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KNOWLEDGE AND BELIEF OF WOMEN REGARDING THE COMPLICATIONS OF CESAREAN SECTION

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Abstract

Background: *Cesarean section is one of the most commonly performed obstetric procedures worldwide. Although it can be lifesaving when medically indicated, it may be associated with complications such as infection, excessive bleeding, postoperative pain, wound complications, anesthesia-related problems, and delayed recovery. Adequate knowledge and appropriate beliefs may support informed decision-making and postoperative care.*

Aim: *The study aimed to assess the knowledge and beliefs of women regarding complications of cesarean section at Jinnah Hospital, Lahore.*

Methods: *A descriptive cross-sectional design was used among **240 women** at Jinnah Hospital, Lahore. The sample size was calculated using the Raosoft calculator based on a population of 500, with a 95% confidence level and 5% margin of error. Participants were recruited through consecutive sampling. Data were collected using a structured questionnaire and analyzed using **SPSS version 27**. Descriptive and inferential statistics were applied, with significance set at $p < .05$.*

Results: *Most participants were aged 26–35 years (42.1%), had secondary education (27.9%), and lived in urban areas (59.6%). Previous cesarean experience was reported by 63.3%. Overall, 49.6% had moderate knowledge, 30.4% had good knowledge, and 20.0% had poor knowledge. Favorable beliefs were reported by 44.6%. Education, residence, and previous cesarean experience were significantly associated with knowledge and beliefs.*

Conclusion: *Women demonstrated moderate knowledge and generally favorable beliefs regarding cesarean-section complications. Structured maternal education and counseling were recommended.*

Introduction

Knowledge is the information and understanding that women have about the cesarean section, conditions for conducting the CS, complications, recovery needs, and long-term outcomes. Belief is defined as women's perception, expectation, attitude and personal judgment about the safety, necessity, benefits, and risks of cesarean delivery. Cesarean section (CS) is a surgical procedure where the baby is delivered through an incision in the mother's abdomen and uterus. Side effects of cesarean section are any adverse events that happen during or after the surgery to the mother or her baby, such as bleeding, infection, anesthetic issues, blood clot, wound issues, damage to the urinary tract or intestines, recovery time or complications in subsequent pregnancies. Cesarean section is a significant life-saving

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procedure, when medically indicated, but it is a major abdominal surgical procedure, and can pose risks to women, both in the immediate term and in the longer term (World Health Organization [WHO], 2021; Keag et al., 2020).

Cesarean-section (CS) is now among the most common surgical interventions during childbirth worldwide. Based on data from the latest available international data, it is estimated that about 21.1% of births were cesarean section in the period covered, and there was significant variation between regions. By 2030, the global rate is expected to reach 28.5% or over 38 million cesarean deliveries per year (Betrán et al., 2021). The proportion of cesarean births has increased from about 6% of all births in 1990 to 21% in 2018 and is projected to rise further (WHO, 2021). The burden is especially significant in LMICs, where more and more people are seeking more obstetric services, with insufficient surgical staff supply, variable postoperative care, and inequities in access to safe surgical care.

Cesarean delivery is a clinically significant procedure as it may cause complications for women in the short-term after surgery and in future pregnancies. Maternal complications include postoperative infection, wound infection, endometritis, hemorrhage, injury to the urinary tract, anesthesia complications, venous thromboembolism, a longer hospital stay and delayed physical recovery. Cesarean delivery may be associated with a higher risk of development of adhesions, placenta previa, placenta accreta spectrum, uterine rupture, and hysterectomy in future pregnancies (WHO, 2021; Keag et al., 2020). The risks become especially relevant when women have cesarean delivery without a clear medical indication because there could be exposure to surgical morbidity without a corresponding clinical benefit.

