Predisposing Factors of Caesarean Section Rates in Private-Not-For-Profit Healthcare Facilities: A Study of St. Joseph's Hospital _ Kitovu

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MSc. M & E [Reg. No.: 2017-M302-20072]

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APPROVAL

This research proposal was developed by the researcher under my supervision and thereby approved as undersigned below;

30th, October, 2020

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Ms. Nasimbwa Florence
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DECLARATION

I, **Omona Kizito**, declare that this research proposal entitled **"Predisposing Factors of Caesarean Section Rates in Private-Not-For-Profit Healthcare Facilities: A Study of St. Joseph's Hospital _ Kitovu"** will be submitted in partial fulfilment of the degree of Master of Science in Monitoring and Evaluation **(MSc. M & E).** It is a record of original work to be carried out by me under the supervision of **Ms. Nassimbwa Florence** and it has not formed the basis for the award of any other degree or diploma, in this or any other Institution or University. In keeping with the ethical practice in reporting scientific information, due acknowledgements have been made wherever the findings of others have been cited.

30th October, 2020

Signature_____ Date _____

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Researcher

DEDICATION

I dearly dedicate this research proposal to my dear Wife Mrs Omona Storia; my mother, Paska Lanyero and my children. These are Omona Job Obama, Omona Simon Okwir, Rwot-dit Emmanuel and Omona Oscar, as well as my daughter Omona Eve.

Special dedications also go to my lecturers at Uganda Martyrs' University (UMU), especially Faculty of Agriculture for supporting me through this entire MSc. M & E program. May the Almighty God bless them all!!!

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[Omona Kizito, Reg. No. 2017 – M302 - 20072]

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LIST OF ABBREVIATIONS

01.	ANC	-	**Antenatal care**
02.	**AOR**	-	Adjusted Odds Ratio
03.	**BC**	-	Bed Capacity
04.	**CDC**	-	Centres for Disease Control and prevention
05.	**COR**	-	Crude Odds Ratio
06.	**C-Section**	-	Cesarean Section
07.	**CSR**	-	Cesarean Section Rate
08.	**UDHS**	-	Uganda Demographic Health Survey
09.	**HCPs**	-	Health Care Providers
10.	**IRB**	-	Institutional Review Board
11.	**MMR**	-	Maternal Mortality Ratio
12.	**MoH**	-	Ministry of Health
13.	**MW**	-	Maternity Ward
14.	**PNFP**	-	Private-Not-For-Profit
15.	**SDGs**	-	Sustainable Development Goals
16.	**SSA**	-	Sub-Saharan Africa
17.	**WHO**	-	World Health Organization

ABSTRACT

Introduction: *Caesarean delivery, often called a C-section, is the delivery of the baby through incisions in the mother's abdomen and uterus. Caesarean deliveries, whether elective or medically necessary, have risen dramatically in recent decades across the globe. This made evidence-based research on methods, post-operative care and how to safely reduce their incidence became more imperative. According to World Health Organization, the ideal Caesarean Sections Rate (CSR) is between 10-15%. Over the years, however, caesarean sections have become increasingly common in both developed and developing countries. When medically necessary, a caesarean section can effectively prevent maternal and newborn mortality. When CSR rise towards 10% across a population, the number of maternal and newborn deaths decreases but when the rate goes above 10%, there is no evidence that mortality rates improve. The lack of a standardized internationally-accepted classification system to monitor and compare CSR in a consistent and action-oriented manner is one of the factors that have hindered a better understanding of the trend of CSR.*

Objectives: *The main objectives of the study were to; determine the mean CSR in St. Josephs' Hospital _ Kitovu and ascertain the determinants of Caesarean Section. The study also established the attitude of health managers towards monitoring and evaluating Caesarean Section*

Methodology: *The design was both descriptive and analytical cross-sectional study. It was both qualitative and quantitative in dimension. 318 respondent mothers who were admitted to Maternity ward or delivered from the said ward and health manager were interviewed. Document review guide, interview guides and semi-structured questionnaires were the research tools used to extract data. Ethical considerations and quality controls were taken care of*

