

# Factors Contributing to Rising Caesarean Section Rates in Garowe, Puntland Somalia

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## Abstract:

This study employed a cross-sectional survey design to assess the demographic characteristics and caesarean section trends among pregnant mothers visiting Dalab Hospital in Garowe, Puntland, Somalia. Using a sample size of 60 respondents, selected through both simple random and purposive sampling techniques, the research explored variables such as age, marital status, education level, occupation, and type of caesarean section. Results revealed a relatively young population, with most women aged 20–39 years, and a high rate of marital experience. Educational levels varied, with secondary education being the most common, though a significant number lacked formal education. Most participants were housewives or businesswomen, indicating high informal economic involvement. Over half of the caesarean deliveries (53.33%) were emergency procedures, highlighting a potential gap in prenatal risk detection and maternal health services. The study concludes that enhancing reproductive health education, improving antenatal care, expanding educational and economic opportunities for women, and strengthening youth-focused and community health interventions are essential to addressing the observed challenges and improving maternal health outcomes in the region.

**Keywords:** Caesarean Section, Rising Rates, Contributing Factors, Delivery Practices.

## 1.0 Introduction.

This chapter provides a summary of the research on the causes of the increasing rates of caesarean sections in Garowe, Puntland, Somalia. It provides the study's context, emphasizing both local and global trends in caesarean deliveries and the growing concern over their increasing prevalence. The problem statement highlights the need to comprehend the reasons behind the rising rates of caesarean sections in this area as well as the effects on the health of mothers and children. The chapter also outlines the goals of the study, which include determining the medical and non-medical causes, analyzing the involvement of healthcare professionals and maternal decisions, and investigating institutional and policy-related elements. The purpose of the research questions is to direct the investigation into these fields. Also covered is the study's importance, with a focus on how it could influence healthcare regulations and enhance delivery methods. Finally, the study's scope is made clear, concentrating on a few Garowe health institutions and examining trends involving mothers, medical professionals, and administrators during the previous five years.

## 1.1 Objectives of the Study.

- I. To assess the socio-demographic that influencing the decision to perform caesarean sections among Pregnant women in Garowe.
- II. To evaluate the role of healthcare providers and institutional practices in contributing to the rising caesarean section rates.

- III. To examine the perceptions, preferences, and awareness of pregnant women in Garowe regarding caesarean versus vaginal delivery

## **Literature Review.**

### **Conceptual review.**

Globally, the number of caesarean sections (C-sections) has been increasing, and sociodemographic factors are becoming more widely acknowledged as major contributors to this trend. These elements influence women's access to health services, clinical judgments, preferences, and health outcomes throughout pregnancy and childbirth. There is a substantial correlation between higher incidence of C-sections and older mothers, especially those over 35, due to obstetric complications such as gestational diabetes and preeclampsia, which frequently require surgical intervention. A multi-country investigation by Yisma et al. (2019) found that older mothers in both urban and rural settings had significantly higher odds of undergoing a C-section. Education also plays a significant role; women with secondary or higher education levels are more likely to have caesarean deliveries than those with no formal education. Educated women are generally more proactive in seeking health information, communicating with healthcare professionals, and making informed delivery choices, and in some cases, they may even prefer elective C-sections for reasons of convenience or perceived safety (Adde et al., 2020).

Socioeconomic status has been associated with increased C-section rates, particularly among women from higher-income households and those accessing private healthcare institutions. A WHO global study by Betrán et al. (2021) indicated that wealthier women were more likely to undergo C-sections, even when not medically indicated. Urban residency is another contributing factor, as cities tend to offer better healthcare infrastructure and access to skilled providers. Boatin et al. (2022) noted that in several low- and middle-income countries, urban women were almost twice as likely to have caesarean deliveries compared to rural women. Additionally, working women—especially those in formal employment—are more likely to access healthcare services, including elective procedures, and married women tend to begin prenatal care earlier and more regularly, influencing delivery choices (Lumbiganon et al., 2022). Although localized studies are scarce in Somalia, including Garowe, it is likely that these global sociodemographic patterns are also evident regionally, due to similar healthcare challenges and cultural norms. Factors such as increased access to private clinics, urbanization, and evolving maternal preferences likely contribute to the region's rising C-section rates.

