satisfaction with the care they got was astonishingly high (93.7%), with delivery outcomes being the primary cause for their happiness. This high level of satisfaction is in line with another study that used the same measurement tool, conducted in Nigeria by **Ajayi** ⁽⁹⁾ who reported an overall satisfaction level of 97.1%. However, our finding is higher than the results of studies conducted in Benin University Hospital in Nigeria (80%) ⁽³⁾, Turkey (81.3%) ⁽¹⁰⁾, Pakistan (61%) ⁽¹¹⁾, Debre Markos Town hospitals (81.7%) ⁽¹²⁾, Wolaita Zone (82.9%) ⁽¹³⁾, Jimma (77%) ⁽¹⁴⁾, Assela (80.7%) ⁽¹⁵⁾ and Amhara region referral hospitals (61.9%) ⁽¹⁶⁾ in Ethiopia. Possible explanations for the observed difference include variations in study design, with lesser satisfaction observed in prior studies because they were community-based investigations, as opposed to the current study (which was facility-based). The discrepancy could be attributable to the fact that this study was conducted in a university teaching hospital with a comparatively appropriate quantity of health professionals and better diagnostic facilities. Furthermore, study time could have played a role ⁽¹⁴⁾. Another reason for the disparity could be the use of different cut-off points for determining level of satisfaction. Also, study population with cultural and religious differences of participants might also attribute.

In our study, high overall satisfaction could not be explained by limited knowledge of the quality of services provided, making participants score a high satisfaction rate even if poor standards of care have been provided as proposed by **Crow et al.** ⁽¹⁷⁾. That is because most of the patients seeking care in our hospital on the background that it would offer the best service possible. A favorable birth outcome is the primary cause for the high degree of maternal satisfaction (96.4 percent).

Because of the reciprocal nature of the relationship between health outcomes and satisfaction with care, it may be difficult to separate feelings of pleasure or discontent with the process of care from those related to the health outcome of care ⁽¹⁸⁾.

When asked which aspects of care participants thought were most favorable, the responses focused mostly on communication and the professionalism of healthcare workers. This finding is congruent with the findings of a study on perinatal maternal satisfaction conducted in Serbian public hospitals ⁽¹⁹⁾. A reason for these findings could be because women in labor and postpartum are particularly exposed to environmental effects, particularly caregiver attitudes and behavior ⁽⁶⁾, thus a positive attitude has a significant impact on their satisfaction.

Our survey validated the multidimensional nature of patient satisfaction assessment and assigned three significant components of maternal satisfaction, which were as follows: structural aspect or environmental factors of the hospital, interpersonal aspect, and health care outcome dimension. The structural aspect of care showed the lowest overall satisfaction scores. this study found that 88.2% of participants described the facility as clean or very clean. This result is consistent with 88.7% and 82% respectively ^(12,16). Better than 74.9% ⁽¹⁵⁾, 54.7%, 78.2%, 72.1% and 64.1% respectively ⁽¹⁹⁻²²⁾. Lower than 94.3% ⁽⁹⁾ and 92.3% ⁽¹³⁾.

62.5% of participants described the toilets as clean or very clean. This result is low compared to other determinants that have been asked about to measure satisfaction. But it is nearly in line with 63.6% ⁽¹³⁾, 67% ⁽¹⁶⁾, 58.5% ⁽²³⁾ and 55.3% ⁽¹⁵⁾. Other studies reported being extremely pleased with cleanliness and access to toilets as 91.7% ⁽⁹⁾ and 83.3% ⁽¹²⁾. Our result is better than another study conducted in South Africa showed 44.3% ⁽²¹⁾ and much better than a study done in Adama town, Ethiopia 27.5% ⁽²⁴⁾.

86% of participants were satisfied with the waiting time to see physicians, describing it as short or very short. This result is inconsistent with 87.9% ⁽¹³⁾, 88.2% ⁽²²⁾, 90% ⁽¹⁶⁾ and 91.4% ⁽²⁴⁾.

