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Factors driving the rise in cesarean births among women at Jinja Regional Referral Hospital

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ABSTRACT

Cesarean surgery (CS) is one of the most common obstetric procedures performed worldwide. There was a scarcity of data on cesarean surgery (CS) and its associated factors in Africa and other poor nations. The purpose of this study was to find out how common cesarean surgery (CS) was, as well as the associated obstetric and non-obstetric characteristics, among women who gave birth at Jinja Regional Referral Hospital. A retrospective descriptive research was utilized to collect data, which was then counted and categorized using frequencies and percentages. The study discovered that 5.7% (22) of the 384 women participating in the study between September 1st and December 31st delivered by cesarean, whereas 94.3% (362) delivered via cesarean. The prevalence in my study was 5.7%. The Women between the ages of 16 and 20 and those beyond the age of 41 were the most likely to undergo cesarean surgery (CS). As a result, the majority of mothers who had cesareans during this time period were between the ages of 16 and 20 and over 40. Those with a low level of education, living in cities, having gestational diabetes, and preeclampsia were also more likely to have a cesarean delivery. Encourage mothers to attend antenatal appointments in order to spot issues early.

Keywords: Cesarean surgery, obstetric, Pregnancy.

INTRODUCTION

Cesarean section (CS) is one of the most commonly performed surgeries in obstetric practice [1]. In most of the countries, there has been a dramatic rise in the CS rate over the past few decades, and there is a wide variation in CS rates between countries. Based on the latest data from 150 countries throughout the world, the CS rate was 18.6 % [2]. The highest rate was reported in Latin America and the Caribbean at 40.5 % and the lowest was reported in Africa at 7.3%. The rate of CS in other parts of the world was reported as follows; Northern America (32.3%), Oceania (31.1%), Europe (25%), Asia (19.2%). According to the WHO, there is no justification for any region to have CS rates higher than 10-15% [2].

In most cases, CS is not due to medical necessity. Some possible reasons for increasing CS rates are reported such as fear of delivery pain; concerns about genital modification after vaginal delivery; misconception that CS is safer for the baby; the convenience for health professionals and also for the mother and baby; and fear of medical litigation; [3]. Perhaps due to the complexity of all these scenarios and the many interconnected factors that contribute to increasing cs rates, interventions tested have only shown moderate success to date [4]. Some case studies have been published recently pointing to interventions such as high-quality midwifery-led unit for delivery as an effective way to reduce CS [5] and professional associations have released recommendations for the safe prevention of primary cesarean sections [6]. However, considering solely medical

factors in this complex scenario is likely to be a futile effort to reduce unnecessary CS. Factors associated to women's fears and lives and societal and cultural beliefs are very likely contributing to the increase and need to be included [7]. Cesarean section rates continue to evoke worldwide concern because of their steady increase, lack of consensus on the appropriate CS rate and the associated additional short- and long- term risks and costs [2].

A cesarean section is a lifesaving surgical procedure done when certain complications arise during pregnancy and labour. However, it is a major surgery and is associated with immediate maternal and perinatal risks and may have implications for future pregnancies as well as long-term effects that are still being investigated [8]. The use of CS has increased dramatically worldwide in the last decades particularly in middle income and high income countries, despite the lack of evidence supporting substantial maternal and perinatal benefits with CS rates higher than a certain threshold, and some studies showing a link between increasing CS rates and poorer outcomes [9]. The reasons for this increase are multifactorial and not well understood. Changes in maternal characteristics, and professional practice styles, increasing malpractice pressure, as well as economic, organizational, social and cultural factors have been implicated in this trend [10]. Additional concerns and controversies surrounding CS include iniquities in the use of the procedure, not only between countries but also within countries and the costs that unnecessary cesarean sections impose on financially stretched health systems [11].

