

Prevalence, Indications and Associated Complications of Caesarean Sections Among Mothers Attending Kampala International University-Teaching Hospital, Bushenyi District Western Uganda

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ABSTRACT

Cesarean section (CS) refers to an operative procedure whereby the fetuses after the end of the 28th week are delivered through an incision on the abdominal and uterine walls. When CS is undertaken for medical reasons can save the life of a woman and her baby. However, CS delivery rates have been steadily increasing worldwide over the last few decades beyond levels that can be considered necessary and this trend has not been accompanied by significant maternal or perinatal benefits. The current study sought to establish the; number of numbers of CS deliveries, indications of CS delivery and the common complications during and after CS delivery among pregnant mothers who were received at KIU-TH from 1st June to 31st December, 2019. Findings obtained indicated that the highest number of CS deliveries recorded is among pregnant mothers between the ages of 26 to 35 years, the highest indicator of CS deliveries recorded was cephalopelvic disproportion, and the most common complication during and after CS delivery recorded was infections. It has thus been recommended that communities need to be sensitized more about the dangers of CS delivery to avoid the possible complications associated with this mode of delivery among mothers, qualified personnel need to be recruited in health facilities who can safely carry out CS deliveries when needed and also a special study on the safety and standard of theatres in the health facilities in Uganda where CS delivery service is offered needs to be conducted.

Keywords: prevalence, indications, complications, caesarean sections, mothers

INTRODUCTION

Cesarean section (CS) refers to an operative procedure whereby the fetuses after the end of 28th week are delivered through an incision on the abdominal and uterine walls [1]. CS is a surgical procedure that when undertaken for medical reasons can save the life of a woman and her baby [2-6]. Amidst controversy, it appears that the operation derived its name from notification "lexCaesarea"- a Roman law promulgated in 715BC. The law provided either an abdominal delivery in a dying woman with a hope to get a live baby or to perform postmortem abdominal delivery for separate burial [1]. The word cesarean is also derived from the Latin verb 'Cedere' which means 'to cut' [1]. The first CS was reported in 1668 and in 1876, subtotal hysterectomy was performed [7, 1]. In 1882, the first attempt to suture the uterine walls

was performed and in 1907 the extra peritoneal operation was described. Furthermore, according to DC Dutta, (2017) in 1912, lower segment vertical incision was introduced and it was popularized in 1922. The same study revealed that in 1881 a transverse lower segment operation for the first time was done and the present technique of lower segment operation was reintroduced in 1926 popularized.

This operative procedure is performed when a vaginal delivery would put the baby's or mother's life or health at risk, thus it is performed before the onset of labor or before the appearance of any complication that may constitute an urgent indication for operation as well as performed in emergency [7, 2]. This operative procedure is done under

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anesthesia either general or spinal and performed in theatre. Studies also reveal that CS can be performed upon request for childbirths that could otherwise have been natural which is known as elective caesarean section [2].

Factors that promote Caesarean delivery are to protect against urinary incontinence, vaginal and anal prolapse, and sexual dissatisfaction, therefore increasing its appeal as a mode of delivery. The rise in numbers of women opting for a caesarean might also be affected by obstetricians' defense of women's rights to choose their method of delivery [8].

However, there are various complications of CS, which can be categorized as complications to the mother and complications to the child. To the mother these include infections, hemorrhage, and injury to organs, adhesions, extended hospital stay, extended recovery time, reactions to medications, risk of additional surgeries, emotional reactions and maternal mortality [1, 9]. To the child, these include premature birth, breathing problems, low appearance, pulse, grimace, activities and respiration (APGAR) score, fetal injury and fetal death [10, 1].

CS rates have been steadily increasing worldwide over the last few decades above levels that cannot be considered necessary

METHODOLOGY

Geographical Location of Study Area

KIU-TH is a hospital in Ishaka town, Bushenyi district in Western Region of Uganda. It is located in the north of Bushenyi district, south west of Mbarara district and around 78km from Mbarara town which is the biggest city in western Uganda.

Bushenyi district also located around 361km in southwest of Kampala (capital city) by road. Ishaka town coordinates together with municipality as all are believed to be 0o 32' 40.00"N, 30o 8' 16.00"E (Latitude: 0.544445, Longitude: 30.137778).

