

Risk Factors Responsible for Caesarea Section among Pregnant Women Attending Imo State Specialist Hospital Umuguma, Owerri West Local Government Area, Imo State, Nigeria

Jennifer C. Emeziri ¹, Augustine U. Akujobi ², Priscilla O. Chinedu-Eleonu ³, Chidera A. Akujobi ⁴

^{1,3} Department of Public Health, Imo State University, Owerri, Nigeria

² Department of Optometry, Imo State University, Owerri, Nigeria

⁴ Department of Surgery, Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Awka, Nigeria

Corresponding author

Jennifer C. Emeziri

Phone: +2348183547443

Email: odilijennifer@gmail.com

Abstract

The study investigated the risk factors responsible for caesarean section among 100 pregnant women attending Umuguma Specialist Hospital in Owerri West Local Government Area, Imo State, Nigeria. Respondents were selected using both purposive random sampling technique and simple random sampling technique. The reliability index of the questionnaires (0.88) was calculated using the Cronbach Alpha. The data collected were analyzed using Spearman Rank Order Correlation Coefficient and IBM-SPSS (Version 21) software.. The findings revealed weak positive and significant correlation ($r = 0.475$; $p 0.000$) between pre-existing medical factors and the decision for a Caesarean section. There was a strong positive and significant correlation ($r = 0.707$; $p 0.000$) between socioeconomic factors and likelihood of undergoing a caesarean section. Health equity should be emphasized to ensure that all women have equal opportunities for informed choices regarding their delivery options.

Keywords: Caesarean Section, Pregnancy, Socioeconomic Factors, Medical Factors

Introduction

A cesarean section (c-section) is a surgical procedure used to deliver a fetus, placenta, and membranes through an incision in the abdomen and uterus after 38 weeks of

gestation. It is performed in obstetric emergencies where immediate intervention is required to prevent harm to the mother, fetus, or both, and is typically chosen when a vaginal delivery could pose a risk to their health or lives ¹. According to a study ², the

rising number of c-sections can be attributed to factors such as financial incentives, maternal preferences, insufficient regulations, the procedure's perceived safety, a decrease in operative vaginal deliveries, and the identification of high-risk pregnancies. c-sections may be conducted electively or in an emergency. An elective c-section is scheduled in advance to optimize obstetric outcomes, while an emergency c-section is carried out in response to a sudden obstetric crisis threatening the health of the mother and/or baby.

The increasing prevalence of caesarean sections around the world underscores the complexity of factors influencing this surgical delivery option. Medically, c-sections are often performed in response to complications during labor that pose risks to either the mother or the baby³. These complications can include fetal distress, abnormal presentations such as, breech or transverse lies, and maternal conditions like preeclampsia or placenta previa. Each of these medical factors necessitates a careful assessment of risks and benefits, often leading to the decision to opt for a c-section to ensure a safer delivery outcome.

In addition to medical reasons, personal and psychological factors also play a significant

role². Pregnant women may choose or consent to a c-section due to concerns about labor pain, anxiety about potential complications, or previous negative birth experiences. These individual preferences are influenced by a range of factors, including personal beliefs about childbirth and past medical experiences.

Socio-cultural and systemic influences further impact the decision-making process surrounding c-sections⁴. Healthcare systems and hospital protocols can affect the likelihood of a c-section, with some institutions having higher rates due to practices and policies favoring surgical deliveries. Cultural attitudes towards childbirth also vary; in some cultures, c-sections are preferred for their perceived convenience and safety⁵, while others may advocate for natural birth. Furthermore, the role of healthcare providers in advising or recommending c-sections, influenced by their training, experience, and institutional pressures also plays a crucial role. Understanding these diverse factors is essential for a comprehensive view of the rising rates of caesarean sections and for developing strategies that balance medical necessity with personal and cultural considerations.