Globally, approximately 15 in 100 pregnant women require CS to prevent poor outcomes for them and their newborns [9]. A facility or population-level CS rate below 5% suggests that women lack access to emergency obstetric care services, while a 10-15% rate is generally accepted as optimal [9]. Worldwide, CS rates have increased tremendously in recent years, especially among high-income countries, raising concerns about over-utilization of CS without added benefits. However, in Sub-Saharan Africa, where two-thirds of the world's 302,000 maternal deaths occur annually, the CS rate is the lowest in the world at 7.3% [7] and women and their newborns often end up dying or sustaining unnecessary injuries due to limited access to and under-utilization of CS services. Uganda is struggling with a high maternal mortality ratio (MMR) , estimated at 336 per 100,000 live births in 2016; this translates into a lifetime risk of maternal death of 1 in 47 [10]. To address this, the government has made deliberate efforts to increase availability, quality, access to, and utilization of emergency obstetric care services to manage and treat complications of pregnancy, labour, and delivery [9]. The Uganda Ministry of Health (UMOH) uses the CS rate as an indicator for measuring these characteristics, and for measuring the functionality of the health service system [12]. A study in 2011 estimated that 5.2% of all women delivered their babies via CS, up from 3.1-3.6 % in 2016 [13].

Uganda's health care system comprises multiple levels of care, including health centres (HC) II, III, and IV, general hospitals, and referral hospitals. For care related to childbirth, HC IIs and small clinics are mandated to provide essential obstetric care including antenatal care, preventive services, and treatment for common illnesses. HC IIIs perform normal deliveries and first aid for complications of pregnancy, labour and deliver. They also provide lifesaving interventions including parenteral antibiotics, oxytocic drugs, anticonvulsants, assisted vaginal delivery, manual removal of placenta, and removal of retained products of conception. HC IVs act as mini-hospitals and are the first referral level for low or moderate-risk pregnant women. Both HC IVs and hospitals are mandated to provide comprehensive emergency obstetric care (CEmOC), including CS and blood transfusion services as well as lifesaving interventions provided at lower health centres. Health centre IVs and hospitals

also refer women with high risk pregnancies to regional referral hospitals [14].

WHO defined an ideal cesarean section rate for a nation of 10-15% [9], but much higher rates are seen in tertiary referral centres in resource -poor countries like Uganda [15]. This is based on studies that show improving maternal and neonatal morbidity and mortality as rates rise up to this level, but minimal improvements and negative outcomes as rates increase past 10% [16]. The rate of CS in Uganda increased from 8.5% in 2012 to 11% in 2016 [17]. The same study by Atuheire et al, also showed that the CS rate at Jinja Regional Referral increased from 5.2% in 2012 to 6.8% in 2016 with a median CS rate of 6.8 %. The effect of higher CS rates on maternal side include; hysterectomy, blood transfusion, pelvic adhesions, surgical injury of the bladder and bowel, admission to ICU and increased mortality [18]. The effect on subsequent pregnancies include; early placenta accreta, and cesarean scar pregnancy [18].

Consequently, avoidance of unnecessary primary cesarean sections should be one of the goals of every facility that offers obstetric services. Identification of the factors contributing to the increase in cesarean delivery at Jinja Regional Referral Hospital is a step towards this goal. I have found very few studies that explain the factors responsible for the increase in cesarean delivery in a regional hospital setting in Uganda. I therefore hope to provide research findings that will bridge this information gap. I hope that the information provided will inform local hospital policy and also impact clinical practice at Jinja Regional Hospital for improved fetal and maternal outcomes. The solutions I intend to propose in order to avoid unnecessary CS that might be contributing to the increase in CS include; regular bedside teaching sessions and ward rounds, continuing medical education (CME), encourage more involvement of senior clinicians regarding making decisions on CS, encourage labour induction and vacuum delivery in cases where appropriate. Therefore, this study will look at the indications for CS, the appropriateness of this decision for CS and what alternative management might have been offered in order to explore why there was an increase in CS rate at this level. In addition, educational interventions will be instigated to see if these might improve the appropriateness of the decision for CS.