The rising rates of caesarean deliveries are not solely influenced by patient-related factors; healthcare providers and institutional practices also play a critical role. While many C-sections are medically necessary, evidence suggests that a substantial number are driven by provider preferences and systemic constraints. Provider decision-making may be influenced by convenience, perceived legal risks, or scheduling preferences. Furthermore, a lack of standardized guidelines across healthcare facilities often results in inconsistent criteria for recommending surgical deliveries. The training and experience of healthcare professionals also significantly impact delivery choices. In settings where obstetricians and midwives lack adequate training in assisted vaginal delivery techniques, such as vacuum extraction or forceps, C-sections may be performed by default (Miller et al., 2020). Institutional factors, including the availability of surgical facilities, staffing levels, and the type of hospital, also play a role. Private hospitals, in particular, often report higher C-section rates due to financial incentives and consumer-driven healthcare models (Neuman et al., 2021). Public hospitals facing overcrowding or lacking 24/7 obstetric support may also opt for C-sections as a risk-avoidance measure. Additionally, weak documentation systems and limited auditing of delivery practices can hinder accountability. Boatin et al. (2022) found that regular clinical audits in LMICs led to reductions in unnecessary C-sections. Although specific studies from Somalia remain limited, anecdotal evidence and regional trends suggest that insufficient labor monitoring tools, under-resourced public health facilities, and the expansion of private clinics may be contributing factors in Garowe and similar settings.

Cultural beliefs, levels of awareness, and personal preferences also influence how pregnant women perceive caesarean versus vaginal deliveries. In many contexts, vaginal birth is preferred due to its association with quicker recovery, fewer complications, and cultural acceptance. Nonetheless, caesarean delivery is increasingly seen as a safer or more convenient option, especially when advised by healthcare professionals (Kabakyenga et al., 2011). The quality of prenatal education and the clarity of communication between pregnant women and healthcare providers have a significant effect on women's knowledge and choices. In

regions like Garowe, where access to accurate health information and comprehensive prenatal services may be limited, women's ability to make informed decisions can be compromised (Moyer & Mustafa, 2013). This highlights the importance of improving maternal health education and strengthening provider–patient communication to support informed choices about delivery methods.

## **Empirical Review**

The global rise in caesarean section (C-section) rates has become a pressing public health concern. The World Health Organization (2015) warns that when C-section rates exceed 10–15%, they often do not correspond with improved maternal or neonatal outcomes. In low- and middle-income countries, particularly in sub-Saharan Africa, this increase is marked by sharp disparities between urban and rural populations. Boatin et al. (2018) found that institutional deliveries and surgical births were more common in urban centers, where healthcare access, infrastructure, and economic conditions are generally better. Although no national statistics currently document C-section trends in Somalia, regional reports and emerging patterns suggest similar trajectories, especially in cities like Garowe, where urbanization and private healthcare expansion are rapidly transforming maternal health services.

Empirical studies have consistently shown that sociodemographic factors are significant determinants of C-section rates. Maternal age is a well-established factor, with older women, particularly those over 35, more likely to experience obstetric complications requiring surgical intervention. Yisma et al. (2019), in a multicountry analysis, confirmed that older maternal age is associated with higher C-section likelihood across both urban and rural settings in Africa. Education and socioeconomic status also strongly influence delivery method. Women with secondary or tertiary education levels, as well as those from higher-income households, have been shown to opt for or be offered C-sections more frequently than less educated or poorer women. Betrán et al. (2021) argue that wealthier, educated women are more likely to seek delivery in private facilities, where elective surgical births are common. These findings suggest that as education and income levels rise in cities like Garowe, corresponding increases in C-section rates are likely.

Healthcare provider behavior and institutional practices are also central to the increasing C-section rates. Several studies have found that many C-sections are not performed due to medical necessity but rather because of provider preferences, risk aversion, and systemic inefficiencies. Miller et al. (2020) explain that inadequate training in assisted vaginal delivery techniques can push clinicians toward defaulting to surgery, especially in facilities with poor labor management protocols. Neuman et al. (2021) further report that in private healthcare settings, financial incentives, reduced litigation risk, and scheduling convenience lead to higher C-section rates. These findings are critical for understanding the Somali context, where the growth of private maternal health services, particularly in urban areas like Garowe, may mirror global patterns. The absence of standardized guidelines and under-regulated practices may further increase surgical deliveries even in the absence of clinical indications.