Safe maternity care is supported by understanding the complications by the mother. Women can become more engaged in informed decision-making with health professionals when they are aware of the indications, possible benefits, immediate risks and longer term consequences of cesarean delivery. A cross-sectional study containing 507 women in Jeddah, Saudi Arabia, reported that 45.4% of the women had poor knowledge about the complications of cesarean delivery and 12.6% had good knowledge (Yaqoub et al., 2022). There can be areas of knowledge gaps, such as recognition of post-operative infection, excessive bleeding, thromboembolic complications, wound issues, anesthetic risks, and impact on subsequent pregnancies. Inadequate knowledge can diminish women's capacity to identify signs of possible discharge complications and can affect their recovery beliefs.

The beliefs of women also have an impact on decision-making regarding childbirth. Some women may feel that cesarian section is safer, easier, less painful or more predictable than vaginal birth. Other women might think that a cesarean section is extremely painful, leaves them weak, susceptible to complications from surgery, or have trouble getting pregnant again. In South Punjab, evidence also showed that the belief in the safety of caesarean delivery was found to be significantly associated with mode of delivery along with clinical factors and gynecologist's recommendation (Saeed et al., 2023). The results of such studies suggest that beliefs are not independent of clinical decisions and that beliefs may influence other factors that have been shown to influence clinical decision making, such as professional advice, prior childbirth experiences, family expectations, education, socioeconomic factors, and perceived severity of pregnancy-related problems.

The access to maternity services, rural residence, socioeconomic conditions, autonomy of women, and health-related decision making are the factors that contribute to differences in the local burden in Khyber Pakhtunkhwa. In Khyber Pakhtunkhwa, women's research-related challenges in accessing maternal healthcare and household decision-making persist, especially in rural areas (Khan et al., 2022). Skilled obstetric services and transportation may be more challenging for rural women, as well as accessing health information. These situations can make women's knowledge of cesarean complications relevant in terms of identifying and recalling signs of danger, communicating with health workers, post cesarean care, and future pregnancies.

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The cesarean delivery rate in Pakistan has grown significantly in the last few decades. National level analysis of demographic and health survey data has shown a steady rise in cesarean use, and that there are significant variations by province, place of residence, socio-economic status and health sector (Ayyaz et al., 2021). Evidence from Southern Punjab further showed that one hospital-based study reported 69.7% of the women in the study population delivered by cesarean section (Majeed et al., 2021), of which 60.1% were elective and 39.8% emergency cesarean section. These statistics highlight the need to look at the rate of cesarean delivery as well as women's knowledge and attitudes about the impact it has.

8. Punjab is a significant contributor to the national cesarean burden. It was found that there was a substantial difference in the use of cesarean section among different households, maternal factors, and health facility access in the Punjab Multiple Indicator Cluster Survey (MICS) (2021) (Bureau of Statistics Punjab et al., 2021). A recent study in South Punjab also revealed that there was a significant correlation between sociodemographic factors, clinical indicators, provider advice and women's perceptions of the safety of cesarean section (Saeed et al., 2023). This is because the rising surgical delivery, in combination with the differences in women's knowledge (and mismatch of knowledge and beliefs) of potential complications, necessitates targeted knowledge and beliefs assessment on complications, rather than focusing exclusively on the decision for cesarean delivery.

Inadequate knowledge isn't limited to the choice of delivery mode. If a woman doesn't know about the complications after surgery, she might think that any of the following symptoms is a part of her healing process: fever, oozing from the incision, worsening abdominal pain, heavy bleeding, calf swelling, difficulty breathing, or persistent weakness. Appropriate assessment and treatment may be delayed when symptoms are not recognized. Long-term complications are also relevant as their knowledge can affect subsequent pregnancy management. WHO acknowledges that risks associated with the cesarean section can go far beyond the actual delivery, and can impact maternal health, as well as future pregnancies (WHO, 2021). Good counselling during preparation for childbirth could give women realistic expectations and enable them to participate in decisions about childbirth.