METHODOLOGY

Study Design

This was a quantitative cross sectional descriptive study using a retrospective review of patient's files. The quantitative design was chosen so that collected data can be analysed for statistical significance of associations between predictor and outcome variables. The medical officers' documented indications for each cesarean section will also be used.

Study Area

The study was conducted in Jinja Regional Referral Hospital, Jinja town in Uganda.

Study Population

The study population comprised of women who delivered from Jinja Regional Referral Hospital from 1st September 2019 to 31st December 2019.

Inclusion Criteria

All files of women who delivered from Jinja Regional Referral Hospital from 1st September 2019 and 31st December 2019 were included.

Exclusion Criteria

All files of women with missing maternity case records or missing information on key variables were excluded.

Sample Size Determination

The sample size was calculated using the Kish Leslie (1965) formula;

$$n=z^2p\ (1-p)/\ e^2$$

where;

n= Estimated minimum sample size required

p = proportion of a characteristic in a sample (50%).

Z = 1.96 (for 95% Confidence Interval)

e = margin of error set at 5%

$n = 1.96^2 \times 0.5\ (1 - 0.5) / 0.05^2$

n = 384 women.

Sampling Procedures

Systematic random sampling method was used to select patients' files. All patients who delivered between 1st September to 31st December were identified and a list was made. From this list, 384 patients' files were chosen. Files were checked for consistency and only those with complete information were considered.

Data Collection Methods and Management

This study utilized a patient data collection sheet and a summary sheet for monthly cesarean deliveries. The data sheet included demographic information like age, race, education, marital status, and employment status. Obstetric factors were described using the Robson ten point classification. Non-obstetric indications for cesareans were specified in Part C of the data sheet.

Data Analysis

The study used SPSS to analyze qualitative data, tabulating frequency of variables. Bivariate analyses were performed on demographic, obstetric, and non-obstetric factors using Chi square and Fisher's exact tests. The findings were presented in tables, charts, and graphs for further analysis.

Quality Control

The data collection team, consisting of four research assistants, was recruited based on their experience in conducting similar research, and a two-day training session will be conducted by the principal researcher.

A Pilot Study

A pilot study was conducted to assess the information in patients' case files, the effectiveness of data collection tools, and estimate missing patient files. A randomly selected sample of 30 files was used, but the findings will not be used in the research report.

Ethical Considerations

The author obtained permission to access information from the district health information system, the Human Research Committee of Kampala International University, and the Chief Executive Director of Jinja Regional Hospital for a study on cesarean sections and vaginal deliveries. Confidentiality of patient and doctor identities will be maintained, and patient data will be password protected.

Limitations of the Study

I anticipated difficulty in investigating the effects of non-obstetric factors on CS, because the necessary information is not usually recorded in patient's files. I also anticipated incomplete recording of all subjective issues in the patient's files.

RESULTS

The socio-demographic factors associated with the increasing cesarean delivery in JRRH in 2019. A total of 384 women were enrolled in the study. The median age of the patients was 31-40 years and it ranged from a minimum of 5 years to a maximum of 50 years. Of the 384 women, 22 (5.7%) were delivered by caesarean section. Majority 127(33.1%) of the respondents had carried 3 – 4 pregnancies to term while the least 56(14.6%) had no children.

Majority 206(53.6%) were married while the least 27(7.0%) were widowed. Majority 197(51.3%) of the respondents were living in urban areas while the least 187(48.7%) were living in rural areas.

Majority 100(26.0%) were peasant farmers while the least 35(9.1%) were civil servants.

Most 116(30.2%) were Catholics while the least 32(8.4%) were other religions. Most 133(34.6%) attained none of the levels of education while the least 73(19.0%) attained tertiary level of education.