Institutional factors, such as the availability of surgical infrastructure, staffing levels, and labor monitoring systems, play an equally important role. Hospitals with 24-hour obstetric teams, well-equipped theaters, and adequate human resources are more likely to perform C-sections than under-resourced public facilities. Documentation and monitoring systems, or the lack thereof, have also been found to affect C-section trends. Boatin et al. (2022) found that routine audits of delivery records in several LMICs significantly reduced the rate of unnecessary caesarean deliveries. In contrast, where clinical audits and decision-making oversight were weak or absent, surgical births increased disproportionately. While Somalia lacks published hospital audit data, anecdotal evidence from Garowe indicates that fragmented documentation, especially in small clinics and private maternity centers, may be enabling overuse of surgical interventions.

Maternal awareness, preferences, and cultural norms are increasingly recognized as influential in determining delivery methods. In Uganda, Kabakyenga et al. (2011) found that most women preferred vaginal birth due to its association with quicker recovery and cultural acceptability. However, when advised by trusted healthcare professionals or exposed to antenatal education, some women viewed caesarean birth as a safer or more modern alternative. Moyer and Mustafa (2013) emphasized that low health literacy and poor communication between providers and patients limited women's capacity to make informed decisions about delivery options. In Garowe, where formal maternal education programs are limited and many women rely heavily on provider guidance, such patterns likely exist. This may result in an overreliance on healthcare professionals' recommendations, with reduced maternal participation in choosing between vaginal and surgical birth.

Although Somalia lacks comprehensive empirical studies on this subject, the patterns observed globally and in other African contexts offer valuable insights. The convergence of rising maternal education, increasing urbanization, a growing private health sector, provider preferences, and limited patient education likely contribute to the rising rates of caesarean deliveries in Garowe. More localized studies are needed to quantify these trends, but existing empirical literature provides a strong foundation for understanding the multifactorial dynamics influencing C-section use in the region.

## 1.2 Research Design and Methodology. Research Design.

This study will employ a cross-sectional survey design to collect data at a single point in time from a defined population, allowing for the assessment of current conditions and relationships among variables.

### 3.2. Study Population

The target population of this study will be **Pregnant Mothers** Visiting **Dalab Hospital** in Garowe Puntland Somalia. Target population of this study will be 70 and the sample size selected from it **Dalab Hospital** is selected because there many pregnant mothers attend to get healthcare service which researcher wants to collect data.

### 3.4. Sample Size

The sample size for this study will be 60 Pregnant Mothers. This number is determined using solvent formula for sample size which states.

Formula States: 
$$n = \frac{N}{1 + N(e)^2}$$

Where **n**= Sample size , **N** = Target population, and **e**= level of significance.

$$n = \frac{70}{1 + 70(0.05)^2} \quad n = \frac{70}{1 + 70(0.0025)} \quad n = 60 \text{ Respondents}$$

### 3.5 Sample Procedure

The researcher will use a number of sampling techniques, including random sampling (simple random sampling techniques) and non-random sampling (purposive sampling techniques).

#### 3.5.1 Simple Random sampling

Simple random sampling is a widely utilized sampling method in quantitative studies with survey instruments. It is asserted that simple random sampling is favorable in homogeneous and uniformly selected populations Adolph Jenson (2013).

Additionally, the researcher will employ the random sample technique. To ensure fair representation, the chosen participants in a few chosen hospitals will be chosen at random. We shall presume that every respondent has important knowledge about the research topic. We will contact respondents who are interested to participate.

