

## **Factors Influencing Maternal Decision-Making on Childbirth Methods: A Cross-Sectional Study at Meru Level V Hospital, Kenya.**

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### **Abstract**

Rising global rates of cesarean section (CS), often exceeding the World Health Organization recommended 10–15%, pose a public health concern. In Meru County, Kenya, there is limited evidence on the factors influencing women's choice of delivery method despite improved access to maternal healthcare. This study examined determinants of childbirth method choice among women attending antenatal care at Meru Level V Hospital. A cross-sectional study of 300 expectant mothers was conducted using structured questionnaires. Data were analysed using the Statistical Package for the Social Sciences, applying descriptive and inferential statistics. The mean age was 28.6 years (range: 19–42). Most participants had a tertiary education (73%), while 2% had a primary education. Vaginal delivery was preferred by 53% of respondents, though CS rates were increasing. Key determinants included social status, fear of labour pain, and education level, which influenced awareness of risks such as infection, maternal complications, healing time, and costs. Social factors relatives' opinions, family encouragement, prior experiences, and media also shaped decisions. In conclusion, childbirth decisions are influenced by knowledge, perceptions, and social dynamics. Strengthening antenatal education and counselling is essential to support informed choices and optimise delivery outcomes.

**Keywords:** *Maternal decision-making, Delivery methods, Cesarean section, Antenatal care, Kenya.*

## **1.0 Introduction**

Childbirth is a significant life event shaped by individual preferences, experiences, and contextual factors. The choice of delivery method vaginal delivery or cesarean section (CS) is a key determinant of maternal experience and outcomes. Vaginal delivery involves the natural expulsion of the fetus through the birth canal, while CS is a surgical procedure performed through an abdominal and uterine incision. Traditionally, cesarean sections were conducted for medical indications such as fetal distress, obstructed labour, or maternal complications. However, the increasing occurrence of cesarean delivery on maternal request (CDMR) reflects a shift toward patient autonomy and shared decision-making in maternal healthcare (Schantz et al., 2021).

Interrelated constructs, including knowledge, attitudes, and social influences, influence maternal decision-making regarding delivery methods. Women's understanding of the risks and benefits of each delivery option, perceptions of pain and safety, prior childbirth experiences, and external influences such as family, healthcare providers, and media play a critical role in shaping preferences. These factors underscore the importance of effective antenatal education and counselling to support informed decision-making.

Globally, rising CS rates often exceeding the World Health Organisation recommended threshold of 10–15% have raised concerns about potential overuse (WHO, 2015). In Kenya, CS rates have increased from 10.9% in 2000 to approximately 16.4%, with similar upward trends observed in facility-based deliveries (KDHS, 2014; WHO, 2015). While improved access to maternal healthcare services contributes to this increase, it also highlights the need to better understand the factors influencing

women's delivery choices.

Despite relatively high antenatal care coverage in Meru County (approximately 80%), there is limited evidence on the determinants of delivery method choice at the facility level. Given that critical decisions are often shaped within healthcare settings, this gap constrains the development of targeted interventions to promote appropriate and informed delivery choices. This study, therefore, aimed to examine the factors influencing women's choice of delivery method among expectant mothers attending antenatal care at Meru Level V Hospital, specifically by assessing their knowledge of delivery methods, exploring maternal attitudes toward available options, identifying social influences on decision-making, and determining the association between socio-demographic characteristics and preferred mode of delivery.

## **2.0 Materials and Methods**

A descriptive cross-sectional study was conducted over a period of three months among 300 expectant mothers attending the antenatal care (ANC) clinic at Meru Level V Hospital in Meru County. A systematic random sampling technique was used to recruit participants from women attending the ANC clinic during the study period. The inclusion criteria comprised pregnant women attending ANC services at the facility who were willing to participate and provided informed consent, while women who were critically ill, unable to respond to the questionnaire, or declined consent were excluded.