Table 1: showing the demographic characteristics of the sample

Variable	Frequency (n=384)	Percentage (%)
Age bracket		
16-20	49	12.7
21-30	170	44.3
31-40	114	29.7
41 and above	51	13.3
Parity		
0	56	14.6
1-2	98	25.5
3-4	127	33.1
4 and above	103	26.8
Living environment		
Urban	197	51.3
Rural	187	48.7
Marital status		
Separated	62	16.1
Married	206	53.6
Single	89	23.2
Widowed	27	7.0
Occupation		
Civil servant	35	9.1
Housewife	103	26.8
Self employed	57	14.8
Peasant	100	26.0
Business woman	89	23.3
Religion		
Anglican	99	25.7
Catholics	116	30.2
Moslems	86	22.4
SDA	51	13.3
other religion	32	8.4
Level of education		
Primary	97	25.3
Secondary	81	21.1
Tertiary	73	19.0
None	133	34.6

Prevalence of cesarean delivery among women delivering from JRRH in 2019

The prevalence of cesarean delivery among women delivering from JRRH in 2019 was found to be 9.4%.

The clinical registers of 2019 showed that majority 362(94.3%) delivered by virginal birth method while 22(5.7%) had caesarean delivery.

Table 2 shows the prevalence of cesarean delivery among women delivering from JRRH in 2019

Variable	Frequency	Percentage (%)
Type of birth (n=384)		
Vaginal birth	362	94.3
Caesarean delivery	22	5.7

Association of the socio-demographic factors with the increasing cesarean delivery in JRRH in 2019.

Age bracket, Parity, Living environment, and Level of education were found to be statistically significantly associated with increasing cesarean delivery at Jinja Regional hospital in 2019 at 5% level.

Women who belonged to age bracket of 16-20 and 41 and above were 3 and 4 times respectively more likely to be admitted to caesarean section as compared to those in age group of 21 – 30 years (OR=**3.37**, **4.53** : 95%CI, **1.77–14.74, 1.86–21.72**: P=<**0.002, 0.003**).

Women who lived in urban areas were 7 times more likely to be admitted in caesarean section as compared to those who were living in rural areas (OR=7.93: 95%CI, **0.55–38.33**: P=<**0.001**).

Women who had primary level of education were 3 times more likely to be admitted in caesarean section as compared to those who had tertiary level of education (OR=**32.9**: 95%CI, **1.94–5.57**: P=<**0.001**).

Table 3 showing association of the socio-demographic factors with the increasing cesarean delivery

Variable	Prevalence of caesarean delivery		OR (95% CI)	P-Values
	C.D n=22	V.D=362		
Age bracket				
16-20	7(12.5%)	49(87.5%)	**3.37 (1.77–14.74)**	**0.003**
21-30	3(1.7%)	170(98.3%)	ref	
31-40	4(3.4%)	114(96.6%)	1.37 (0.89–2.45)	0.012
41 and above	8(13.6%)	51(86.4%)	**4.53 (1.86–21.72)**	**0.002**
Parity				
1-2	5(4.9%)	98(95.1)	ref	
3-4	6(4.5%)	127(95.5%)	2.51 (1.55–8.06)	0.031
4 and above	11(9.6%)	103(90.4%)	2.69 (2.17–9.34)	0.009
Living environment				
Urban	16(7.5%)	197(92.5%)	7.93(0.55–38.33)	**<0.001**
Rural	6(3.1%)	187(96.9%)	ref	
Occupation				
Civil servant	4(10.3%)	35(89.7%)	0.12 (0.62 - 0.60)	0.413
Housewife	6(5.5%)	103(94.5%)	0.47 (0.18 - 4.23)	0.332
Self employed	3(5%)	57(95%)	ref	
Peasant	5(4.8%)	100(95.2%)	0.88 (0.63–1.23)	0.391
Business woman	4(4.3%)	89(95.7%)	0.87 (0.62–1.22)	0.373
Level of education				
Primary	11(17.7%)	51(82.3%)	**3.29 (1.94–5.57)**	**<0.001**
Secondary	05(3.6%)	133(96.4%)	1.47 (0.86–2.53)	0.620
Tertiary	03(2.4%)	124(97.6%)	ref	
None	07(11.5%)	54(88.5%)	1.27 (0.44–3.68)	0.014

Association of obstetric factors and non- obstetric factors with increasing cesarean delivery at Jinja Regional hospital in 2019.

