Volume 3, Issue 7, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

AN ASSESSMENT OF DETERMINANTS ASSOCIATED WITH THE INCREASED CESAREAN SECTION RATE AT LADY WILLINGDON HOSPITAL, LAHORE

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DOI: https://doi.org/10.5281/zenodo.17043566

Keywords
Cesarean section, Knowledge, Pregnant women, Lady Willingdon Hospital

Article History
Received: 11 June 2025
Accepted: 21 August 2025
Published: 03 September 2025

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Abstract

Background: *The worldwide increase in C-section rates has become a major concern because it affects the health of mothers and their newborns. The identification of factors which drive cesarean delivery rates and pregnant women's understanding of these factors enables healthcare providers to create effective programs for promoting safe delivery methods.*

Materials and Methods: *The study at Lady Willingdon Hospital in Lahore evaluated pregnant women's understanding of factors which contribute to higher C-section rates through a descriptive research design. The study used non-experimental research methods to select 140 women of childbearing age through purposeful sampling. The researchers used a self-designed questionnaire to gather data which they processed through mean and standard deviation score analysis.*

Results: *The research results showed that normal delivery was the preferred choice for 58.6% of women but 41.4% chose cesarean section and one-third of these procedures lacked proper medical reasons. The study revealed that 45.7% of women demonstrated poor knowledge about cesarean delivery factors and their scores averaged 6.4 ± 4.2 (42.6%) which indicated minimal to average comprehension.*

Conclusion: *The research shows that pregnant women demonstrated poor understanding of factors driving C-section increases yet their knowledge did not impact the actual occurrence of these factors. The research supports the need for enhanced maternal education programs which will help women choose their childbirth options wisely.*

INTRODUCTION

Cesarean section (C-section) is a vital surgical intervention for saving the lives of mothers and infants during complicated deliveries; however, its rapidly increasing rates worldwide have raised concerns about potential overuse and associated risks. The World Health Organization (WHO) recommends that C-section rates should not exceed 10–15% at the population level, as higher rates do not necessarily correlate with improved maternal and neonatal outcomes (WHO, 2015). Despite this, South Asian countries, including Pakistan, have reported alarming trends of rising cesarean deliveries, often exceeding international recommendations (Dhakal-Rai et al., 2022). Globally, similar patterns

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ISSN: (e) 3007-1607 (p) 3007-1593

have been observed in diverse settings such as India, China, and Jordan, reflecting both medical and non-medical drivers of C-section uptake (Roy et al., 2021; Ji et al., 2015; Batieha, 2017).

The determinants influencing the rise in cesarean section rates are multifaceted, including medical, socio-demographic, and institutional factors. Studies in Pakistan have highlighted maternal age, urban residence, antenatal care utilization, and higher education levels as significant predictors of cesarean delivery (Amjad et al., 2018). Likewise, research in other South Asian contexts demonstrates that patient preferences, fear of labor pain, and perceptions of safety significantly shape delivery mode choices (Suwanrath et al., 2021). Moreover, prenatal risk factors such as maternal obesity, hypertension, and gestational diabetes are consistently linked with elevated C-section rates in both developed and developing countries (Patel et al., 2005; Zandkarimi et al., 2021). These findings indicate that rising cesarean rates cannot be solely attributed to clinical necessity but are strongly influenced by social, cultural, and institutional dynamics.

In Pakistan, tertiary hospitals in urban centers, such as Lahore, represent a critical setting for understanding the determinants behind increased C-section rates. Lady Willingdon Hospital, being one of the leading maternal and child healthcare facilities in Lahore, faces high patient inflows and increasing demand for surgical deliveries. Previous regional and international evidence suggests that determinants such as maternal request, provider preferences, medico-legal concerns, and institutional policies may also contribute to this trend (Ji et al., 2015; Roy et al., 2021). Understanding the interplay of these determinants within the local context is crucial for developing evidence-based interventions to rationalize cesarean section practices, improve maternal education, and align delivery care with WHO's safe childbirth recommendations (Mayo Clinic, 2022; WHO, 2015).

1. Materials and Methods

1.1 Research Approach

The study used a quantitative non-experimental method to evaluate pregnant women's understanding of factors which contribute to higher cesarean section rates. The quantitative method was selected because it enables researchers to measure responses systematically while statistical analysis helps identify knowledge deficits and their corresponding elements. The non-experimental research design proved suitable because the study focused on understanding current situations and opinions without changing any variables or disrupting the natural environment of participants.