Results: *The study found the Average CSR for St. Joseph's Hospital _ Kitovu was 47.6%.53.3% of the respondents mothers who had Caesarean delivery were 20-40years of age and that being in this age category was 0.4times less likely to predispose one to Caesarean delivery (COR =0.378, CI(0.114-1.256)). Conversely, being more than 40years of age is 1.3times more likely to make the respondent deliver by Caesarean section (COR=1.286, CI(0.471 - 3.514)).*
It also found a number of predisposing factors were associated or influenced Caesarean delivery in St. Joseph's Hospital Kitovu. These were; Age of respondent less than 20years (p=.041), not being married (p=.015), educational level of respondents (p=.000), living in urban setting (p=.001), among others. All the socio-economic determinants (regular household income, p=.000, and occupation, p=.000) highly influenced caesarean delivery in the health facility.
Mothers who lived in urban setting were 2.8times more likely to deliver by Caesarean section as opposed to their rural counterparts (p=.001, COR= 2.764, CI(1.542 – 4.953). Respondents who earned UGX100.000/= to UGX300.00/= and those who earned more than UGX300.000/= were 11times and 2times more likely to deliver by Caesarean section (COR= 11.106, 2.238 respectively) than those mothers who earned less than UGX100.000/=.
Lastly, mothers whose reason for preferred choice of mode of delivery was based on doctor's suggestion were 2.4times more likely to deliver by Caesarean section. Likewise, mothers whose choice of mode of delivery was based on husband's preference were less likely to deliver by Caesarean section (COR=0. 135, CI(0.021 – 0.855)).The views of the health manager were in support of regularizing monitoring and evaluation of Caesarean Section Rates (CSR).

Conclusion & Recommendation: *The Caesarean Section Rate (47.6%) in Private Not-For Profit Healthcare organization is still unacceptably higher than WHO recommendation of 10-15%. Therefore, there is stronger need to regularize monitoring and evaluation of CSR.*

CHAPTER ONE

INTRODUCTION

1.0: Introduction

This chapter basically presents the following; introduction, background to the study topic and area, problem statement, conceptual framework, objectives and justification of the study in that order.

1.1: Background to the Study

A caesarean delivery, often called a C-section, is the delivery of the baby through incisions in the mother's abdomen and uterus. Caesarean deliveries, whether elective or medically necessary, have risen dramatically in recent decades in the United States. This made evidence-based research on methods, postoperative care and how to safely reduce their incidence became more imperative (American College of Obstetricians and Gynaecologists [ACOG], 2017). CESAREAN SECTION DELIVERY RATE is the total number of resident caesarean deliveries among woman divided by the total number of all deliveries for a specified geographical area (country, province, city or hospital) during a specified time period per 100 live births (Anon., 2018). It's sometimes expressed in percentage (%).

ACOG (2017), further argued that caesarean section can be done for a number of reasons (indications). Some of the indications, among others, are; failure of labour progress or obstructed labour, foetal problems such as umbilical cord prolapses or compression, big baby, malposition of the baby, oblique lie and cervical dystocia as well as contracted maternal pelvis. Recent study by Oonagh, Norman &Stock (2018), similarly reported that Caesarean birth rates continue to rise

worldwide with recent rate in the year 2016 being 24.5% in Western Europe, 32% in North America, and 41% in South America.

According to World Health Organization [WHO] (2015), the ideal rate for caesarean sections is between 10-15%. Over the years, however, caesarean sections have become increasingly common in both developed and developing countries. When medically necessary, a caesarean section can effectively prevent maternal and newborn mortality. WHO further argues that when caesarean section rates rise towards 10% across a population, the number of maternal and newborn deaths decreases. When the rate goes above 10%, there is no evidence that mortality rates improve. The lack of a standardized internationally-accepted classification system to monitor and compare caesarean section rates in a consistent and action-oriented manner is one of the factors that has hindered a better understanding of the trend of Caesarean section rates.

Organization of Economic Co-operation for Development [OECD] (2017) argued that nevertheless, caesarean delivery continues to result in increased maternal mortality, maternal and infant morbidity and increased complications for subsequent deliveries, raising questions about the appropriateness of caesarean deliveries that may not be medically required.

Robson & De costa (2017) reported that recent analyses suggested that the optimal global Caesarean Section rate is almost 20%. Attempts to reduce Caesarean Section rates in developed countries seemed not to have worked at all. They noted that strongest predictor of caesarean delivery for the first birth of low risk women appears to be maternal age; a factor that continued to increase. Most women whose first baby is born by caesarean delivery will have all subsequent children by caesarean delivery.

