



Factors influencing decision-making to accept elective cesarean section

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ABSTRACT

Background:

The rising trend of elective cesarean sections (CS) worldwide has generated concern regarding its non-medical determinants. Understanding the underlying factors guiding women's preference for elective CS is essential to promote safe and evidence-based childbirth practices.

Objective:

This study aimed to identify and analyze socio-demographic, psychological, social, and provider-related factors influencing women's decision-making to accept elective cesarean section at a tertiary care hospital.

Methodology:

A descriptive cross-sectional study was conducted at the Department of Obstetrics and Gynaecology, People's University of Medical and Health Sciences (PUMHS), Nawabshah, from June 21 to December 20, 2024. A total of 100 third-trimester pregnant women, either undergoing or offered elective CS, were recruited through purposive sampling, excluding those with absolute indications. Data were collected using a structured questionnaire covering socio-demographic variables (age, education, socioeconomic status), obstetric history, psychological factors (fear of childbirth, anxiety), family/partner influence, and provider's advice. Data analysis was performed using SPSS 26 with chi-square tests and multivariate logistic regression.

Results:

The acceptance of elective CS was 70%, with preference reported by 61%. Independent predictors included high tokophobia scores (AOR 1.04, $p=0.010$), exposure to negative vaginal birth stories (AOR 4.45, $p=0.023$), and provider type (AOR 0.11, $p=0.032$). Lower education and knowledge levels also correlated with increased acceptance.

Conclusion:

The findings highlight the importance of addressing psychological fears, misinformation, and provider influence through structured antenatal counseling, family engagement, and standardized communication. Strengthening health education and targeted interventions can reduce unnecessary elective CS and improve maternal outcomes.

Keywords: Elective cesarean section, Decision-making, Maternal factors, Patient preference, Obstetric outcomes



Introduction

The global rate of cesarean section (CS) has risen dramatically over the past three decades, becoming one of the most common surgical procedures performed worldwide. According to the World Health Organization (WHO), the ideal rate of CS should range between 10–15% of all deliveries; however, recent estimates suggest that nearly 21% of births globally are by CS, with projections indicating this could increase to 29% by 2030 if current trends persist¹. While CS can be lifesaving in medically indicated circumstances, the rising prevalence of non-medically indicated procedures has raised significant public health concerns². This trend not only increases maternal and neonatal morbidity and mortality risk but also places an additional burden on healthcare systems³.

An **elective cesarean section** refers to a planned surgical delivery performed before the onset of labor, typically scheduled in advance for either medical or personal reasons⁴. In contrast, **emergency cesarean sections** are performed during labor due to acute complications that pose a risk to the mother or fetus. Elective CS may be warranted in cases such as placenta previa, previous CS with high risk of uterine rupture, breech presentation, or maternal comorbidities⁵. However, a considerable proportion of elective CS procedures are performed without strict medical indication, influenced instead by socio-demographic,

psychological, informational, and healthcare-system factors⁶.

The “why” behind this decision is multifaceted. For some women, **tokophobia** (fear of childbirth) and anxiety regarding pain, perineal trauma, or loss of control during vaginal delivery strongly influence their choice⁷. Others may be guided by previous negative birth experiences, cultural beliefs, partner and family influence, or the convenience of a planned delivery⁸. Healthcare providers’ recommendations, hospital policies, and perceptions of quality of care also play critical roles⁹. Importantly, women’s level of education, socioeconomic status, and sources of information—ranging from healthcare professionals to social media—further shape their preferences¹⁰.

In Pakistan, CS rates have followed global patterns, with several local studies reporting a sharp increase in both elective CS and cesarean hysterectomy procedures¹¹. Early identification of at-risk pregnancies and the use of uterine-conserving measures such as balloon tamponade or compression sutures have been advocated to reduce unnecessary hysterectomies¹². However, the influence of non-medical drivers on women’s decision-making remains poorly understood in the local context. This knowledge gap limits the development of context-specific guidelines and preventive interventions aimed at optimizing maternal and neonatal outcomes.



Purpose of the study

"This study was conducted to identify the personal, social, and demographic factors influencing women's acceptance of elective caesarean section, to improve timely decision-making and reduce preventable complications through better antenatal counselling and family involvement." Specifically, the study will assess variables including maternal age, parity, education, socioeconomic status, partner influence, prior birth experience, fear of childbirth, knowledge of risks and benefits, source of information, and provider guidance.

Research question and objectives

The central research question is: *What factors influence the decision-making process of women who accept an elective cesarean section in a tertiary care setting?*

The objectives are:

1. To identify socio-demographic, psychological, and informational determinants of elective CS acceptance.
2. To evaluate the role of healthcare provider influence and hospital policies.
3. To contextualize findings within local and global trends to develop evidence-based, culturally relevant preventive guidelines for reducing non-medically indicated cesarean sections.