Distance from the health facility, Number of previous caesarean, diabetes mellitus, body mass index, family income, fetal presentation and birth spacing in the past were found to be statistically significantly associated with increasing cesarean delivery at Jinja Regional hospital in 2019 at 5% level.

Women who were more than 10 km from the health facility were 6 times more likely to have caesarean section as compared to those who had less than 10km distance to the health facility (OR=6.03: 95%CI, 2.90 – 11.24: P<0.004).

Women who delivered on caesarean for 3 and above times before were 8 times more likely to be admitted to caesarean section

again as compared to those who had 1-2 times on caesarean section before (OR=8.50: 95%CI, 0.93 – 78.0: P=0.001).

Women who never attended their previous ANC were 16 times more likely to attend caesarean section as compared to those whose ANC were 2 – 3 times (OR=16.0: 95%CI, 15.70 – 37.54: P=0.011).

Women whose Diabetes mellitus occurred during gestational period were 13 times more likely to have caesarean section as compared to those who diabetes mellitus was revealed even before pregnancy (OR=13.00: 95%CI, 2.88– 58.68: P=<0.001).

Women whose Body mass index ranged from 25 to 29.9 (overweight) were 32 times more likely to be admitted in caesarean section as compared to those whose body mass index ranged from 18.5 to 24.9 (normal) (OR=32.4: 95%CI, 3.34 – 86.66: P=<0.001).

Women who belonged to the families with income of 260,000 and above were 7 times more likely to be admitted in caesarean section as compared to those who belonged to other income earners (OR=7.27: 95%CI, 1.8 - 29.27: P=<0.002).

On fetal presentation, women who belonged to cephalic presentation were 5 times less likely to be admitted in caesarean section as compared to those who had breech presentation (OR=5.09: 95%CI, 0.65 – 23.44: P=<0.001).

Women whose Gestation age at labor was less that 38 weeks were 3 times more likely to be admitted in caesarean section as compared to those whose gestation age at labor was above 40 weeks (OR=3.71: 95%CI, 1.37 -180.84: P=<0.027).

Women who had birth spacing in the past were 1 time more likely not to be admitted in caesarean section as compared to those whose gestation age at labor was above 40 weeks (OR=0.72: 95%CI, .09 – 5.86: P=<0.007).

Table 4: Showing association of obstetric factors and non- obstetric factors with increasing cesarean delivery at Jinja Regional hospital in 2019