Data were collected using a structured questionnaire developed based on relevant literature and study objectives. The tool captured socio-demographic characteristics, preferred childbirth method, and factors influencing decision-making. The questionnaire was pre-tested in a similar setting to ensure

validity and reliability, and necessary adjustments were made before data collection. Both quantitative and qualitative data were collected. Trained research assistants administered the questionnaires through face-to-face interviews under close supervision by the principal investigator to ensure data quality and consistency.

*“The findings of the study indicate that the majority of respondents preferred natural (vaginal) delivery (57%) compared to cesarean section (43%)”*

Data were entered and analysed using the Statistical Package for the Social Sciences. Descriptive statistics (frequencies, percentages, and means) were used to summarise the data, while inferential analysis using the chi-square test was conducted to determine associations between variables. Statistical significance was set at  $p < 0.05$ . Ethical approval to conduct the study was obtained from the Meru University of Science and Technology Institutional Research

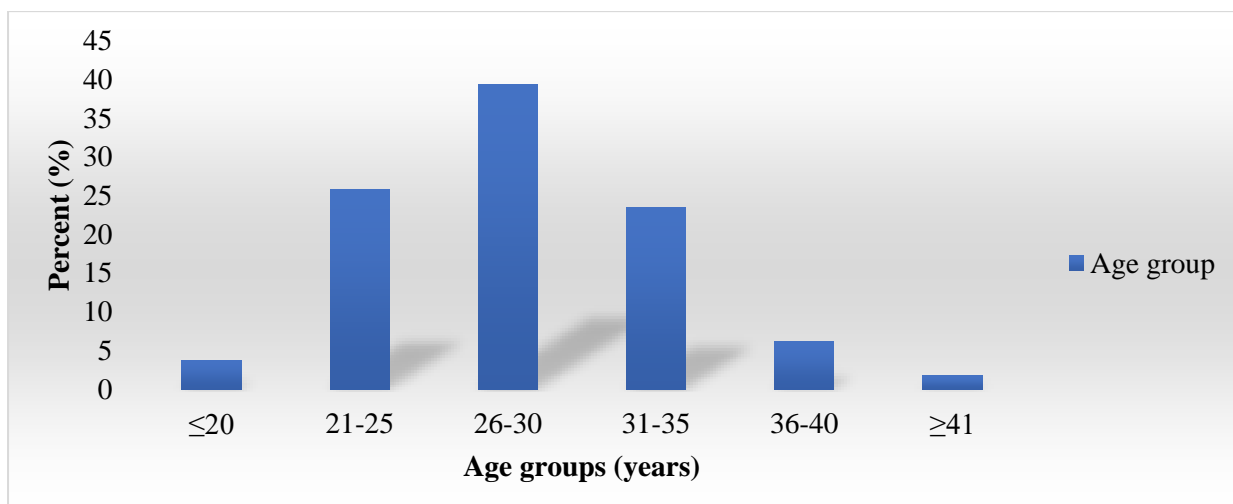
Ethics Committee. Permission was also sought from the management of Meru Level V Hospital. Informed consent was obtained from all participants before data collection, and participation was voluntary. Confidentiality and anonymity were ensured by using coded identifiers instead of personal information, and data were securely stored with access limited to the research team.

### 3.0 Results and Discussion

In this study, a total of 300 attending antenatal care (ANC) clinic at Meru Level V Hospital were enrolled, with an impressive participation rate of 98%, as 295 women completed the questionnaire interviews and focus group discussions. The ages of the participants ranged from 19 to 42 years, with a mean age of  $28.61 \pm 5.02$  years. The demographic distribution revealed that the majority of the women were in the age group of 26-30 years, accounting for 39% of the participants. This was followed by the 21-25 age group, which comprised 26% of the sample. Notably, only 2% of the participants were over 40 years old, indicating a younger cohort overall. The youngest participant was 19 years old and had minimal education, having completed less than 12 years of schooling (Figure 1).