Study Design and Setting.

The research was a descriptive quantitative retrospective study of stored records from the Records department of KIU-TH reviewed on 20th to 24th September, 2021. The records were from 1st June, 2019

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and this trend has not been accompanied by significant maternal or perinatal benefits [2]. Furthermore, the international community through the Millennium Development Goal 5, committed to reduce the maternal mortality ratio by three quarters between 1990 and 2015 [11]. According to the same study, in order to reach this goal, there needed to be an expansion in access to basic emergency obstetric care which includes the provision of antibiotics, oxytocin, and anticonvulsants, manual removal of the placenta and retained products of conception, and assisted vaginal delivery as well as comprehensive Emergency Obstetric Care which includes safe CS and blood transfusion.

In Uganda the average CS rates in the regional and general referral hospitals were 28% and 25% respectively in the financial year 2016/2017 [12]. The recommended CS rates for targeted provision of this life saving interventions for mother and infant are 10-15% and this is the optimal rang. Hence, lower rates suggest unmet need, while higher rates suggest improper selection [13, 2]. However, access to safe CS in resource-limited settings was much lower and, estimated to be 1-2% reported in sub-Saharan Africa [14, 15, 2].

to 31st December, 2019 used to determine the prevalence, indications and complications of CS [16].

Study Population

The targeted population included all pregnant women who presented at KIU-TH between 1st of June to 31st December of 2019 for CS.

Selection Criteria

Inclusion Criteria

Pregnant women aged 15-45 years who attended KIU-TH between 1st of June to 31st December of 2019 for CS were included in this study.

Exclusion Criteria

Pregnant women aged below 15 years and above 45 years and those who attended before 1st of June to 31st December of 2019 for CS were not included in this study.

Sample Size Determination

The sample size was determined using the formula below according to Fisher et al., (1998).

$$n = \frac{z^2 \times p(1-p)}{d^2}$$

$$n = \frac{1.96^2 \times 0.379(1-0.379)}{0.05^2}$$

$$n = \frac{1.92^2 \times 0.379 \times 0.621}{0.0025}$$

$$n = 361.662$$

$$n = 361$$

Where:

n = minimum sample size required
z = confidence level at 95% (standard value of 1.96)

p = estimated prevalence of cesarean section at 37.9%

d = margin of error at 5% (standard value of 0.05)

Data Collection

This was a retrospective study where data was collected using a data collection sheet (appendix 1).

Determination of the number of CS deliveries among pregnant mothers, who were received at KIU-TH from 1st June to 31st December, 2019

This was obtained using the data sheet in appendix 1

The number of CS deliveries was generally high among pregnant mothers of the age 15 - 25 years with the total numbers of 172 cases, accounting for 42% of all the recorded cases between June to December, 2019 at KIU -TH. Furthermore, pregnant mothers between 26 to 35 years of age had the highest recorded cases of CS deliveries with the total number of 212 cases

Determination of the indications of CS delivery among pregnant mothers, who were received at KIU-TH from 1st June to 31st December, 2019

This was obtained using data sheet in appendix 1.

Establishment of common complications during and after CS delivery among mothers, who were received at KIU-TH from 1st June to 31st December, 2019

This was established using data sheet in appendix 1.

Data Management and Analysis

Data was analyzed manually by tallying the data obtained in charts, tables and graphs and represented in percentages using Microsoft Excel spread sheet.

Ethical Consideration

The guidelines set out by the Institutional Research and Ethics Committee (IREC) Kampala international university (KIU) was adhered to. The consent letter obtained from the IREC of KIU was presented to the management of KIU-TH for further permission to collect and also access the patients' records from the hospital's records department. Confidentiality of patients' information was strictly adhered to [17].

RESULTS

recorded in the same period, accounting for 52% of all the cases. The number of the recorded cases was lowest among pregnant mothers between 36 to 45 years, with the total number of 26 cases accounting for 6% of all the recorded cases between June to December, 2019 at the above health facility (Fig1).