Moreover, individual preferences and family dynamics can also play a role. The influence of family members, including partners and extended relatives, can affect a woman's decision-making process⁶. Personal experiences and expectations about childbirth, shaped by family traditions or previous birth experiences, can further impact whether a C-section is pursued or recommended⁷. Understanding these diverse factors provides a holistic view of the reasons behind the increasing rates of caesarean sections and highlights the need for a nuanced approach to addressing this complex issue⁷.

The decision to undergo a caesarean section is influenced by a wide range of factors beyond medical necessity, encompassing socioeconomic, religious, and other personal and systemic dimensions. Socioeconomic factors play a critical role, as access to healthcare services and the availability of resources can significantly impact the likelihood of a c-section. Women from higher socioeconomic backgrounds may have greater access to advanced medical facilities and elective procedures, including c-sections, whereas those from lower socioeconomic backgrounds might face barriers that affect their delivery options, such as limited access to quality prenatal

care or financial constraints. Additionally, the availability and affordability of healthcare can influence both the decision to opt for a c-section and the ability to access it.

Methodology

Research Design

The study adopted the cross-sectional research design.

Study Area

Imo State Specialist Hospital is located in Umuguma, Owerri West Local Government Area of Imo State, Nigeria. Umuguma is the headquarter of Owerri West Local Government Area. Owerri West was carved out of the former Owerri Local Government Area in 1996. It has an area of 295 km² (114 sqm) and a population of 99,265 based on the 2006 census. Owerri West has a tropical climate and there is a brief dry season and significant monthly rainfall. It has a typical temperature of 25.9 °C (78.6 °F) and 2412 mm|95.0 inches of precipitation rain fall annually. However, the communities in Owerri West include Umuguma, Avu, Okuku, Oforola, Obinze, Nekede, Ihiagwa, Eziobodo, Okolochi, Emeabiam, Irete, Orogwe, Amakohia-Ubi, Ndegwu, Ohii, and Eziokele. The principal occupations of these

communities are farming and handicrafts, and civil service.

Umuguma, New Owerri, Off Port Harcourt, New Owerri, Owerri, Nigeria, Owerri, Imo State



Map showing Imo State Specialist Hospital Umuguma

Source: available at <<https://imo state specialist hospital umuguma - Bing Maps>> accessed 15th October, 2024.

Study Population

The population of the study is comprised of 99,265 people based on the 2006 census.

Sample size

Sample Size

The sample size was determined by the use of Taro Yamane’s formula:

Sampling and Sampling Technique

Purposive sampling technique was adopted to select pregnant women attending Umuguma Specialist Hospital.

Ethical Considerations

A written permission was obtained from the management of the hospital, while written informed consents were obtained from the participants. The objectives, methodology and the significance of the study were explained to the respondents and their right to withdraw from the study was communicated. Furthermore, the confidentiality of the respondents was strictly ensured.

Instrument for Data Collection

The instruments for data collection were questionnaires which were randomly

distributed to the participants for opinion survey.

Procedure for Data Collection

Questionnaires were administered on the participants on face-to-face basis and retrieved upon completion. Response options were collated and categorized accordingly.

Results

Table 1: Demographic Characteristics of the Respondents

Variables	Frequency	Percentage (%)
Age		
18-35	45	45
36-45	40	40
46>	15	15
Total	100	100
Religion		
Christian	75	75
Muslim	8	8
Traditional	17	17
Total	100	100
Educational Level		
No formal education	5	5
FSLC	15	15
SSCE	35	35
B.Sc/HND	35	35
Post graduate	10	10
Total	100	100

Data Analysis

Descriptive (simple percentages and charts) and inferential (Spearman Correlation Coefficient) statistics were used to analyze the data. IBM-SPSS (v. 25) statistical software was also applied in the analyses.