Variable	Prevalence of caesarean delivery		OR (95% CI)	P-Values
	C.D n=22	V.D n=362		
Distance from the health facility				
Below 10 km	9(4.0%)	215(96.0%)	ref	
More than 10 km	13(8.1%)	147(91.9%)	6.03[2.90 – 11.24]	**0.040**
Antenatal care visits				
Once	09(18.4%)	40(81.6%)	17.11[10.1 – 27.54]	**0.042**
2 – 3 times	06(2.8%)	208(97.2%)	5.20[2.32 - 11.65]	0.058
4 and above	04(3.8%)	108(96.2%)	ref	
Never	03(33.3%)	06(66.7%)	16.0 [5.70 – 37.54]	**0.011**
Number of previous caesarean				
1	3(25%)	9(75%)	ref	
1-2	6(37.5%)	10(62.5%)	2.73 [0.58 – 1.75]	0.082
3 and above	13(68.4%)	6(31.6%)	8.50 [0.93 – 78.0]	**0.001**
Diabetes mellitus				
None	6(2.8%)	211(97.2%)	ref	
Gestational	14(17.3%)	67(82.7%)	13.00 (2.88– 58.68)	**0.001**
Pre-pregnancy	4(4.5%)	84(95.5%)	0.022 (0.01 – 0.09)	0.036
Body mass index				
Underweight (<18.5)	02(5.7%)	33(94.3%)	ref	
Normal (18.5-24.9)	03(1.2%)	245(98.8%)	6.3[0.77 – 30.74]	0.093
Overweight (25.0-29.9)	09(15.3%)	50(84.7%)	32.4[3.34 – 86.66]	**0.001**
Obesity (>30)	08(18.2%)	36(81.8%)	9.5[1.07 – 106.99]	**0.043**
Family income				
100,000 – 150,000	05(4.1%)	117(95.9%)	4.8[2.65 - 16.7]	0.913
160,000 – 200,000	03(2.3%)	130(97.3%)	ref	
210,000 – 250,000	04(4.9%)	78(95.1%)	6.01 [0.48 - 28.12]	0.009
260,000 and above	11(15.7%)	59(84.3%)	**7.27 [1.8 - 29.27]**	**0.002**
Fetal presentation				
Cephalic	18(24.3%)	56(75.7%)	**5.09 [0.65 – 23.44]**	**<0.001**
Breech	04(1.3%)	306(98.7%)	ref	
Gestation age at labor				
<38 weeks	10(9.2%)	99(90.8%)	15.71[1.37 - 180.84]	0.027
38-40 weeks	05(4.5%)	107(95.5%)	0.65 (0.08 – 5.29)	0.691
>40 weeks	07(4.3%)	156(95.7%)	ref	
Birth spacing in the Past				
Yes	10(3.8%)	253(96.2%)	0.72 (0.09 – 5.86)	0.007
No	12(9.9%)	109(90.1%)	ref	

DISCUSSION

Prevalence of cesarean delivery among women delivering from JRRH in 2019

The prevalence of cesarean delivery among women delivering from JRRH in 2019 was found to be 5.7%. The clinical registers of 2019 showed that majority 362(94.3%) delivered by virginal birth method while 22(5.7%) had caesarean delivery.

Factors associated with the increasing cesarean delivery in JRRH in 2019.

Association of the socio-demographic factors with the increasing cesarean delivery in JRRH in 2019. In the study, women in age group of 16-20 and 41 and above (OR=3.37, 4.53: 95%CI, 1.77–14.74, 1.86–21.72: P=<0.002, 0.003) had highest odds of having caesarean section. These findings are in line with the finding by [19] which revealed that women with 41 years and above have a lot of chances of attending caeserean as compared to women in other age groups. The reason behind this association may be that older women are more likely to experience pregnancy complications such as diabetes, hypertension and pre-eclampsia while women have little experience of delivery.

On the other hand, women with primary levels of education were 3 times more likely not to utilize postnatal care services compared to those who attained college level of education (OR=3.29: 95%CI, 1.94–5.57: P<0.001). A study conducted in China supported the above findings and showed that the adjusted odds ratio for cesarean delivery was 4.46 times higher in women with university/college education compared to women who were illiterate or primary school educated (OR=4.46; 95% CI 2.89, 6.88) [20].

Furthermore, Women who lived in urban areas were 7 times more likely to be admitted in caesarean section as compared to those who were living in rural areas (OR=7.93: 95%CI, 0.55–38.33: P=<0.001). The above findings were in association with study findings by [21], on factors associated with caesarean section in Kenya, who found out that rural women were having virginal birth (27.7%) compared to urban women (10.9%).

Association of obstetric factors and non- obstetric factors with increasing cesarean delivery at Jinja Regional hospital in 2019.

Women who were more than 10 km from the health facility were 6 times more likely to have caesarean section as compared to those who had less than 10km distance to the health facility (OR=6.03: 95%CI, 2.90 – 11.24: P<0.004). The findings were associated with the findings of the study by [22] on the relationship between cesarean delivery and gestational age among US singleton births which revealed that women who belonged to far areas from the health facilities were likely to have caesarean section compared to others.