2.2 Research Design

The research design employed descriptive methods to understand how pregnant women and women of childbearing age understand the elements which result in cesarean section births. The descriptive research method allows researchers to study patterns of knowledge while keeping the study environment intact without any experimental modifications. The research design matched the study requirements because it focused on collecting factual data about women's understanding of C-section determinants during their hospital stay.

2.3 Research Setting

The research took place at Lady Willingdon Hospital in Lahore which operates as one of the biggest maternity facilities throughout Punjab. The hospital delivers specialized maternal and child healthcare services to numerous patients who come from Lahore and its surrounding communities. The research site was selected because it receives many patients and shows rising C-section trends that match urban healthcare patterns across Pakistan.

2.4 Population and Sample

The research focused on pregnant women and women of childbearing age who received antenatal and maternal care at Lady Willingdon Hospital. The study included women between 18 and 45 years old who received hospital services during the data collection period. The research excluded women who refused to participate and those with serious medical issues at the time of data collection. The researcher used purposive sampling to select 140 participants who fulfilled all study criteria for participation. The research team determined this participant number would effectively show

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ISSN: (e) 3007-1607 (p) 3007-1593

knowledge differences and support statistical evaluation.

2.5 Instruments

The data collection instrument consisted of a self-administered questionnaire which researchers created through their analysis of existing studies about C-section determinants. The instrument contained two main sections.

The first section gathered information about participants' socio-demographic background including their age and number of births and educational level and residential location and employment status and delivery history.

The second section contained multiple-choice questions about factors which contribute to higher cesarean section rates including maternal requests and medical requirements and hospital policies and cultural elements.

The survey used a closed-response format which provided clear questions and simple administration and standardized answer options. The instrument underwent testing with a small group of women who were not part of the main study population to validate its reliability and effectiveness. The researchers implemented suggested changes to the instrument after receiving feedback before conducting the final survey.

2.6 Data Collection Procedure

The research team received ethical clearance from the hospital administration responsible for the study site. The researchers obtained written authorization from Lady Willingdon Hospital followed by consent from all participants before starting data collection. The researcher along with trained data collectors performed data collection activities in the antenatal and maternity wards of the hospital. The researchers explained the study purpose to participants while ensuring them that their responses would stay confidential and that they could exit the study whenever they wanted. The researchers conducted data collection activities throughout a one-month period to reach the needed number of participants.

2.7 Data Analysis

The research team processed the gathered information through statistical software before performing analysis. The researchers applied descriptive statistics including mean values and standard deviations and frequency counts and percentages to present socio-demographic information and knowledge assessment results. The researchers performed chi-square tests to determine how different socio-demographic characteristics relate to knowledge understanding. The research findings were presented through tables which followed the study's established objectives for interpretation.

2. Results

Table 1. Socio-demographic Characteristics of Pregnant Women (n = 140)

S.No	Demographic Variable	Category	Frequency (n)	Percentage (%)
1	**Age (in years)**	19–24	28	20.0%
		25–29	35	25.0%
		30–34	32	22.9%
		35–39	28	20.0%
		40–44	17	12.1%
		Total	**140**	**100%**
2	**Education**	No Education	20	14.3%
		Primary	30	21.4%
		Middle	28	20.0%
		Secondary	36	25.7%
		Higher	26	18.6%
		Total	**140**	**100%**
3	**Monthly Income (PKR)**	10,000–20,000	29	20.7%
		21,000–30,000	34	24.3%

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		31,000–40,000	27	19.3%
		41,000–50,000	24	17.1%
		Above 50,000	26	18.6%
		Total	**140**	**100%**
4	**Antenatal Visits**	1–3	22	15.7%
		4–6	39	27.9%
		7–9	46	32.9%
		Above 9	33	23.6%
		Total	**140**	**100%**
5	**Preferred Mode of Delivery**	Normal Vaginal Delivery	82	58.6%
		Cesarean Section	58	41.4%
		Total	**140**	**100%**
6	**C-section Indication (if applicable)**	Yes	97	69.3%
		No	43	30.7%
		Total	**140**	**100%**