Table 1 shows that 45% of the respondents were between the ages of 18-35 years, 40% were between the age of 36-45 while 15% were 46 year and above. 75% were Christian, 8% were Muslims while 17% were traditionalists. 35% of

the respondents had SSCE and B.Sc/HND certificates respectively, 10% had post graduate certificate while 15% and 5% had FSLC and no formal education respectively

.Table 2 Pre-existing medical factors contributing to the decision for a caesarean section among pregnant women

Variables	Frequency	Percentage (%)
Chronic medical conditions (e.g., diabetes, hypertension) that were identified before your pregnancy		
Yes	35	35
No	65	65
Prefer not to say	-	-
Total	100	100
Diagnosed with any pregnancy-related complications (e.g., placenta previa, preeclampsia) during your current pregnancy		
Yes	30	30
No	70	70
Prefer not to say	-	-
Total	100	100
Previous surgeries on your uterus or reproductive organs that might influence the decision for a Caesarean section		
Yes	40	40
No	60	60
Prefer not to say	-	-
Total	100	100
Recommendation from your healthcare provider for a Caesarean section based on your pre-existing medical conditions		
Yes	40	40
No	60	60
Prefer not to say	-	-
Total	100	100
Medical history (e.g., previous Caesarean sections) play a role in the decision to opt for a Caesarean section this time		
Yes	70	70
No	30	30
Prefer not to say	-	-
Total	100	100

Table 2 shows that 35% of the respondents were positive that chronic medical conditions (e.g., diabetes, hypertension) were identified before pregnancy; 70% of the subjects have not had any pregnancy-related complications (e.g., placenta previa, preeclampsia) during their current pregnancy; 40% were positive that previous surgeries on uterus or reproductive organs might influence the decision for a caesarean section while 60% said no; 60% received recommendation from

their healthcare providers for a caesarean section based on their pre-existing medical conditions. 40% were positive that receiving recommendation from their healthcare provider for a caesarean section based on their pre-existing medical conditions influenced their decision for a c-section, while 60% said no; 70% were positive that medical history (e.g., previous caesarean sections) play a role in their decision to opt for a caesarean section, while 30% said no.

Table 3 Influence of socioeconomic factors on the likelihood of undergoing a Caesarean Section

Variables	Frequency	Percentage (%)
Current employment status		
Employed	20	20
Self-employed	70	70
Unemployed	10	10
Total	100	100
Employment status affects your delivery method		
Yes	30	30
No	70	70
Prefer not to say	-	-
Total	100	100
Daily income level		
<#5,000	30	30
#10,000 - 50,000	50	50
#51,000 – 100,000	20	20

Total	100	100
Health insurance that covers the cost of a Caesarean section		
Yes, fully covered	5	5
Yes, partially covered	45	45
No	50	50
Total	100	100
Socioeconomic status (e.g., income, education) influence the choice of delivery method		
Yes	70	70
No	15	15
Not Sure	15	15
Total	100	100

Table 3 shows that 70% of the respondents were self-employed, 20% were employed, while 10% were unemployed; 70% of the respondents negatively indicated that employment status

Discussion

The findings of the current study showed that 35% of respondents had chronic medical conditions like diabetes or hypertension identified before pregnancy, while 70% reported no pregnancy-related complications during their current pregnancy. Additionally, 40% acknowledged that previous surgeries on the uterus or reproductive organs might influence their decision for a caesarean section, with 60% disagreeing. Furthermore, 60% received recommendations from their healthcare providers for a c-section based on pre-existing medical conditions, while 40%

affects their delivery method, while 30% said yes; half of the respondents earn #10,000 - 50,000 daily, 30% earn <#5,000, while 20% earn #51,000 – 100,000 daily.

did not. Lastly, 70% believed that their medical history, including previous c-sections, played a role in the decision to opt for a caesarean section, whereas 30% did not. The findings of the present study are similar to those of previous studies^{8,9}.