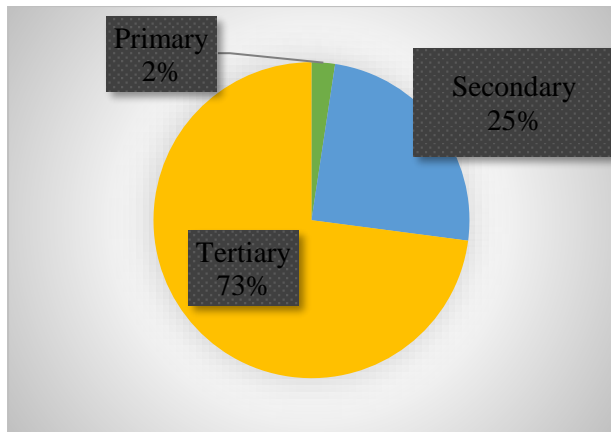
**Figure 1**

*Age distribution of women attending ANC care at Meru Level V Hospital*



Most of the respondents indicated the level of education attained at the college level (73%), followed by secondary education (25%), while primary level of education (2%) was the least (Figure 2).

**Figure 2**  
*Level of education of women attending ANC at Meru Level V Hospital*



This finding collaborates with studies done by Ghotbi et al. (2014) on the level of education and a study by Kamal (2013) on

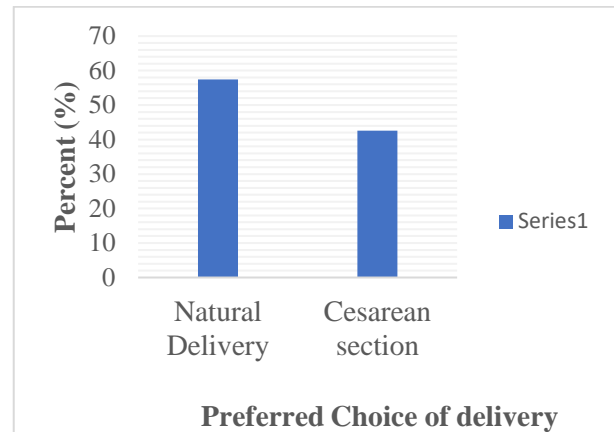
the association between residency and factors associated with the choice of childbirth. The percentage of women preferring childbirth by C-section increased with mothers' level of education, similar to national data from Kenya (34%). The preference for childbirth in relation to parity status and residency compared favourably with data obtained in Kenya, with a trend indicating an increase in C-section from 2014 (9%) to 2022 (17%), a probable compound effect of the various sociodemographic characteristics (KDHS, 2022).

***Preferred choice of delivery among women attending ANC at Meru Level V Hospital***

Overall, 170 (58%) of the respondents preferred natural delivery, while 125 (42%) preferred cesarean section, and they were not significantly different ( $p > 0.05$ ) (Figure 3). A study in Sweden compared two groups of pregnant

women regarding their preference for C-section and natural delivery. The result also revealed that anxiety for the health of their baby and their own life were the main reasons for selecting C-section (Wiklund, 2007).

**Figure 3**  
*Respondent's preferred mode of delivery*



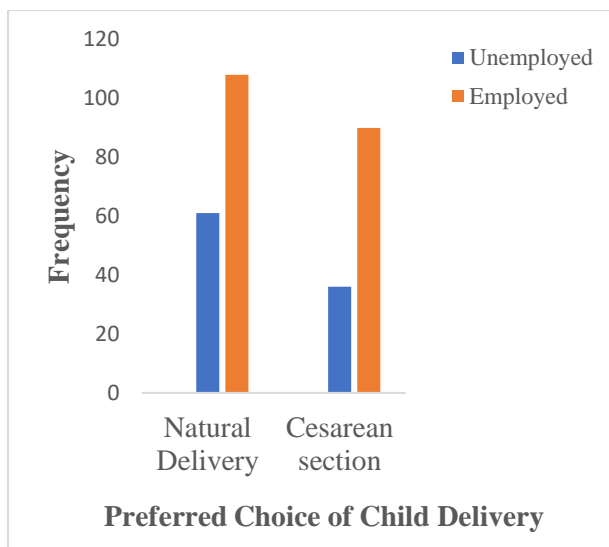
***Associations between employment status and preferred choice of childbirth among women attending ANC at Meru Level V Hospital***