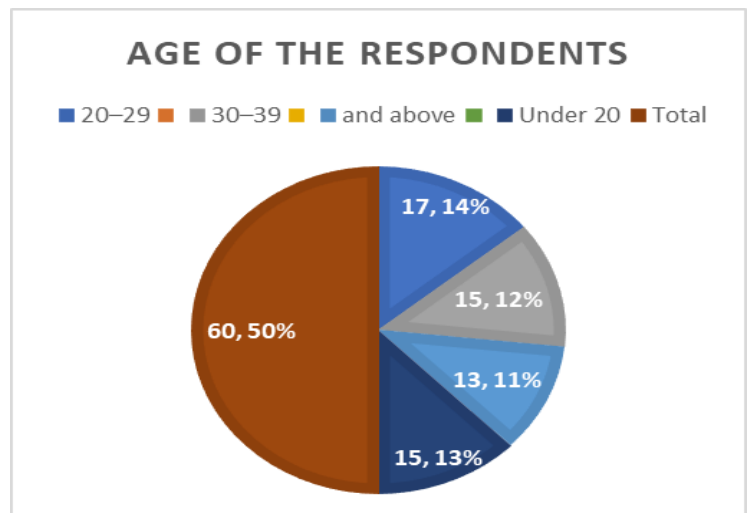
#### 3.5.2 Purposive sampling

According to S.R. Myneni (2015), purposeful sampling is the process of choosing several sets of components with the goal of providing an estimate or percentage for the personal characteristics that are the focus of the data collection that is roughly the same as the population. Because the respondents are thought to be highly informed on maternal health issues and the variables influencing the increased rates of caesarean sections in Garowe, Puntland, Somalia, the local communities of a few chosen hospitals in Garowe were purposefully chosen.

## Results:

**Table 1**

| Age of the respondent |       |         |
|-----------------------|-------|---------|
| Age                   | Freq. | Percent |
| 20–29                 | 17    | 28.33   |
|                       |       |         |
| 30–39                 | 15    | 25.00   |
|                       |       |         |
| and above             | 13    | 21.67   |
|                       |       |         |
| Under 20              | 15    | 25.00   |
| Total                 | 60    | 100.00  |

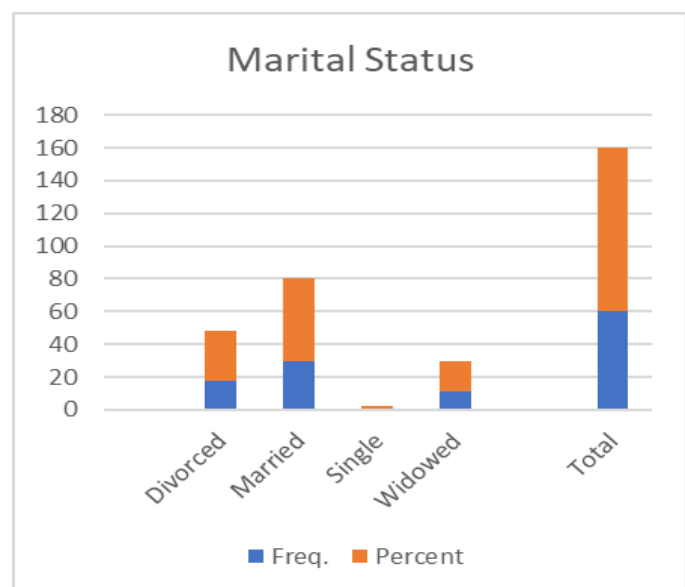


### Interpretation

The table presents the age distribution of 60 individuals. The largest age group is 20–29 years, representing 28.33% (17 individuals) of the total. Both the 30–39 age group and those under 20 each account for 25.00% (15 individuals each), while individuals aged 40 and above make up the smallest group at 21.67% (13 individuals). This indicates a relatively balanced age distribution, with a slight predominance of individuals in their twenties.

**Table 2**

| Marital Status |       |         |
|----------------|-------|---------|
| Status         | Freq. | Percent |
| Divorced       | 18    | 30.00   |
| Married        | 30    | 50.00   |
| Single         | 1     | 1.67    |
| Widowed        | 11    | 18.33   |
|                |       |         |
| Total          | 60    | 100.00  |