Just like with any surgery, caesarean sections are associated with short- and long-term risk which can extend many years beyond the current delivery and affect the health of the woman, her child, and future pregnancies. These risks are higher in women with limited access to comprehensive obstetric care. In fact, Oonagh, Norman & Stock (2018) found that Caesarean delivery is associated with future sub-fertility and several subsequent pregnancy risks such as placenta preavia, uterine rupture, and stillbirth. In their submission on complications of C-section, Robson and De Costa (2017) reported that longer term outcomes, such as pelvic organ prolapse and urinary incontinence, are closely related to mode of birth, and up to 20% of women will undergo surgery for these conditions. Furthermore, Hodin (2017) opined that Caesarean section surgery, when medically indicated and performed by trained staff with the necessary equipment and supplies, can be a life-saving procedure for the mother and baby. However, compared to vaginal delivery, caesareans are associated with a higher risk of maternal and neonatal death; numerous maternal morbidities including infection, uterine rupture and amniotic fluid embolism. The author added that Studies have also observed that children born via caesarean are more likely to develop respiratory problems, diabetes and obesity later in life. Therefore, caesarean section should be considered a major surgical intervention and only be performed when clinically necessary.

Again, a study found that variations do occur on the rates of Caesarean sections depending on local economic levels. National Caesarean section rate was found to range from 0.6% in South Sudan to 58.9% in Dominican Republic. Likewise, within countries, Caesarean section rates were found to be lowest in the poorest areas (3.7%) and highest in the richest areas standing at 18.4% (Adeline, et al., 2018).The lack of a standardized internationally-accepted classification system to monitor and compare caesarean section rates in a consistent and action-oriented

manner is responsible for this discrepancy (WHO, 2015). Another study by Ji, et al. (2015) found that 34.9% of women who underwent caesarean section did not have any indications listed in the clinical guidelines nor based on maternal request. Multinomial regression analysis showed that doctors' influence was one of the significant risk factors of undergoing caesarean section, with doctor-defined indications. A similar study also found the change in the caesarean section rate in urban areas since the 1993 survey and how that change related to household income, access to health insurance and the women's educational attainment and parity. The rate increased more than threefold between the 1993 and 2008 surveys (crude RR: 3.63, 95% confidence interval, CI: 2.61–5.04). Caesarean section was more common in well -educated and wealthy women and in those with health insurance (Feng, Xu, Guo & Ronsmans, 2011).

A study done in Mbarara Regional Referral Hospital (MRRH), found that Caesarean Section Rate (CSR) was greater than 24 percent for the past four years and was 25 percent in the month of April 2011. Specifically, the CSR for MRRH was 24.1% in Financial Year 2006/2007, then 28.4% in Financial Year 2007/2008 then 28.5% in Financial Year 2008/2009 and lastly 27.7% in the Financial Year 2009/2010. This finding contradicted the one published by Uganda Demographic Health survey, which had put CSR for Uganda to be varying between 4% in Western region and 1.5% in northern region (Natasha, 2016)

Therefore, since Caesarean sections can cause significant and sometimes permanent complications, disability or death particularly in settings that lack the facilities and/or capacity to properly conduct safe surgery and treat surgical complications, it should ideally only be undertaken when medically necessary. Every effort should be made to provide caesarean sections to women in need, rather than striving to achieve a specific rate (WHO, 2015).

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1.2: Problem Statement

For the past 30years, World Health Organization recommendation on Caesarean Section Rates (CSR) has been 10 -15% of local population. Despite this recommendation, global CSR has been increasing over the years. Robson & De costa (2017) reported that recent analyses suggested that the optimal global Caesarean Section rate is almost 20%. Variations of rate are seen to occur with different local economic levels (Adeline, et al., 2018). In Uganda, a study once found the CSR of Mbarara regional referral hospital to be 24.1% (Natasha, 2016).

Therefore, from observation, the researcher presumes that the major problem is that there is high CSR and the researcher presumes that this could be much higher in Private-Not-for-Profit (PNFP) hospitals of Uganda, such as St. Joseph's Hospital _ Kitovu. Much as when medically justified, a caesarean section can effectively prevent maternal and perinatal mortality and morbidity, there could be both short term and long-term complications (consequences) of caesarean section. These include; pelvic organ prolapse, urinary incontinence, infection and uterine rupture, as well as higher cost of hospital deliveries, among others. The commonest factors associated with this increase is not yet clear

This research therefore, seeks to determine the Caesarean Section Rates (CSR) and the associated factors. This is believed to contribute to the reduction of the rate of Caesarean sections to the recommended WHO standard.