94.1% were satisfied with the availability of medicine, which was in line with a study conducted in central Ethiopia (95.3%) ⁽⁴⁾ and another study done in Nigeria (92.9%) ⁽⁹⁾. But, it is higher than other studies conducted in Ethiopia (87.3% and 60% respectively) ^(13, 16) and a study conducted in Nepal (72.46%) ⁽²⁰⁾.

The interpersonal dimension of care included nurses' concern and attitude, where 90.9% of participants described nurses' concern as good or very good, while 88.2% described that nurses responded to their requests in a reasonable period. Our results are consistent with the results of other studies which were 94.3%, 91.3% and 88.5%, respectively ^(9, 20, 22).

While 94.1% of participants were pleased with the amount of time they spent with the doctor during the exam. 90% of participants rated the doctor's explanation of their condition and treatment options, as

good or very good. These results are in line with other studies (9, 12, 20, 22).

88.2% of participants were satisfied with measures taken to assure privacy during examination describing them as good or very good. This result is in line with other study (13).

In terms of care results, 97.3% of participants were satisfied with the quality of treatment they received. **Ajayi** (9) reported nearly the same outcome (97.1%). 96.4 % of participants were satisfied with their favorable birth outcomes, which included a healthy baby and good personal health. This high level of satisfaction is consistent with other studies that found 95.9% and 94.2% satisfaction, respectively (9, 20).

This study showed that 91.9% of participants recommended the facility to their family or friends. Our result is consistent with a study conducted in Nepal (92.8%) (20). Two studies done in Ethiopia showed lower results (83.7% and 69.1%) (15, 16). The disparity in the above findings could be attributed to a genuine difference in the quality of care offered, mothers' expectations, or the sort of health facilities (16).

In their systematic review, **Crow et al.** (17) indicated that older respondents were more satisfied than younger respondents and according to **Srivastava et al.** (8), there was a positive relationship between age and satisfaction. Unlike those studies, the current study did not find any association between participants' age and maternal satisfaction. But our result is similar to other studies (25-28), where no difference was found between age and satisfaction.

There was a strong relationship between respondents' educational level and happiness with Cesarean delivery. When compared to educated mothers, less educated mothers were more satisfied. This finding is consistent with that of Ethiopia (29) as well as research from Pakistan (11), western Nepal (30) and a systematic review carried out by **Srivastava et al.** (8) indicating that educational level negatively affects satisfaction.

In the systematic review performed by **Srivastava et al.** (8), it was reported that multiparous women had high maternal satisfaction during birth. Unlike other studies, the current study found that multiparous women reported less satisfaction. This may be because the number of multiparous women in the sample size was much greater than primiparous women and thus they were more represented. Finally, it should be mentioned that the study's findings mostly represent the situation at Zagazig University Hospital. As a result, the findings should be regarded cautiously.

Limitation

Despite the study's intriguing findings, several issues must be addressed. First, the study sample was drawn from a single institution, raising concerns about the generalizability of the findings to other public and private hospitals. Furthermore, interview bias should be acknowledged as a constraint. In a one-on-one environment, respondents may give replies that they

believe are socially acceptable rather than expressing their genuine feelings. They may also be influenced by the interviewer's characteristics and attitudes, especially in face-to-face interactions.

CONCLUSION

Regardless of their complaints or criticisms of certain parts, the study indicated that the majority of women were satisfied with the treatment they received. Good health outcomes of both mothers and their babies, followed by health workers' attitude, good counseling and concern for patients were the main reasons in recognition of the high degree of mother satisfaction. The following urgent improvements are suggested for specific areas of dissatisfaction: Paying attention to the maintenance of toilets and increasing the number of cleaners in the hospital. To solve the generalizability issue, future studies should collect more data from a more diverse population. Future research could compare public and private sector hospitals. Our final recommendation is that the findings of this study be communicated with personnel and that they be commended on their efforts. Positive comments should motivate employees to address weaknesses.

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