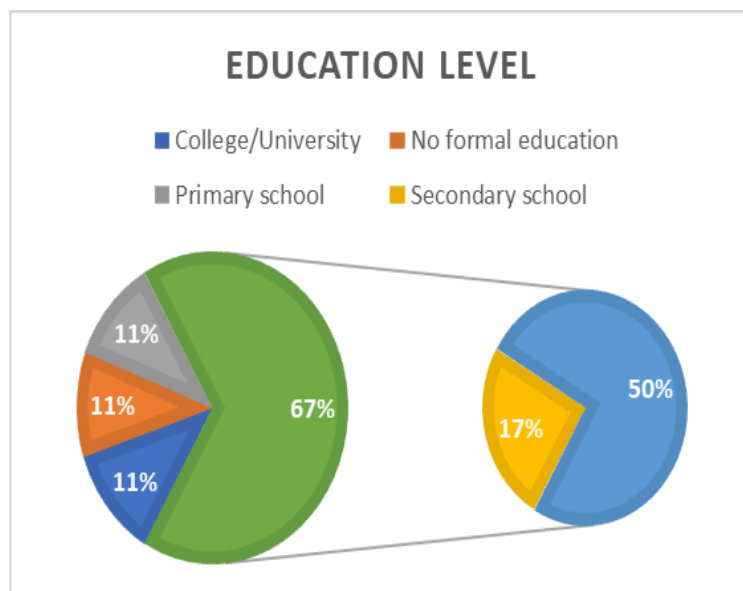
### Interpretation

The table shows the marital status distribution of 60 individuals. Half of the participants are married, making up the largest group at 50.00% (30 individuals). Divorced individuals account for 30.00% (18 individuals), followed by widowed individuals at 18.33% (11 individuals). Only one person is single, representing the smallest proportion at 1.67%. This suggests that the majority of the group has been or is currently in a marital relationship, with very few remaining single.



**Table 3**

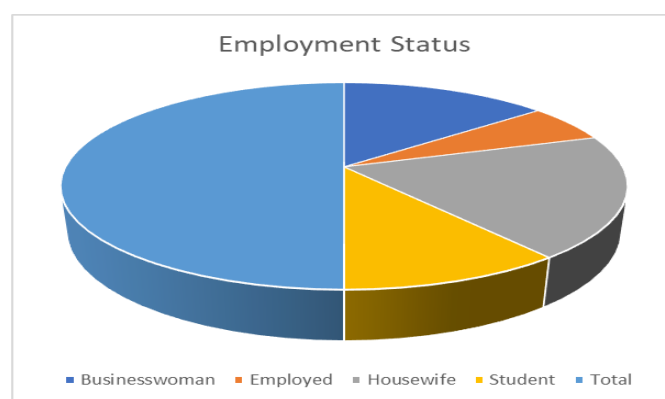
| Education Level     |       |         |
|---------------------|-------|---------|
| Educational Level   | Freq. | Percent |
| College/University  | 14    | 23.33   |
| No formal education | 13    | 21.67   |
| Primary school      | 13    | 21.67   |
| Secondary school    | 20    | 33.33   |
| Total               | 60    | 100.00  |



The table outlines the educational levels of 60 individuals. The largest group, 33.33% (20 individuals), has attained a secondary school education. Those with college or university education represent 23.33% (14 individuals), while both individuals with no formal education and those who completed primary school each account for 21.67% (13 individuals). This indicates that while a significant portion has reached at least secondary education, a considerable number still lack higher education or any formal schooling.

**Table 4**

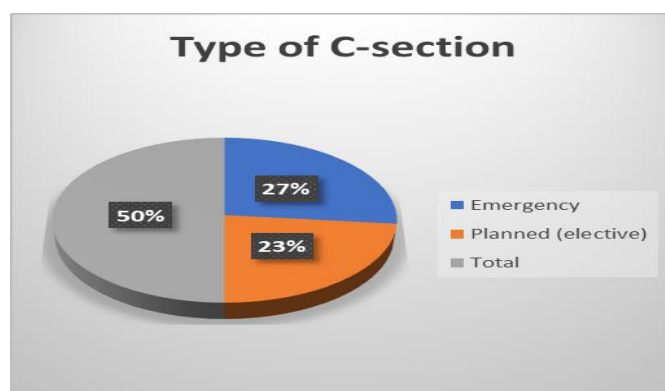
| Occupation Status |       |         |
|-------------------|-------|---------|
| Occupation        | Freq. | Percent |
| Businesswoman     | 17    | 28.33   |
| Employed          | 7     | 11.67   |
| Housewife         | 23    | 38.33   |
| Student           | 13    | 21.67   |
| Total             | 60    | 100.00  |



The table displays the occupational status of 60 individuals. The largest group consists of housewives, making up 38.33% (23 individuals), followed by businesswomen at 28.33% (17 individuals). Students account for 21.67% (13 individuals), while the smallest group is the employed category, representing only 11.67% (7 individuals). This suggests that a majority of the individuals are either engaged in domestic roles or self-employment, with fewer participating in formal employment or currently pursuing education.