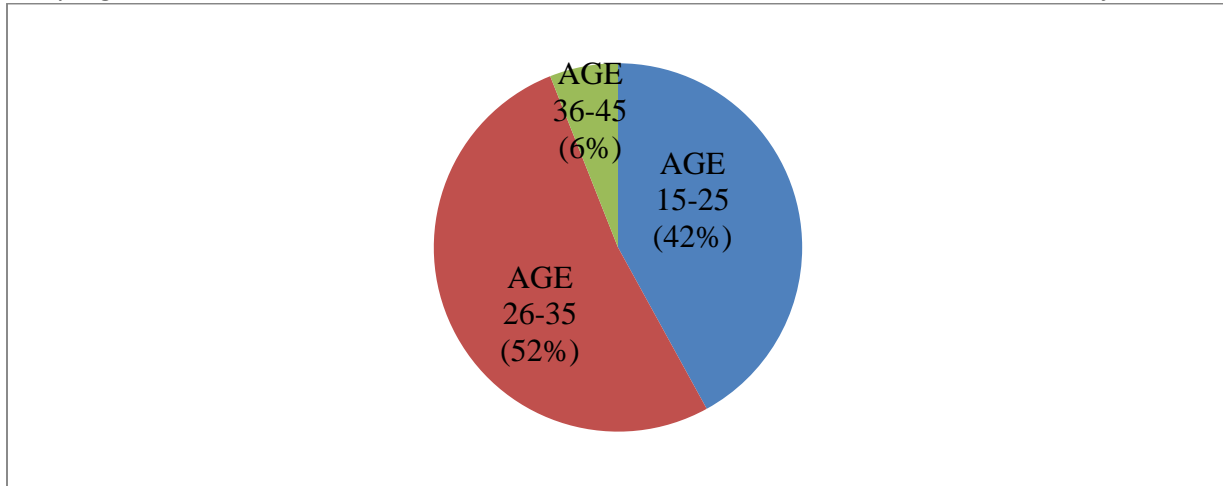


Figure 1: Percentage deliveries from June to December, 2019 of mothers aged between 15-25, 26-35 and 36-45 at KIU -TH

Among the indicators of CS deliveries noted in the records reviewed at the above health facility between June- December, 2019, 180 CS delivery cases of the overall total of 441 were associated with cephalopelvic disproportion as the most

significantly common indicator. This was followed by malpresentation and malposition (114 cases), repeated CS (101 cases), and antepartum haemorrhage accounting for 46 cases respectively (Fig. 2).