1.3: Objectives of the study

1.3.1: Major Objective
The broad objective of the study is to contribute to the reduction of Caesarean Section Rates (CSR) in Private-Not-For-Profit (PNFP) healthcare facilities in Uganda

1.3.2: Specific objectives

The specific objectives are;

1) To determine the average Caesarean Section Rate (CSR) in St. Joseph's Hospital _ Kitovu between January, 2019 and July, 2019.

2) To establish the predisposing factors of Caesarean Section delivery in St. Joseph's Hospital _ Kitovu before August, 2019?

3) To examine the attitudes of managers towards monitoring and evaluating Caesarean Section Rates in St. Joseph's Hospital _ Kitovu before August, 2019?

1.4: Research questions

The study sought to obtain answers to the following research question;

1) What was the average Caesarean Section Rate (CSR) in St. Joseph's Hospital _ Kitovu between January, 2019 and July, 2019?

2) What were the predisposing factors of Caesarean Section in St. Joseph's Hospital _ Kitovu before August, 2019?

3) What was the attitude of managers towards monitoring and evaluating Caesarean Section Rates in St. Joseph's Hospital _ Kitovubefore July, 2019?

1.5: Scope of the study

Geographic Scope: The study was conducted in Maternity ward of St. Joseph's Hospital _ Kitovu, in Masaka district, Uganda

Time Scope: It was scheduled and done between January, 2019 and August, 2019.

Content Scope: The content of the study included; Caesarean Section Rates (CSR), predisposing factors of Caesarean Section, experiences of mothers who had Caesarean Section delivery and attitudes of managers towards monitoring and evaluating Caesarean Section

1.6: Significance of the Study

When medically necessary, a caesarean section can effectively prevent maternal and newborn mortality. When Caesarean Section Rate (CSR) rises towards 10% across a population, the number of maternal and newborn deaths decreases but when the rate goes above 10%, there is no evidence that mortality rates improve. The lack of a standardized internationally-accepted classification system to monitor and compare CSR in a consistent and action-oriented manner is one of the factors that have hindered a better understanding of the trend of CSR.

Therefore, this study becomes very significant, in this context.

1.7: Justification of the study

It has been argued that Caesarean section rates are high and continue to rise in developed countries. Even so, the impact of guidelines and recommendations in curbing this increase has been limited. In 1985, representatives of a study group convened by the World Health Organization wrote that there is no justification for any region to have caesarean section rates higher than 10–15%. Although 10–15% levels of CSR were considered high but acceptable at the time, average caesarean rates in most developed regions now exceeds 20%. The recommendation thus appears to have been largely overtaken by events.

This study is, therefore, justified in the sense that it will contribute to the efforts to reduce the increase of Caesarean Section, especially in Private-Not-For-Profit (PNFP) hospitals in Uganda.

1.8: Operational Definitions

The following operation definitions have been stated;

1) **Caesarean Section–**A caesarean section is a surgical procedure that, when undertaken for medical reasons, can save the life of a woman and her baby (WHO, 2018)

2) **Caesarean Section Rates -** The caesarean section rate is the number of total caesarean deliveries performed per 100 live births (Organization for Economic Co-operation and Development [OECD], 2017).

3) **Gravidity** is defined as the number of times that a woman has been pregnant (Tidy and Payne, 2019)

4) **Parity** is defined as the number of times that she has given birth to a foetus with a gestational age of 28 weeks or more, regardless of whether the child was born alive or was stillborn (MOH, 2018)

5) **Multigravida -** A **multigravida** is a woman (mother) who has been pregnant more than once (Tidy and Payne, 2019)

6) **Prime-gravida -** A prime-gravida is a woman (mother) in her first pregnancy (Tidy and Payne, 2019)

7) **Nulliparous -** A nulliparous woman is one who has not given birth previously, regardless of outcome (Tidy and Payne, 2019)

1.9: Conceptual Framework

A number of factors affect mothers' preferences for Caesarean Section delivery, thus eventually influencing Caesarean Section Rate (CSR) directly or indirectly. Figure 1 below shows the relationship between those factors and eventful Caesarean Section Delivery.