The findings presented indicate that employment status does not have a significant effect on the preferred mode of delivery among women attending antenatal care (ANC) at Meru Level V Hospital, as evidenced by a p-value greater than 0.05 and a chi-square statistic of  $X^2 = 1.85$ . Despite the lack of statistical significance, it is noteworthy that a majority of employed women expressed a preference for natural birth delivery (55%), while a slightly lower percentage opted for cesarean sections (45%). In contrast, among unemployed women, the preference for natural delivery was even more pronounced, with 63% choosing this method compared to 37% who preferred cesarean section. These results suggest that, regardless of employment status, a greater inclination towards natural childbirth exists among the women surveyed. The data, illustrated in Figure 5, highlights the tendency for both employed and unemployed women to

favour natural delivery over cesarean sections, although the difference in preferences does not reach statistical significance. This context helps in understanding the factors influencing delivery choices and emphasises the need for further research to explore the reasons behind these preferences, particularly in relation to employment status.

**Figure 3**

*Distribution of preferred choice of delivery by employment status among women attending ANC at Meru Level V Hospital*

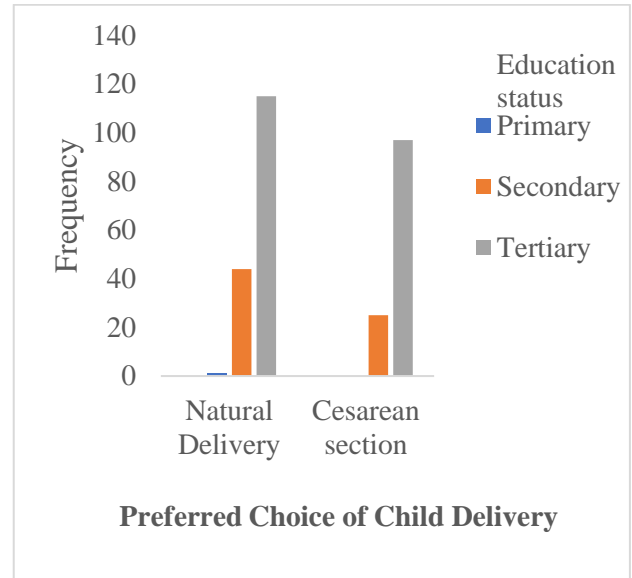


***Association of preferred choice of delivery compared with the education status of women attending ANC at Meru Level V Hospital***

The level of education did not significantly influence the preferred choice of child delivery ( $p > 0.05$ ;  $X^2 = 7.06$ ), among women attending ANC at Meru Level V Hospital. Most of the women educated at the tertiary level preferred natural birth delivery 115 (52.5%) compared with those who preferred cesarean section 97(44.3%). Among those with a secondary level of education, 44 (45.3%) preferred natural delivery compared to 25 (25.8%) who preferred cesarean section (Figure 5).

**Figure 4**

*Distribution of preferred choice of delivery by level of education among women attending ANC at Meru Level V Hospital*



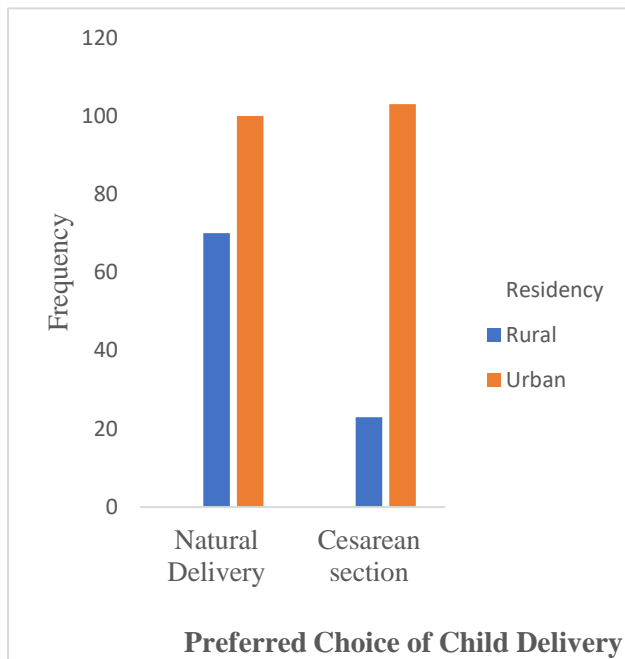
This finding collaborates with studies done by Ghotbi et al. (2014) on the level of education and a study by Kamal (2013) on the association between residency and factors associated with the choice of childbirth. The percentage of women preferring childbirth by C-section increased with mothers’ level of education, similar to national data from Kenya (34%).