Also, there was a weak positive and significant correlation ($r = 0.475$; $p = 0.000$) between pre-existing medical factors and influence the decision for a caesarean section. This implies that as the number or severity of pre-existing medical conditions increases, the likelihood of choosing a c-section also tends to increase. The correlation is statistically significant ($p <$

0.001), suggesting that this relationship is unlikely to be due to chance. However, because the correlation is described as "weak," it implies that while there is an association, it is not very strong, and other factors may also play a significant role in the decision-making process regarding the mode of delivery. However, Giang *et al.*, (2022) discovered similar result.

Socioeconomic factors significantly influence the likelihood of undergoing a caesarean section (c-section). Higher income and education levels often correlate with better access to healthcare and informed decision-making, increasing the likelihood of elective c-sections. Conversely, lower-income individuals may face barriers to quality care. Insurance coverage affects access to surgical options, while geographic location can limit healthcare availability. Cultural beliefs and social support networks also shape decisions around delivery methods. Additionally, disparities in health outcomes related to socioeconomic status can lead to higher rates of complications, further increasing the likelihood of C-sections.

In this study, there was a strong positive and significant correlation ($r = 0.707$; $p < 0.000$) between socioeconomic factors and

likelihood of undergoing a caesarean section. This means that as socioeconomic status improves, such as higher income, better education, or greater access to healthcare, there is a strong tendency for the likelihood of opting for a c-section to increase. The statistical significance ($p < 0.001$) suggests that this relationship is unlikely to be due to random chance, indicating that socioeconomic factors play a meaningful role in the decision to undergo a c-section. Overall, the strong correlation suggests that addressing socioeconomic disparities could impact c-section rates and maternal healthcare decisions.

Conclusion

These findings underscore the necessity for a multifaceted approach to maternal healthcare that addresses these interconnected elements. This will improve decision-making processes and optimize maternal health outcomes through enhanced support and education for women.

References

1. López-Girón MC, Nieto-Calvache AJ, Quintero JC, Benavides-Calvache JP, Victoria-Borrero A, López-Tenorio J. Cesarean scar pregnancy, the importance of immediate treatment. *The Journal of Maternal-Fetal and Neonatal Medicine*, 2022; 35(6):1199-1202.

2. Odongo AA. Determinants of Choice of Cesarean Section Among Women of Child-bearing Age in Kenya. Doctoral dissertation, 2020; University of Nairobi.
3. Byamugisha, J., and Adroma, M. Cesarean Section in Low-, Middle-and High-Income Countries. *Recent Advances in Cesarean Delivery*, 2020.
4. Mumtaz Z, Bhatti A, Salway S. Challenges to achieving appropriate and equitable access to Cesarean section: ethnographic insights from rural Pakistan. *Journal of biosocial science*, 2020; 52(4): 491-503.
5. Swissnoso CB, Marie-Christine E, Stephan HJ, Marschall DP, Hugo SM, Schlegel AS, Laurence SN, Troillet AF, Widmer GZ. Antimicrobial prophylaxis administration after umbilical cord clamping in cesarean section and the risk of surgical site infection: a cohort study with 55,901 patients. *Antimicrobial Resistance and Infection Control*, 2020; 9: 1-9.
6. Link E, Reifegerste D, Klimmt C. Family involvement in the context of chronic diseases: The role of social support in treatment decision-making for surgical procedures. *Journal of Family Research*, 2020; 32(1): 45-71.
7. Safi FA, Doneys P. Exploring the influence of family level and socio-demographic factors on women's decision-making ability over access to reproductive health care services in Balkh province, Afghanistan. *Health care for women international*, 2020; 41(7): 833-852.
8. Giang HTN, Duy DTT, Hieu LTM, Vuong NL, Ngoc NTT, Phuong MT, Huy NT. Factors associated with the very high caesarean section rate in urban areas of Vietnam. *Plos one*, 2022; 17(8): e0273847.
- 9.. Amjad A, Amjad U, Zakar R, Usman A, Zakar MZ, Fischer F. Factors associated with caesarean deliveries among child-bearing women in Pakistan: secondary analysis of data from the demographic and health survey, 2012–13. *BMC*, 2018; 18: 1-9.