As per the figure 1 below, Socio-demographic, socio-economic, pre-natal and family factors all contribute to the final mode of delivery of the mothers. These eventually determine whether the mothers will deliver by Caesarean section or no C-section (Vaginal birth) hence directly or indirectly affecting Caesarean Section Rate (CSR).
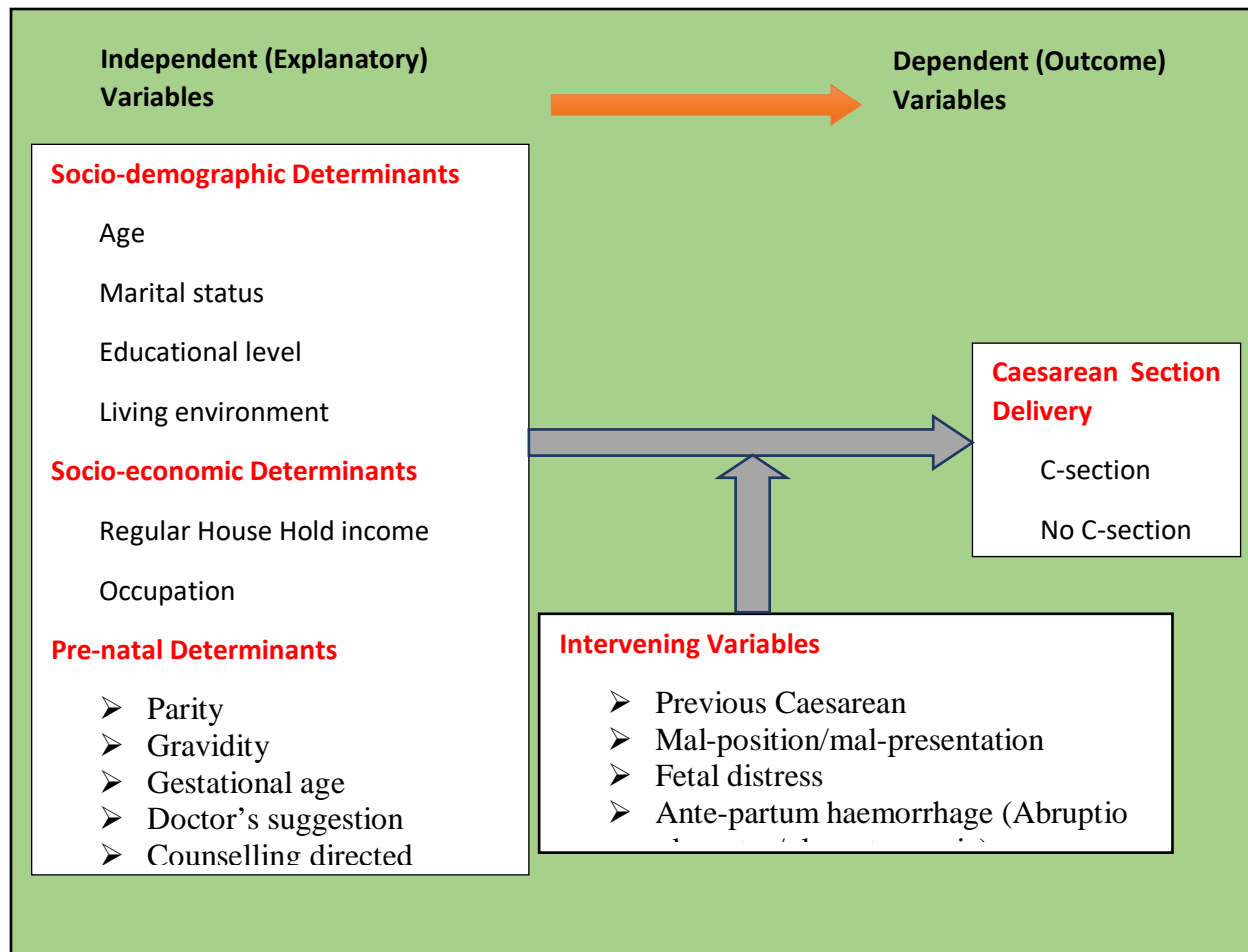
Figure 1: Conceptual Diagram for Determinants of C-Section

1.10: Theory Underpinning the Study: Theory of Planned Behaviour (TPB)