***Comparison between the preferred choices of delivery and the residence of women attending ANC at Meru Level V Hospital***

The residence significantly influenced the preferred choice of child delivery ( $p < 0.05$ ;  $X^2 = 17.6$ ), among women attending ANC at Meru Level V Hospital. Women residing in urban areas were better informed on the choice of child delivery, with most preferring cesarean section 103, 35%) compared to 100 (34%) who preferred natural childbirth. Women from rural areas had a greater preference for natural childbirth 70 (24%) and least preferred cesarean section 22 (7%) as a choice of delivery (Figure 6).

**Figure 5**

*Distribution of the preferred choice of child delivery compared to the residency status of participants*



***Preferred choice of delivery compared with parity status of women attending ANC at Meru Level V Hospital***

The parity status significantly influenced the preferred choice of childbirth among women attending the antenatal care (ANC) clinic at Meru Level V Hospital ( $p < 0.05$ ;  $X^2 = 14.7$ ). A notable finding was that a relatively high number of respondents classified as primigravida expressed a preference for natural child delivery, with 99 women (34%) selecting this option. In contrast, only 71 women (24%) in the multigravida category indicated a preference for natural delivery.

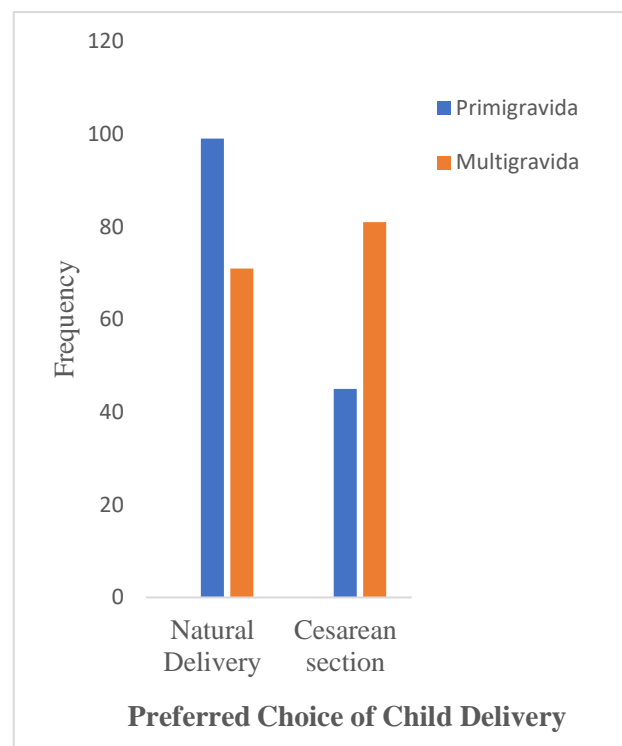
On the other hand, a significant majority of multigravida women expressed a preference for cesarean section delivery, with 80 participants (27%) opting for this method, compared to only 45 primigravida women (15%) who chose cesarean delivery.

These results highlight the impact of parity on delivery preferences, suggesting that women’s

previous childbirth experiences may play a crucial role in informing their choices. Understanding these preferences can aid healthcare providers in offering tailored counselling and support for expectant mothers based on their individual circumstances and experiences. (Figure 7).