Methods

A descriptive cross-sectional research design was used to assess women's knowledge and beliefs regarding complications of cesarean section. The study was conducted at Jinnah Hospital, Lahore, a tertiary care teaching hospital providing comprehensive obstetric, surgical, and postoperative services. The study population comprised women aged 18 years or above who had undergone or were scheduled to undergo cesarean section and were receiving care at the hospital. The sample size was calculated using the Raosoft sample size calculator based on an accessible population of approximately 500 women, a 95% confidence level, 5% margin of error, and 50% response distribution. The calculated sample size was 218; after adding 10% to account for possible non-response or incomplete responses, the final target sample was 240 participants. A non-probability consecutive sampling technique was used. Data were collected through a structured questionnaire covering demographic characteristics, knowledge of cesarean-section complications, and beliefs regarding cesarean section, safety, recovery, and associated maternal health concerns.

Data Collection Procedure

Following ethical approval and administrative permission from the relevant authorities, data collection was conducted in the obstetric and postoperative areas of Jinnah Hospital. Eligible participants were approached consecutively and informed about the study purpose, procedures, voluntary nature of participation, and confidentiality of the information provided. Written informed consent was obtained before questionnaire administration. Participants were given sufficient time to complete the questionnaire independently. The researcher remained available to clarify procedural questions without influencing participants' responses.

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Completed questionnaires were reviewed for completeness immediately after collection and securely maintained for subsequent analysis. Privacy and confidentiality were ensured throughout the data collection process.

Data Analysis Procedure

The collected data were coded, entered, and analyzed using Statistical Package for the Social Sciences (SPSS), version 27. Frequencies and percentages were calculated for categorical demographic and study variables, while means and standard deviations were used for continuous variables where appropriate. Knowledge scores were categorized according to predetermined scoring criteria, whereas beliefs were summarized according to the response categories of the questionnaire. Appropriate inferential statistical tests were applied to determine associations between demographic characteristics and participants' knowledge and beliefs regarding cesarean-section complications. Statistical significance was determined at a p-value of less than 0.05.

Results

Demographic Analysis

Table 1: Demographic Characteristics of the Participants (n = 240)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–25	82	34.2
	26–35	101	42.1
	36–45	47	19.6
	>45	10	4.2
Educational Qualification	No formal education	48	20.0
	Primary	42	17.5
	Secondary	67	27.9
	Intermediate	45	18.8
	Graduate or above	38	15.8
Residence	Urban	143	59.6
	Rural	97	40.4
Previous Cesarean Section	None	88	36.7
	1	79	32.9
	2	51	21.3
	≥3	22	9.2
Previous Experience of Cesarean Section	Yes	152	63.3
	No	88	36.7

The findings showed that the largest proportion of participants, **101 (42.1%)**, were aged 26–35 years. Most participants were married **232 (96.7%)**. Regarding educational qualification, 67 (27.9%) had secondary education. More than half of the participants, **143 (59.6%)**, were from urban areas. A previous cesarean section was reported by 152 (63.3%) participants.

Table 2: Knowledge Regarding Complications of Cesarean Section (n = 240)

Knowledge Item	Correct n (%)	Incorrect n (%)
Cesarean section may cause wound infection	184 (76.7)	56 (23.3)
Excessive bleeding may occur after cesarean section	177 (73.8)	63 (26.3)
Postoperative pain is a possible complication	207 (86.3)	33 (13.8)
Wound healing problems may occur	165 (68.8)	75 (31.3)
Anesthesia may cause complications	151 (62.9)	89 (37.1)

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Cesarean section may increase the risk of blood clots	104 (43.3)	136 (56.7)
Cesarean section may result in delayed recovery	173 (72.1)	67 (27.9)
Urinary tract infection may occur after cesarean section	139 (57.9)	101 (42.1)
Cesarean section may increase hospital stay	168 (70.0)	72 (30.0)
Respiratory complications may occur due to anesthesia	116 (48.3)	124 (51.7)

Interpretation: The highest level of knowledge was observed regarding postoperative pain, with **207 (86.3%)** participants answering correctly. This was followed by knowledge regarding wound infection **184 (76.7%)** and excessive bleeding **177 (73.8%)**. Knowledge was comparatively lower regarding the risk of blood clots, as only **104 (43.3%)** participants responded correctly.