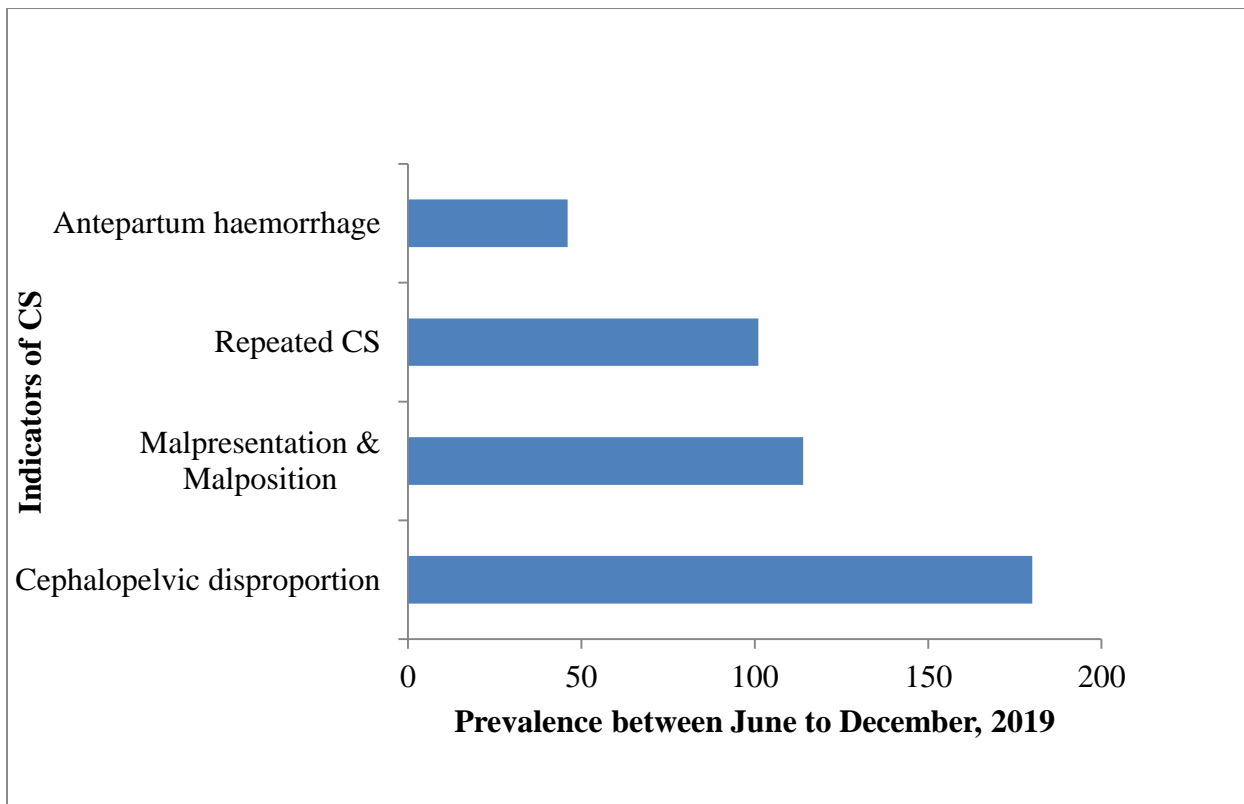


Figure 2: Prevalence of the indicators of CS deliveries among pregnant mothers who were received between June-December, 2019 at KIU-TH

The most common complication during and after CS delivery recorded at KIU - TH in the above period of time in 2019, among mothers was infections where the highest total recorded was 188 cases of the overall total of CS delivery cases of 441 accounting for 45%. This was followed by postpartum hemorrhages with the total of 178, accounting for 41%. 45 cases of injury

to the pelvic organs was recorded in that period which accounted for 8% and finally 30 cases were noted in the records reviewed in the above period accounting for 7%. Records reviewed indicated that there were no any other complications during and after the CS delivery among mothers was registered at KIU-TH between June-December, 2019 (Fig. 3).