Theory of planned behaviour (TPB) is a theory that links one's beliefs and behaviour. The theory states that attitude toward behaviour, subjective norms and perceived behavioural control, together shape an individual's behavioural intentions and behaviours. The concept was proposed by one called 'IcekAjzen' to improve on the predictive power of the 'theory of reasoned action' by including perceived behavioural control. This theory (TPB) has been applied to studies of the relations among beliefs, attitudes, behavioural intentions and behaviours in various fields such as advertising, public relations, advertising campaigns, healthcare, sport management and sustainability, among others. Figure 2 below show an illustration of TPB
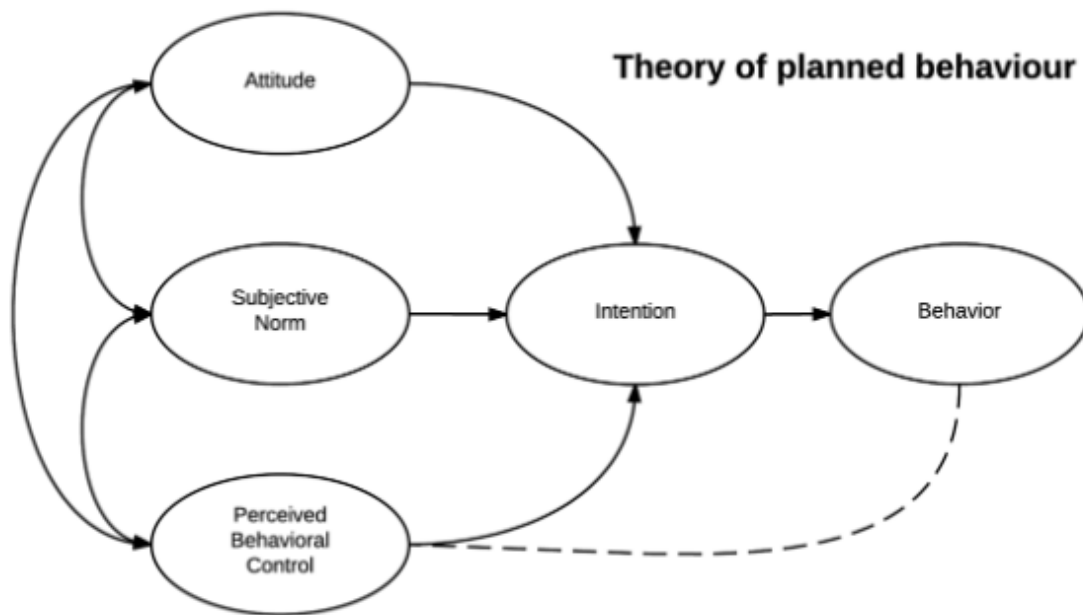
Figure 2: Theory of Planned Behaviour (TPB)

Following from figure 2 above, Human behaviour is guided by three kinds of consideration; behavioural beliefs, normative beliefs and control beliefs. Behavioural beliefs produce a favourable or unfavourable attitude toward the behaviour. Likewise, normative beliefs result in subjective norm and control beliefs, at last, gives rise to perceived behavioural control.

Therefore, in combination, attitude toward the behaviour, subjective norm and perceived behavioural control altogether lead to the formation of a "behavioural intention. In particular, perceived behavioural control is presumed to not only affect actual behaviour directly but also affect it indirectly through behavioural intention (Kreuter, Lezin, Kreuter and Green, 2003)

As a general rule, the more favourable the attitude toward behaviour and subjective norm, the greater the perceived behavioural control and hence the stronger the person's intention to perform the behaviour in question. Finally, given a sufficient degree of actual control over the behaviour, people are expected to carry out their intentions when the opportunity arises (University of Twente, 2002).

CHAPTER TWO

LITERATURE REVIEW

2.0: Introduction

This chapter presents related literature on mean Caesarean Section Rate (CSR), predisposing factors of Caesarean Sections, lived experiences of mothers who had CS delivery. The attitude of health managers towards monitoring and evaluating Caesarean Section was also reviewed, among others.