Table 3: Participants' Beliefs Regarding Cesarean Section and Its Complications (n = 240)

Belief Statement	Agree n (%)	Neutral n (%)	Disagree n (%)
Cesarean section is generally safe when medically indicated	181 (75.4)	35 (14.6)	24 (10.0)
Cesarean section can cause serious complications	166 (69.2)	42 (17.5)	32 (13.3)
Cesarean section causes more postoperative pain than vaginal delivery	159 (66.3)	44 (18.3)	37 (15.4)
Recovery after cesarean section takes longer	174 (72.5)	39 (16.3)	27 (11.3)
Women should receive information about complications before surgery	216 (90.0)	17 (7.1)	7 (2.9)
Previous cesarean section increases concern about future complications	143 (59.6)	53 (22.1)	44 (18.3)
Cesarean section should only be performed when medically necessary	202 (84.2)	24 (10.0)	14 (5.8)
Women can recover completely after cesarean section with appropriate care	190 (79.2)	32 (13.3)	18 (7.5)
Fear of complications may cause anxiety among women	198 (82.5)	27 (11.3)	15 (6.3)
Proper postoperative care can reduce complications	211 (87.9)	20 (8.3)	9 (3.8)

Interpretation: Most participants, **216 (90.0%)**, believed that women should receive adequate information about possible complications before cesarean section. Furthermore, **211 (87.9%)** believed that proper postoperative care could reduce complications. A majority, **202 (84.2%)**, believed that cesarean section should only be performed when medically necessary.

Table 4: Association Between Demographic Characteristics and Knowledge Level (n = 240)

Variable	Category	Poor n (%)	Moderate n (%)	Good n (%)	p-value
Age	18–25	21 (25.6)	43 (52.4)	18 (22.0)	0.041
	26–35	17 (16.8)	47 (46.5)	37 (36.6)	
	36–45	8 (17.0)	23 (48.9)	16 (34.0)	
	>45	2 (20.0)	6 (60.0)	2 (20.0)	
Education	No formal education	18 (37.5)	24 (50.0)	6 (12.5)	<0.001
	Primary	12 (28.6)	23 (54.8)	7 (16.7)	
	Secondary	11 (16.4)	37 (55.2)	19 (28.4)	
	Intermediate	5 (11.1)	23 (51.1)	17 (37.8)	
	Graduate or above	2 (5.3)	12 (31.6)	24 (63.2)	
Residence	Urban	21 (14.7)	68 (47.6)	54 (37.8)	0.003

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	Rural	27 (27.8)	51 (52.6)	19 (19.6)	
Previous C-section	Yes	24 (15.8)	72 (47.4)	56 (36.8)	0.018
	No	24 (27.3)	47 (53.4)	17 (19.3)	

A statistically significant association was observed between knowledge level and age (**p = 0.041**), educational qualification (**p < 0.001**), residence (**p = 0.003**), and previous cesarean-section experience (**p = 0.018**). Participants with higher educational qualifications generally demonstrated better knowledge regarding cesarean-section complications.

Discussion

The study investigated the knowledge and beliefs of 240 women at Jinnah Hospital in Lahore, Pakistan regarding the challenges of cesarean section. According to the demographic survey, 101 (42.1%) of the subjects were 26-35 years old, and 82 (34.2%) were between 18-25 years old. Most of the women had some education, and the majority, 67 (27.9%) had secondary education. Of the total sample, 143 (59.6%) were urban women. One hundred and fifty-two (63.3%) of women had undergone cesarean section previously. The researchers believed that having a previous cesarean section presented a challenge for the participants and would likely influence the participants' perspective on the recovery and possible surgical complications. Studies in Pakistan have demonstrated that women who are scheduled for cesarean section do have some knowledge concerning cesarean section surgery, but there are significant gaps concerning the elements and risks associated with the surgery, particularly the various forms of anesthesia (Ahmad & Afshan, 2011).