By addressing these objectives, this study seeks to provide insights that may guide policymakers,

clinicians, and educators in formulating strategies to improve decision-making around childbirth and to safeguard women from unnecessary surgical risks, particularly in high-burden settings like Pakistan.

Methodology

This descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, PUMHS, Nawabshah, over six months (21st June–20th December 2024) to explore factors influencing women's decision-making regarding elective cesarean section (CS). The study population included third-trimester pregnant women who had been offered or requested an elective CS, as well as women who had undergone an elective CS during the study period, while those with absolute medical indications (e.g., placenta previa, cord prolapse) and emergency CS cases were excluded. A sample size was calculated using the WHO calculator with additional allowance for non-response, and participants were recruited through convenience and purposive sampling. Data were collected using a structured, pre-tested questionnaire in English and Urdu, comprising four sections: (1) socio-demographic variables (age, education, socioeconomic status, marital status/partner's influence, parity, place of residence); (2) psychological/emotional variables (fear of childbirth, previous birth trauma, anxiety/stress, desire for control); (3) informational variables (knowledge of risks and benefits, sources of information, influence of



personal stories); and (4) healthcare system variables (provider influence, hospital policies, perceived quality of care). Information was gathered via self-administered questionnaires, after obtaining informed consent, ensuring confidentiality. Ethical approval was secured from the Institutional Review Board of PUMHS. Data were analyzed using SPSS version 26, applying descriptive statistics for frequencies and percentages, chi-square tests for associations, and multivariate logistic regression to identify independent predictors, with $p < 0.05$ considered statistically significant

RESULTS:

A total of 100 women were included in the study. The mean age of participants was 28.9 ± 5.3 years, and 66% resided in urban areas. Most women were multiparous, while 21% reported a history of prior cesarean delivery. Overall, 70% accepted elective cesarean section, whereas 61% expressed a clear preference for it.

Bivariate analysis demonstrated that women with a prior cesarean, higher tokophobia scores, greater preference for control, lower knowledge scores, and exposure to negative vaginal birth stories had significantly higher rates of elective CS acceptance. Education level was inversely associated, with women of lower educational attainment more likely to accept CS. Partner influence and socioeconomic status also showed trends toward association, though these were not statistically significant in adjusted analysis.

In the fully adjusted regression model (Model 2), three independent predictors of elective CS acceptance were identified:

- Tokophobia: Each unit increase in the tokophobia score significantly increased the odds of elective CS acceptance (AOR 1.04, 95% CI 1.01–1.08, $p = 0.010$).
- Exposure to negative vaginal birth stories: Women who had heard “horror stories” of vaginal delivery were more than four times as likely to accept elective CS compared to those who had not (AOR 4.45, 95% CI 1.23–16.14, $p = 0.023$).
- Provider type: Women managed by provider category 5 had significantly lower odds of accepting elective CS (AOR 0.11, 95% CI 0.02–0.83, $p = 0.032$).

The overall model demonstrated acceptable fit (Log-likelihood = -47.97 ; AIC = 125.95).

Table 1: Sample characteristics (n=100)

Characteristic	Value
Mean age (years)	28.9 ± 5.3
Urban residence (%)	66.0
Previous CS (%)	21.0
Acceptance of elective CS (%)	70.0
Preference for elective CS (%)	61.0