**Table 5**

| Category of C section In terms of duration |             |         |
|--------------------------------------------|-------------|---------|
| Was the Caesarean section?                 | Frequencies | Percent |
| Emergency                                  | 32          | 53.33   |
| Planned (elective)                         | 28          | 46.67   |
| Total                                      | 60          | 100.00  |



## Interpretation

The table shows the type of Caesarean section undergone by 60 individuals. A slight majority, 53.33% (32 individuals), had emergency Caesarean sections, while 46.67% (28 individuals) underwent planned or elective procedures. This indicates that more than half of the Caesarean deliveries were unplanned and performed due to urgent medical reasons, reflecting the common need for emergency interventions during childbirth.

## Discussion

The study involved 60 individuals and revealed diverse demographic characteristics. The age distribution was fairly balanced, with the largest group aged 20–29 years (28.33%), followed closely by those under 20 and 30–39 (25% each), while the smallest group was those aged 40 and above (21.67%). Marital status showed that half were married (50%), followed by divorced (30%) and widowed (18.33%), with very few being single (1.67%). In terms of education, the majority had secondary education (33.33%), while smaller but nearly equal proportions had college/university (23.33%), no formal education, or only primary education (both 21.67%). Regarding occupation, housewives were the most common (38.33%), followed by businesswomen (28.33%), students (21.67%), and employed individuals (11.67%). Finally, slightly more than half of the Caesarean sections were emergency cases (53.33%), while the rest were planned (46.67%), highlighting the prevalence of urgent surgical deliveries among participants.

## Conclusion

In conclusion, the findings highlight a relatively young population with most participants between the ages of 20 and 39, and a high rate of marital experience, with the majority being married or divorced. Educational attainment varies, with a significant portion having reached secondary education, though a notable number still lack formal education. Occupationally, most individuals are engaged in domestic roles or informal work, such as housewives and businesswomen, with fewer in formal employment. Additionally, the high proportion of emergency Caesarean sections indicates a considerable reliance on urgent medical interventions during childbirth, underscoring potential gaps in prenatal care and early risk detection.

## Recommendations

### 1. Enhance Reproductive Health Education and Family Planning Services:

Given the high rate of marriage and divorce among relatively young women, it is essential to strengthen access to reproductive health education and counseling. Programs should focus on family planning, healthy relationships, and the psychosocial impact of early and unstable marriages.

### 2. Strengthen Maternal Health Services and Emergency Obstetric Care:

The significant number of emergency Caesarean sections suggests inadequate antenatal risk detection and referral systems. Healthcare facilities should invest in early screening, skilled birth attendants, and timely referrals to reduce avoidable emergencies during childbirth.

### 3. Promote Female Education and Adult Literacy Programs:

With a notable percentage of women lacking formal education, efforts should be made to expand adult literacy and re-entry programs targeting women who missed out on primary or secondary schooling. This could empower them economically and improve health literacy, especially around maternal health and childcare.

### 4. Support Vocational Training and Economic Empowerment for Women:

The high proportion of housewives and businesswomen reflects informal economic participation. Tailored vocational training, access to microfinance, and business development support would enhance income generation and reduce dependency, particularly for widowed or divorced women.

### 5. Increase Youth-Focused Interventions and Peer Education:

Given the sizable group under the age of 29, youth-targeted health education—particularly on sexual and reproductive health, life skills, and educational motivation—should be scaled up to guide informed life choices and reduce early pregnancies and marriages.

### 6. Improve Health Communication and Community Awareness:

Community-level education programs should address the importance of antenatal care, early danger sign recognition during pregnancy, and the risks associated with delayed emergency response. This could help reduce the high reliance on emergency C-sections.

## 7. **Encourage Research and Policy Advocacy:**

Policymakers should invest in further qualitative studies to understand the underlying causes of emergency C-sections, educational disparities, and occupational challenges among women. Data-driven advocacy can help develop inclusive policies that address gender, education, and health equity.

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