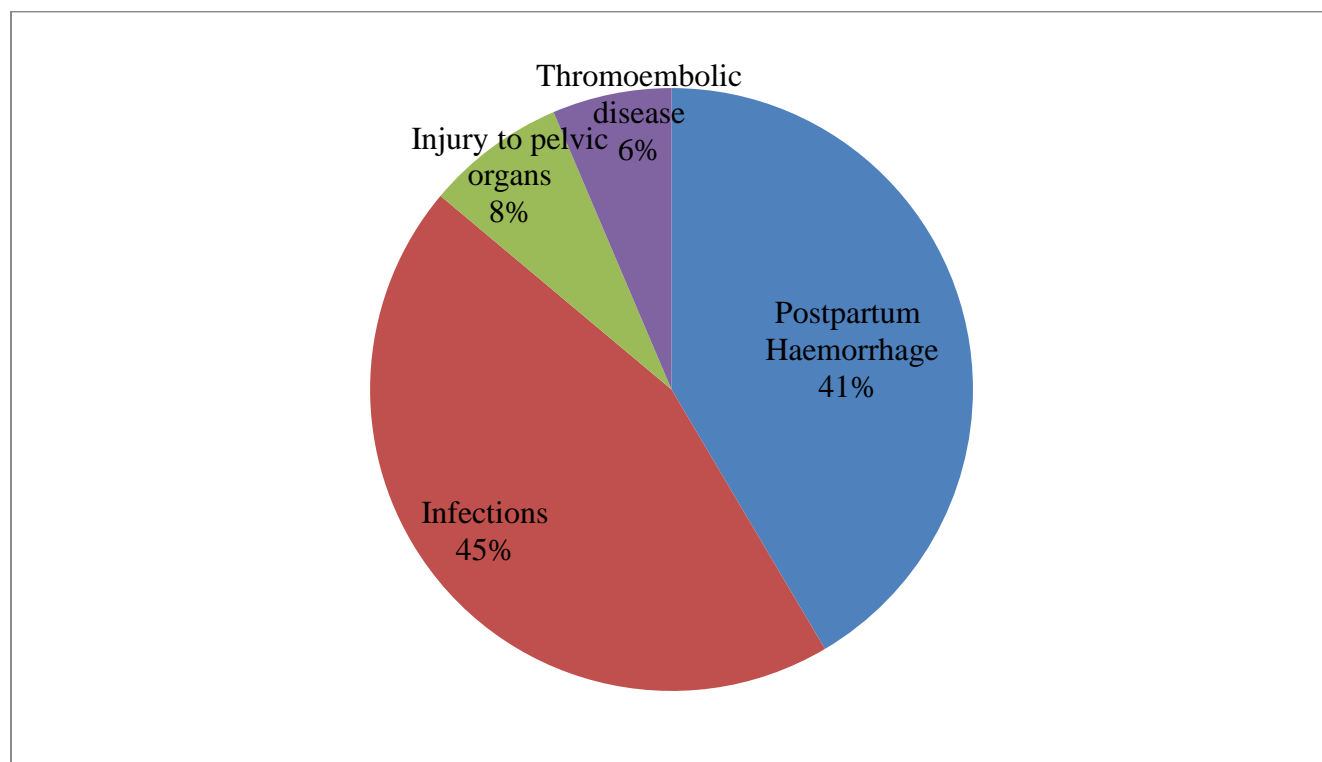


Figure 3: The common complications during and after CS delivery among mothers, who were received at KIU-TH from 1st June to 31st December, 2019

DISCUSSION

CS delivery cases were significantly higher (52%) among pregnant mothers between 26-35 years as compared to other age groups (15-25 and 36-45 years). This was in line with the findings of the study by [18], which indicated that Uganda had seen by then a growing incidence of expectant young mothers undergoing CS with the incidence at both Kawolo hospital and Mulago national referral hospital being 23%. The possible factors that promote Caesarean delivery in this age group; are to protect against urinary incontinence, vaginal and anal prolapse, and sexual dissatisfaction, therefore increasing its appeal as a mode of delivery. The bigger number of young mothers opting for a

caesarean might also be affected by obstetricians’ defense of women’s rights to choose their method of delivery [8]. The most significant indicator of CS delivery recorded being cephalopelvic disproportion is in accordance with the findings of the study by Isaac [19], conducted in Ngora district, Eastern Uganda. The study showed that the major single indications were obstructed labour 17.9%, fetal distress 15.3%, big baby 11.6%, and cephalopelvic disproportion (CPD) 11%. Another study in Ethiopia by [20], on analysis of caesarean delivery in Jimma Hospital, south-western Ethiopia, findings showed that the leading indications for caesarean section were cephalopelvic

disproportion (44%), malpresentations and malpositions (21%), repeat CS (16%), antepartum haemorrhage (8%) and fetal distress (6%), accounting for 95% of the indications for CS.

There are many complications of CS, which can be notably categorized as complications to the mother and complications to the child. To the mother these include infections, hemorrhage, and injury to organs, adhesions, extended hospital stay, extended recovery time, reactions to medications, risk of additional surgeries, emotional reactions and maternal mortality [1], [9]. To the child, these include premature birth, breathing problems, low appearance, pulse, grimace, activities and respiration score, fetal injury and fetal death [10], [1]. From the current study the most common CS complication recorded being infections, is

comparable to the findings of the study by [20], on analysis of caesarean delivery in Jimma Hospital, south-western Ethiopia where it was revealed that the causes of morbidity were as follows; wound infection (27.1%), sepsis (21.4%), endometritis (33.3%), haemorrhage (8%) and wound dehiscence (10%). The findings of the current study were also in line with the previous findings by [9], where in also in their study the most common complication of CS among mothers was infections. This study established that endometriosis accounted for 35-40 % of the CS complications if not given intraoperative prophylactic antibiotics. Wound infection usually appears within 24-48 hours or 4-7 days postpartum. Wound may need to be reopened and heal by secondary intention while patient on antibiotics [21-25].

CONCLUSIONS

The current study findings have revealed that at KIU-TH, pregnant mothers between 26 to 35 years of age had the highest recorded cases of CS delivery cases (52%). The most notable indicator of CS delivery among the pregnant mothers at KIU -TH

was found to be cephalopelvic disproportion.

The most common CS complication recorded at KIU-TH was found to be infections to mothers and these usually appears within 24-48 hours or 4-7 days postpartum.

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