The socio-demographic data of 140 pregnant women at Lady Willingdon Hospital in Lahore shows that most women were between 25 and 34 years old (47.9%) and the smallest groups were 19-24 years old (20%) and 40-44 years old (12.1%). The majority of women received their education at the secondary level (25.7%) and primary level (21.4%) while 14.3% had no formal education and 18.6% had higher education. The highest number of women earned between 21,000 and 30,000 PKR (24.3%) and 18.6% of women earned more than 50,000 PKR. Women who received 7-9 antenatal care visits made up 32.9% of the total while 27.9% had 4-6 visits and 15.7% received less than three visits. Normal vaginal delivery was the preferred delivery method for 58.6% of women yet 41.4% chose cesarean section delivery because of shifting preferences. The 69.3% of women who chose cesarean section delivery cited medical reasons while 30.7% lacked medical justification for their choice indicating non-medical factors contribute to increasing C-section rates.

Table 2. Distribution of Pregnant Women According to Their Knowledge Score (n = 140)

Knowledge Score	Range	Frequency (n)	Percentage (%)
Poor	1–5	64	45.7%
Average	6–10	52	37.1%
Excellent	11–15	24	17.1%
Total	—	**140**	**100%**

The data in Table 2 reveals how pregnant women understand the elements which contribute to elevated cesarean section numbers. The survey results show that 45.7% of women demonstrated poor understanding while 37.1% showed average understanding of the factors leading to cesarean sections. The results show that only 17.1% of women achieved excellent scores indicating most women lacked complete understanding of cesarean section determinants. The research demonstrates a major information deficiency about cesarean sections which supports the requirement for maternal education programs that focus on raising awareness.

Table 3. Knowledge Score of Pregnant Women Regarding Increased Cesarean Section Rate (n = 140)

Knowledge Score	Mean ± SD	Median	Range Score	Mean Percentage
Overall Score	6.4 ± 4.2	6	1–15	42.6%

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ISSN: (e) 3007-1607 (p) 3007-1593

The knowledge assessment results for 140 pregnant women appear in Table 3. The participants achieved a mean knowledge score of 6.4 ± 4.2 points with a median score of 6 and a total range from 1 to 15. The participants demonstrated a low-to-moderate level of understanding through their average percentage score of 42.6%.

3. Discussion

The research data showed that pregnant women at Lady Willingdon Hospital in Lahore demonstrated inadequate knowledge about C-section determinants since only a small number of participants showed excellent understanding. The study results demonstrate a major deficiency in public understanding about the increasing number of C-sections. The research by Betran et al. (2021) supports global data showing that cesarean section rates continue to rise worldwide beyond recommended medical thresholds. The World Health Organization has stated that high C-section rates do not lead to better health outcomes for mothers and newborns thus education about proper medical indications for cesarean delivery remains essential (Keenan, 2021; Ye et al., 2015).

The study results showed medical reasons explained most C-sections but a substantial number of cases lacked proper clinical evidence which suggested social and cultural along with institutional factors at play. The research by Miseljic Basic and Miseljic (2018) shows that maternal requests and provider prejudices and fear of labor pain result in avoidable cesarean sections while Singh et al. (2020) found that non-medical factors such as maternal education status and urban living location play a role. The research by Roy et al. (2021) supports previous findings that South Asian women now choose cesarean sections more frequently because they prefer institutional births even when medical reasons are not present.

The study demonstrates that women with low to moderate knowledge levels will continue this pattern because their insufficient understanding prevents them from making proper choices. The high rate of cesarean sections in Ethiopia stems from three main factors: socioeconomic status and insufficient antenatal education and insufficient patient knowledge according to Taye et al. (2021). The reduction of avoidable C-sections and promotion of safe vaginal births requires training programs that focus on both healthcare providers and pregnant women according to Limbs and Things (2022). The study by Byamugisha and Adroma (2020) shows that urban hospitals perform more cesarean sections than low-resource areas because of existing maternal health disparities which require evidence-based solutions. The study confirms worldwide research which demonstrates that lowering avoidable cesarean sections needs two essential approaches to improve maternal education and professional obstetric decision-making training.

4. Conclusion

The research results suggest that specific maternal education programs should focus on teaching women about medical and non-medical factors which affect the need for cesarean sections. The implementation of enhanced antenatal counseling and provider training will help decrease avoidable cesarean sections while supporting safe evidence-based childbirth methods.

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