**Figure 6**

*Distribution of preferred choice of delivery compared to parity among women attending ANC at Meru Level V Hospital*



***Knowledge towards the preferred choice of child delivery***

A significant percentage of participants exhibited knowledge about various aspects related to maternal delivery choices. Participants were knowledgeable about the risks of infection associated with different delivery options, the maternal complications linked to the choice of delivery (67%), the healing time after delivery (62%), and associated changes in reproductive health (76%) for different choices of delivery method (Table 1). The findings of

studies done in Nepal and Bangladesh on levels of maternal knowledge have shown similar trends (Anshumala et al., 2018). Pain associated with delivery choices is one of the most feared aspects of childbirth, especially with primigravida women (Onchonga, 2020). In this study, there was a poor understanding of the pain associated with different delivery options (90%), which suggests that the participants had limited awareness in this regard.

In this study, the findings disclose that respondents had almost adequate knowledge (63%) about the occurrence of childbirth complications through cesarean section compared to natural delivery. A study in Ghana observed that maternal risks associated with cesarean delivery and the health of the baby were a major concern among respondents (Dorkenoo & Abor, 2021).

**Table 1**

*Participants’ responses to questions relating to maternal knowledge towards preferred child delivery*

Questions on knowledge	Don't know	Agree	Disagree	Expected Answer
Cesarean delivery is less painful than a normal natural delivery	N 38 (%) (12.7%)	230 (76.9%)	31 (10.4%)	Agree
The infection risk of CS is higher than normal natural delivery	N 86 (%) (28.8%)	200 (66.9%)	13 (4.3%)	Agree
Respiratory disorders in babies born to CS are more than those of a natural delivery.	N 12 (%) (4.0%)	189 (63.0%)	99 (33.0%)	Disagree
Maternal complications of CS are greater than those of a normal natural delivery.	N 83 (%) (28.0%)	198 (66.9%)	15 (5.1%)	Agree
CS takes longer to heal than a normal natural delivery	N 15 (%) (5.1%)	184 (62.0%)	98 (33.0%)	Agree
CS birth will not interfere with my genitalia more than a natural delivery	N 68 (%) (23.0%)	3 (1.0%)	225 (76.0%)	Disagree
Natural delivery is cheaper than CS.	N 12 (%) (4.1%)	273 (93.2%)	8 (2.7%)	Agree

***Attitudes towards the preferred choice of child delivery***

A significant proportion of the participants (73%) expressed their concerns regarding complications associated with cesarean section delivery. Additionally, an overwhelming majority (92%) believed that experiencing labour pain was an essential aspect of giving birth. The vast majority of respondents (95%) considered childbirth to be a natural process and recognised the significance of the choice to undergo a cesarean delivery in influencing the date of birth (82%). A considerable majority of the respondents, comprising 104 individuals

(71%), expressed their agreement regarding a woman's right to choose a delivery method regardless of medical complications. A study by Dorkenoo and Abor (2021) revealed similar findings, where the majority of the participants were of the view that any woman can have a caesarean section by choice and that caesarean section births are uncommon or reserved only for those with medical issues. The attitude on the options to undergo a cesarean section to influence the date of birth and the right to choose a delivery method even in the absence of medical complications was agreed by the majority of respondents. This is unlike a study outcome in Iran, where 71% of the women

believed that only the physician should determine the choice of delivery (Ghotbi et al., 2014). In Singapore, most participants (71.3%) of women stated that they should have the right to choose their delivery method (Yamasmit & Chaithongwongwatthana, 2012).

When it comes to the labour process itself, over 50% of participants did not express fear of childbirth and were eager to give birth naturally

(55%). Additionally, a significant portion of respondents (70%) stated that they would not feel ashamed with a natural delivery (Table 2). A study by Dorkenoo and Abor (2021) revealed similar findings, where the majority of the participants were of the view that any woman can have a caesarean section by choice and that caesarean section births are uncommon or reserved only for those with medical issues.