According to the data processed, 49.6% of women had moderate knowledge, 30.4% had good knowledge, and 20.0% had poor knowledge on the postoperative effects of a C-section. Participants appeared to have the best understanding of postoperative pain, infection, excessive bleeding, and healing. They had the least understanding of anesthesia and thromboembolism related complications. The participants seemed to understand or be more aware of complications that are more tangible. There is a clear discrepancy with the findings of Yaqoub et al. (2022) where they noted that 45.4% of the women surveyed had poor knowledge and 12.6% had good knowledge regarding the effects of a C-section. Their participants were recruited from the antenatal and postnatal clinics in Jeddah. The authors noted a general lack of awareness of the short and long term effects of a C-section. The participants of the present study were recruited from a hospital and were primarily women who had experienced a C-section before. It should be noted that a higher awareness of the effects of a C-section may be attributed to previous experience with the procedure.

Knowledge about individual complications was varied. In the current study, 86.3% of the study participants acknowledged postoperative pain, 76.7% identified the infection of the wound, and 73.8% identified bleeding which was excessive. 43.3% of the participants recognized that blood clots could be a complication of cesarean section, while 48.3% of the participants recognized that a complication of anesthesia could be difficulty in breathing. The results showed that study participants were able to identify the immediate and obvious complications of cesarean delivery in comparison to complications which required special health education. The study of Ahmad and Afshan (2011) suggested that Pakistani women recognized the existence of different types of anesthesia and the complications which accompanied it, although their knowledge of the complications and the benefits was limited. The authors studied 410 women who were scheduled for cesarean section and found that the women expressed their concerns about anesthesia in their preference of a particular anesthesia. This supported the need for special anesthesia counseling and the less frequently discussed surgical complications.

According to our study, 44.6% of women held favorable beliefs, 37.9% of women held neutral beliefs, and 17.5% of women held less favorable beliefs. There was a strong belief concerning the

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importance of women being presented with information prior to surgery. Informed of all possible complications, 90.0% of women believed women needed to be informed of all possible complications. Additionally, 87.9% believed that postoperative care would help diminish the incidence of complications and 84.2% believed that cesarean sections should be performed when medically necessary. These results demonstrated that postoperative care and informed decision-making were recognized by the women studied. These results were opposed by Keshk et al. (2024), who reported that most of the women studied had a negative attitude towards cesarean delivery and a preference for vaginal delivery. The results differed because of the different participant characteristics, the nature of the healthcare settings, the cultural context, the participant's previous surgical experiences, and the methods used to measure and evaluate beliefs and attitudes, respectively.

Educational level demonstrated a statistically significant correlation with knowledge ($p < 0.001$) and beliefs ($p < 0.001$). Women holding graduate-level degrees or higher had superior knowledge and attitudes than women who had no schooling at all. Residence in an Urban area also positively correlated with both knowledge ($p = 0.003$) and belief ($p < 0.001$) attitudes. This study's results follow the general pattern of existing studies regarding women's knowledge and perception of cesarean delivery. Women's attitudes regarding vaginal and cesarean delivery were assessed in relation to their sociodemographic status in a study based in Pakistan that was carried out in one of the tertiary-level care hospitals in Rawalpindi. These results aligned with those of Boerma et al. (2022), who found a statistically significant correlation between women's age and the level of knowledge regarding cesarean sections. In this study, a positive correlation between education and knowledge of cesarean sections was found which indicates that women's formal education helps them interpret health-related information, identify health risks, and help them make informed choices.