On the other hand, Women who were preterm (<38 weeks gestation) and post term (>40 weeks) were more likely to experience cesarean delivery compared to women at above 40 weeks gestation. Women whose Gestation age at labor was less that 38 weeks were 3 times more likely to be admitted in caesarean section as compared to those whose gestation age at labor was above 40 weeks (OR=3.71: 95%CI, 1.37 -180.84: P=<0.027). Similar results were reported in a study conducted in in the USA found that the increase in cesarean sections in singleton preterm births was probably due to more breech presentations [22].

A highly significant association was found between cesarean deliveries and the number of previous cesarean sections in this study. Women who delivered on caesarean for 3 and above times before were 8 times more likely to be admitted to caesarean section again as compared to those who had 1-2 times on caesarean section before (OR=8.50: 95%CI, 0.93 – 78.0: P=0.001). This finding is consistent with the findings of a study conducted in six countries (Bangladesh, Colombia, Dominican Republic, Egypt, Morocco and Vietnam) which all showed that previous cesarean section deliveries was the highest risk factor for subsequent cesarean in all countries. Women with previous cesarean section/s were at risk of uterine rupture and bleeding due to placenta previa during pregnancy. While women with more than one previous scar are rarely given a trial for vaginal delivery; hence, they almost always have a planned cesarean delivery. There was a significant association between cesarean deliveries and abnormal fetal presentations like breech or transverse lie, as it is obstetrically indicated [23].

Women who never attended their previous ANC were 16 times more likely to attend caesarean section as compared to those whose their ANC were 2 – 3 times (OR=16.0: 95%CI, 15.70 – 37.54: P=0.011). Women whose Diabetes mellitus occurred during gestational period were 13 times more likely to have caesarean section as compared to those who diabetes mellitus was revealed even before pregnancy (OR=13.00: 95%CI, 2.88– 58.68: P=<0.001). This is consistent with the findings of a study conducted in England and the USA by [24].

Women whose Body mass index ranged from 25 to 29.9 (overweight) were 32 times more likely to be admitted in caesarean section as compared to those whose body mass index ranged from 18.5 to 24.9 (normal) (OR=32.4: 95%CI, 3.34 – 86.66: P=<0.001). The association between cesarean section and obesity has previously been reported in the study by [25]-[31].

Women who belonged to the families with income of 260,000 and above were 7 times more likely to be admitted in caesarean section as compared to those who belonged to other income earners (OR=7.27: 95%CI, 1.8 - 29.27: P=<0.002). On fetal presentation, women who belonged to cephalic presentation were 5 times more likely to be admitted in caesarean section as compared to those who had breech presentation (OR=5.09: 95%CI, 0.65 – 23.44: P=<0.001).

Women who had birth spacing in the past were 1 time more likely not to be admitted in caesarean section as compared to those whose gestation age at labor was above 40 weeks (OR=0.72: 95%CI, .09 – 5.86: P=<0.007) [32]-[37].

CONCLUSION

Women in the age groups of 16-20 and 41 and above, with primary levels of education, living in urban areas, being preterm, having Diabetes mellitus during gestation, having a BMI of 25 to 29.9 (overweight), and belonging to families with an income of 260,000 and above were the most likely to have caeserean deliveries in Jinja Hospital Regional Referral Hospital.

Recommendations

The study suggests that women over 40 years old are at high risk of cesarean delivery, and those with gestational diabetes should follow strict dietary advice to control macrosomia. Regular exercise is also recommended to maintain weight and prevent obesity. The study emphasizes the importance of health education for Jinja women during the antenatal period and suggests specialized antenatal counseling clinics for health promotion. However, these services are not yet available in Jinja, and further research is needed to confirm the variable causing the increased number of caesarean sections.

Further research

There is need to carry out a longitudinal study to confirm the variable that determine the increased number of caesarean section.

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