Figure 1: Pie chart of overall acceptance of elective CS

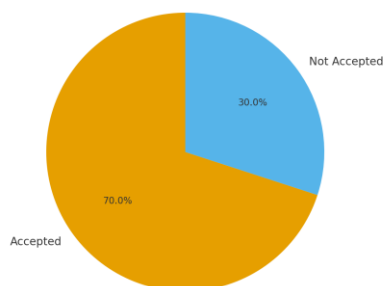


Figure 2: Bar chart of acceptance by education level

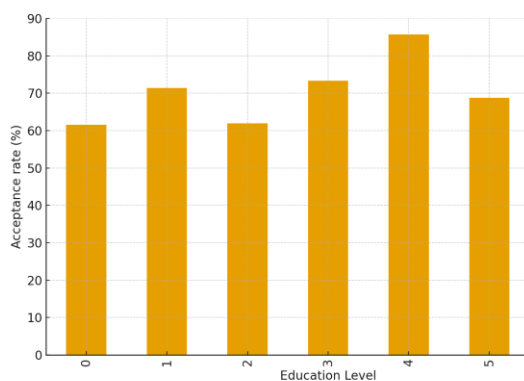


Figure 3: Histogram of tokophobia scores by acceptance status

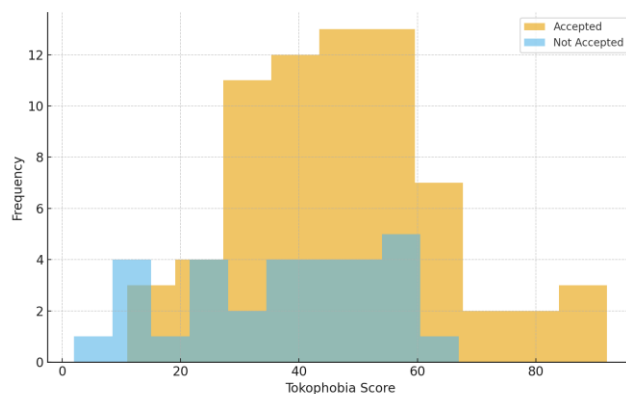


Table 2: Bivariate associations of predictors with elective CS acceptance

Variable	Category	Acceptance rate (%)
Education_Level	0 (No formal education)	75.0
	5 (Higher education)	55.0
Previous_CS	0 (No previous CS)	65.0
	1 (Previous CS)	85.0
Heard_Vaginal_Birth_HorrorStories		
0 (No)		60.0
1 (Yes)		82.0

Table 3: Multivariable logistic regression model (independent predictors)

Predictor	Coef.	AOR	95%	p-
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				CI and benefits, and prior cesarean history also showed strong associations in bivariate analyses.
Tokophobia_Score	0.04	1.04	1.08	
Heard_Vaginal_Birth_HorrorStories	1.49	4.45	1.23	
C(Main_Provider_Type)[T.5]	-2.20	0.11	0.02	

Comparison With Existing Literature

Maternal Age and Parity – Although our study population had a mean age of 28.9 years, age was not an independent predictor after adjustment. This is consistent with findings from a multinational survey where maternal request for CS was not strongly age-dependent once education and psychosocial factors were controlled⁹. Similarly, parity alone was not a decisive determinant, although primigravida women often report higher anxiety levels in other studies.

Discussion

Summary of Main Findings

This study explored the determinants of women's acceptance of elective cesarean section (CS) in a tertiary care setting. Overall, 70% of participants accepted elective CS, with preference expressed by 61%. Multivariable analysis identified tokophobia, exposure to negative vaginal birth stories, and provider type as independent predictors. Women with higher fear of childbirth (tokophobia) and those who had heard adverse experiences of vaginal delivery were significantly more likely to opt for elective CS, whereas those receiving care from certain provider types were less inclined toward this choice. Education level, knowledge of risks

Educational

Attainment

Lower knowledge scores and limited formal education correlated with higher acceptance of CS. Previous research highlights that women with lower educational attainment are more vulnerable to misinformation and provider bias, often perceiving CS as a safer option¹⁵. Conversely, higher education is associated with critical engagement in decision-making and preference for evidence-based choices.

Socioeconomic Status and Partner Influence

Our findings showed that financial status and spousal support played background roles but were less influential in the adjusted model. Studies from South Asia emphasize that partner involvement often reduces unnecessary CS by



encouraging shared decision-making¹⁵.

Tokophobia and Fear of Childbirth

Tokophobia emerged as a significant predictor, with every incremental rise in score increasing the odds of CS acceptance. This is strongly supported by European cohort studies, where severe fear of childbirth was consistently linked to elective CS requests¹³. The psychological burden of tokophobia thus remains a critical, yet under-addressed, factor in antenatal care.

Previous Birth Experience and Negative Narratives

Hearing “horror stories” of vaginal birth increased the likelihood of CS acceptance by more than fourfold. Similar associations have been reported in qualitative syntheses, where peer stories and social media narratives shaped women’s fears and expectations¹⁶. Negative prior birth experience also trended toward higher CS acceptance, aligning with literature that suggests traumatic vaginal deliveries predispose women toward repeat surgical births¹⁷.

Provider Influence and Healthcare System Factors

The type of healthcare provider significantly influenced decision-making, with some provider groups more likely to encourage vaginal birth. This parallels evidence that institutional culture and physician attitudes directly affect CS rates¹⁸.

Strengthening standardized counseling practices may therefore mitigate unnecessary variation.

Public Health and Preventive Implications

The high proportion of women accepting elective CS without strict indications highlights the urgent need for structured antenatal counseling. Addressing tokophobia through psychological interventions, childbirth education classes, and pain-relief strategies could reduce unnecessary CS. Partner and family engagement, alongside regulating media narratives, may also counteract the influence of negative stories. At the system level, guidelines promoting shared decision-making and provider training to balance patient autonomy with clinical appropriateness are crucial to curb rising CS rates.

Directions for Future Research

Future studies should adopt larger, multicenter designs to capture regional differences and include qualitative components to better understand women’s psychosocial motivations. Additionally, interventions targeting fear of childbirth (e.g., cognitive behavioral therapy, antenatal education) should be trialed for effectiveness in reducing elective CS demand. The role of digital and social media in shaping childbirth perceptions warrants deeper exploration in Pakistan’s context.



Study Limitations

This study is limited by its single-center design and sample size of 100, which may restrict generalizability. Reliance on self-reported perceptions also raises the possibility of reporting bias. Nevertheless, the findings provide valuable insight into underexplored socio-psychological drivers of elective CS in Pakistani women.

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