The present study revealed that previous cesarean experience was an important factor related to knowledge ($p = 0.018$) and beliefs ($p = 0.014$). Women who had undergone cesarean delivery before scored higher on both knowledge and beliefs when compared to women who had no such experience. Women who have undergone surgery have direct exposure to postoperative pain and the rules of pain control, the process of wound healing, and the duties of nurses and other health care professionals. The result of the present study is contrary to the result of Sultana et al. (2020) who stated that there was no significant difference in the knowledge of cesarean complications amongst women who had undergone cesarean delivery and those who had not. The lack of significance in their study was attributed to vagueness of the existing literature on the effect of previous cesarean experience on women's knowledge. The findings of the present study are in line with the suggestion that even though women have previous surgical experience, health care professionals must give such women the needed health education.

The respondents at Jinnah Hospital Lahore demonstrated moderate knowledge of cesarean section complications as well as relatively positive perceptions. However, significant gaps in knowledge were noted in regard to thrombo-embolic and anesthesia-related complications. Information should be provided on the common complications as well as rare but important complications, including their symptoms, postoperative care, and the need for active mobility to avoid blood clot formation and the option of seeking further care. Existing evidence from Pakistan demonstrates that women are aware of the different steps in a cesarean section; however, it is possible for women to remain unaware of the important risks and benefits of the surgery. It was therefore recommended that patient-centered counseling be strengthened both before and after cesarean section. This is expected to improve the informed participation of women in the decision-making process and to reduce anxiety and misconceptions related to the surgery and the postoperative period.

Conclusion

The goal of this research was to analyze the knowledge and beliefs of women in relation to

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cesarean section complications at Jinnah Hospital, Lahore. Based on the data, 49.6% of women had moderate knowledge, 30.4% had good knowledge, and 20.0% had poor knowledge of cesarean section complications. It was documented that women had a good understanding of common complications of cesarean section such as postoperative pain, infection, bleeding, and delayed healing. The participants overall had limited knowledge of complications like thromboembolic disease and complications related to anesthesia.

The participants of the study had a positive attitude towards cesarean section and its associated complications. Of these participants, 44.6% had a positive attitude, 37.9% remained neutral, and 17.5% had a negative attitude. Most of the women believed that the formation of an informed opinion is the responsibility of the healthcare professional to explain the surgical procedure and that the negative effects would be minimized with adequate postoperative care. The participants' level of education, place of residence, and the experience of cesarean section influenced their level of knowledge and attitude towards cesarean section. It was concluded that the participants had a positive attitude, and some gaps remained. Structured health education and counseling by nurses and maternal health specialists was needed.

Recommendations

- -According to the study, the researchers provide the following recommendations:
- Structured patient education: It was recommended that nurses and other healthcare practitioners provide structured education to women concerning the possible consequences of a cesarean section in all antenatal and preoperative visits.
- Preoperative counseling: Women undergoing cesarean sections should be informed about the risks involving infection, excessive blood loss, thromboembolism, anesthesia-related issues, and issues with surgical site healing.
- Postoperative education: Women should be taught the management of surgical site wound, pain, ways to prevent infection and basic nutrition, and the signs that warrant an immediate call to the doctor.
- Individualized education: Educational programs should take into account the literacy level of women, especially women with low literacy and from rural areas.
- Use of simple educational materials: Hospitals should develop simple and understandable educational materials in Urdu and other vernacular languages to address the literacy level of women.
- Role of nurses: Nurses and midwives should play an active role in completion of evidence-based counseling before and after cesarean section.
- Family involvement: Health education should be offered to family members to facilitate the provision of the required postoperative care at home. This should be done with the consent of the woman.
- Repeated counseling: Education should not be restricted to the immediate preoperative period. It should be done during all antenatal, postoperative, and discharge counseling sessions.
- Further research: Similar research should be conducted in other hospitals and in other geographical areas of Pakistan using bigger sample sizes to improve the study findings.
- Interventional studies: Future researchers should conduct semi-structured or unstructured research to determine the impact of interventions on the knowledge, perceptions, and post cesarean self-care of women.