**Table 2**

*Participants' responses to questions relating to attitudes towards the preferred choice of child delivery*

Questions on attitudes	Yes N (%)	No N (%)	I don't know N (%)
1. I am afraid of cesarean section complications	107 (72.8%)	37 (25.2%)	3 (2.0%)
2. I do not want a CS scar on my abdomen	70 (47.9%)	75 (51.4%)	1 (0.7%)
3. I am worried that labour pain will be very intense	70 (47.9%)	73 (50.0%)	3 (2.1%)
4. I think I will be able to handle the pain of childbirth	88 (59.9%)	57 (38.8%)	2 (1.4%)
5. I am fearful of the labour process	65 (44.5%)	80 (54.8%)	1 (0.7%)
6. I would prefer to avoid the pain of childbirth by having a CS	52 (35.1%)	94 (63.5%)	2 (1.4%)
7. Labour pain is a necessary part of childbirth	134 (91.8%)	9 (6.2%)	3 (2.1%)
8. I believe it is a woman's right to choose to have a CS even if there are no medical complications	104 (70.7%)	39 (26.5%)	4 (2.7%)
9. Delivering my baby by the scheduled CS is convenient for me	63 (42.6%)	78 (52.7%)	7 (4.7%)
10. The surgical procedure involved in a CS does not worry me	39 (26.5%)	56 (38.1%)	52 (35.4%)
11. I am afraid of what the labour and delivery process will do to my body	26 (17.9%)	73 (50.3%)	46 (31.7%)
12. Having children by CS is less embarrassing than ND	37 (25.2%)	94 (63.9%)	16 (10.9%)
13. A CS birth is better because it allows one to choose the day of birth	120 (81.6%)	22 (15.0%)	5 (3.4%)
14. I don't think I would be embarrassed by an ND birth	38 (25.9%)	103 (70.1%)	6 (4.1%)
15. Childbirth is a normal process	139 (94.6%)	8 (5.4%)	0 (0.0%)
16. Changes that might occur to a woman after ND concern me	85 (57.8%)	19 (12.9%)	43 (29%)

#### **4.0 Conclusion**

The findings of the study indicate that the majority of respondents preferred natural (vaginal) delivery (57%) compared to cesarean section (43%). This suggests an increasing prevalence of cesarean section relative to previously reported levels in Meru and neighboring counties. According to the Kenya Demographic and Health Survey (KDHS, 2022), the national average for cesarean deliveries increased to 17%, with notable regional variation: Kirinyaga County reported the highest rate (40%), Wajir County the lowest (2%), and Meru County a moderate rate of 23%.

Overall, the study established that multiple factors influenced the choice of delivery method at Meru Level V Hospital, including sociodemographic characteristics, knowledge of delivery options, and maternal attitudes. Social status emerged as a key determinant of delivery choice, with women of higher socioeconomic status more likely to opt for cesarean section compared to those of lower status. This may be attributed to greater access to healthcare services, medical insurance, and health-related information among higher-income groups, as well as perceptions that cesarean delivery is safer for both mother and child.

Additionally, respondents expressed a preference for autonomy in making decisions regarding their mode of delivery. However, this autonomy was influenced by levels of knowledge, prevailing attitudes, and social factors, which collectively shaped external decision-making.

#### **5.0 Recommendations**

In alignment with the World Health

Organisation guidelines and the Kenya Health Policy 2014–2030, the findings of this study underscore the need to strengthen maternal health interventions that promote informed and appropriate choices of delivery methods. Antenatal care services should be enhanced to provide comprehensive, evidence-based health education on delivery options, clearly outlining the risks, benefits, and clinical indications of both vaginal delivery and cesarean section in line with WHO recommendations on appropriate CS use. Healthcare providers should be supported through continuous capacity building to deliver standardised, patient-centred counselling that promotes informed and shared decision-making while respecting maternal autonomy. In addition, maternal health programs should integrate community and family engagement strategies to address socio-cultural influences and misinformation that affect women’s choices, as emphasised in Kenya’s health policy framework on community participation and health promotion. Efforts should also focus on reducing socioeconomic inequities by ensuring equitable access to quality maternal healthcare services, including financial risk protection mechanisms and access to accurate health information. Furthermore, health systems should strengthen monitoring and evaluation mechanisms to track cesarean section rates and ensure adherence to national and global guidelines, thereby preventing unnecessary procedures while safeguarding maternal and neonatal outcomes. Collectively, these measures will contribute to improving the quality of maternal healthcare and ensuring that women are supported to make informed, safe, and contextually appropriate decisions regarding childbirth.

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