References

Ahmad, I., & Afshan, G. (2011). Knowledge and attitudes of Pakistani women towards anaesthesia techniques for caesarean section. *Journal of the Pakistan Medical Association, 61*(4), 359–362.

Ashimi, A. O., Amole, T. G., & Iliyasu, Z. (2013). Knowledge and attitude of pregnant women to caesarean section in a semi-urban community in Northwest Nigeria. *Nigerian Journal of Basic and Clinical Sciences, 10*(2), 102–106.

Frontier in Medical & Health Research

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

Ayyaz, U., et al. (2021). Rising trends and inequalities in cesarean section rates in Pakistan: Evidence from Pakistan Demographic and Health Surveys. *PLOS ONE*.

Betrán, A. P., Ye, J., Moller, A.-B., Souza, J. P., & Zhang, J. (2021). Trends and projections of caesarean section rates: Global and regional estimates. *BMJ Global Health, 6*(6), e005671. https://doi.org/10.1136/bmjgh-2021-005671

Boerma, T., Ronsmans, C., Melesse, D. Y., Barros, A. J. D., Barros, F. C., Juan, L., Moller, A.-B., Say, L., Hosseinpoor, A. R., Yi, M., de Ly, E., & Temmerman, M. (2018). Global epidemiology of use of and disparities in caesarean sections. *The Lancet, 392*(10155), 1341–1348. https://doi.org/10.1016/S0140-6736(18)31928-7

Bureau of Statistics Punjab, et al. (2021). Prevalence and associated factors of caesarean section in Punjab, Pakistan: Evidence from Multiple Indicators Cluster Survey, 2017–2018. *Pakistan Journal of Medical Research*.

Keshk, A. M., et al. (2024). Knowledge and attitude toward modes of delivery and possible complications among women in Al-Baha region, Saudi Arabia. *Cureus*.

Keag, O. E., Norman, J. E., & Stock, S. J. (2020). Long-term risks and benefits associated with caesarean delivery for mother, baby and subsequent pregnancies: Systematic review and meta-analysis. *PLoS Medicine, 17*(1), e1002976. https://doi.org/10.1371/journal.pmed.1002976

Khan, M. A., et al. (2022). Women's status and its association with home delivery: A cross-sectional study conducted in Khyber Pakhtunkhwa, Pakistan. *BMC Pregnancy and Childbirth*.

Majeed, A., et al. (2021). A cross-sectional study to assess the frequency and risk factors associated with cesarean section in Southern Punjab, Pakistan. *International Journal of Environmental Research and Public Health, 18*(16), 8812.

Saeed, S., et al. (2023). Socio-ecological factors influencing cesarean and vaginal delivery in South Punjab. *Journal of Psychosomatic Obstetrics & Gynecology*.

Sultana, N., Fatima, S., Muzaffar, T., & Akram, F. (2020). Knowledge and attitude of pregnant women reporting at tertiary care hospital. *Pakistan Armed Forces Medical Journal*.

World Health Organization. (2018). *WHO recommendations: Non-clinical interventions to reduce unnecessary caesarean sections*. World Health Organization.

World Health Organization. (2021a, June 9). *WHO statement on caesarean section rates*. World Health Organization.

World Health Organization. (2021b, June 16). *Caesarean section rates continue to rise, amid growing inequalities in access*. World Health Organization.

Yaqoub, R. M., Khouj, M. A., Alsaif, A. A., Eissa, G. A., Alhemdi, J. A., & Albasri, S. (2022). Awareness and knowledge of caesarean section complications among women in Jeddah, Saudi Arabia. *Cureus, 14*(12), e32152. https://doi.org/10.7759/cureus.32152

Zainab, I., Saddique, H., & Jabeen, R. (2023). Knowledge of pregnant women regarding the mode of delivery among the primary gravida. *Pakistan Journal of Health Sciences, 4*(8).