2.1: Review of Theory of Planned Behaviour (TPB)

This Theory of Planned Behaviour (TPB) postulates that the likelihood of an individual engaging in health behaviour (for example, regular exercise) is correlated with the strength of his or her intention to engage in the behaviour. A behavioural intention represents an individual's commitment to act and is itself the outcome of a combination of several variables. According to the TPB, the factors that directly influence intentions to engage in a health behaviour include the person's attitudes toward the behaviour, the person's perception of subjective group norms concerning the behaviour, and the extent to which the person perceives him- or herself to have control concerning the behaviour (Kagee and Freeman, 2017).

The theory of planned behaviour (TPB; Ajzen, 1985, 1987, 1991) was developed from the theory of reasoned action, and is more applicable when the probability of success and actual control over performance of behaviour are suboptimal (Mimiaga and Safren, 2009).

The TPB suggests that the proximal determinants of behavior are intentions to engage in that behaviour and perceived behavioural control (PBC)over that behaviour. Intentions represent a person's motivation in the sense of her or his conscious plan or decision to exert effort to perform

the behaviour. PBC is a person's expectancy that performance of the behaviour is within his/her control.

Control is seen as a continuum with easily-executed behaviours at one end and behavioural goals demanding resources, opportunities, and specialized skills at the other. Fishbein and Ajzen (2010) emphasized the interactive over the direct effect of PBC on behaviour. PBC mainly is seen as moderating the effect on intention on behaviour such that intentions have stronger effects when PBC is strong and reflects actual control.

Intentions are determined by three variables. The first is attitudes, which are the overall evaluations of the behaviour by the individual. The second is subjective norms, which consist of a person's beliefs about whether significant others think he/she should engage in the behaviour. The third is PBC, which is the individual's perception of the extent to which performance of the behaviour is within his/her control (Norman and Conner, 2017). See figure below
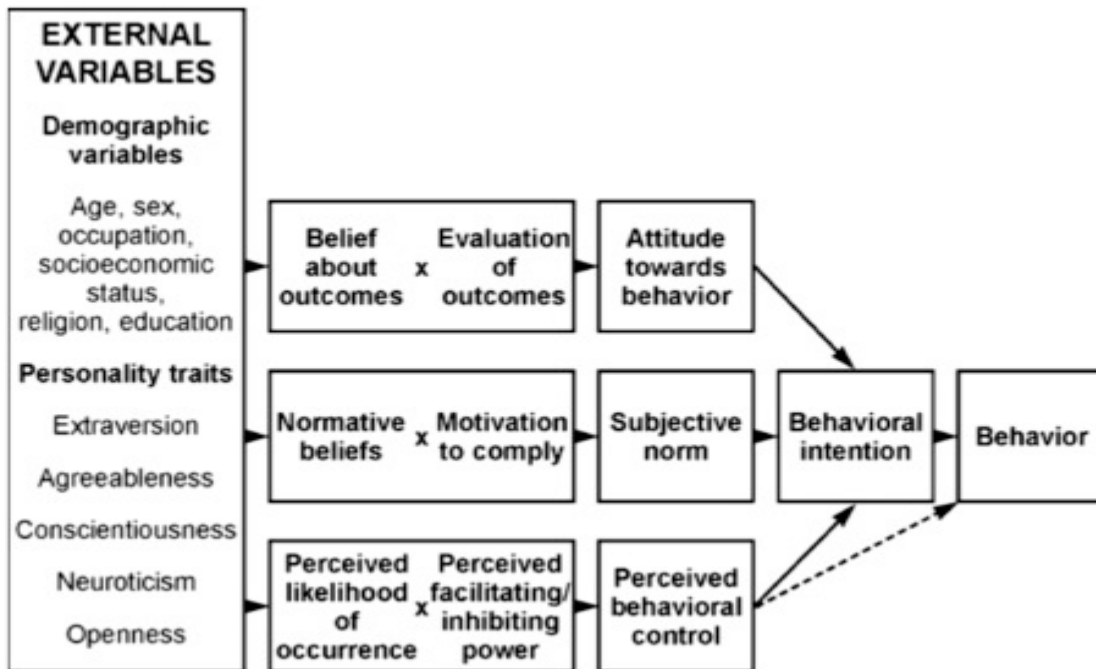
Figure 3: Review of Theory of Planned Behaviour (TPB)

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Therefore, in conclusion, according to TPB, individuals are likely to intend to follow a particular health action if they believe that the behaviour will lead to particular outcomes which they value, if they believe that people whose views they value think they should carry out the behaviour, and if they feel that they have the necessary resources and opportunities to perform the behaviour.

2.2: Mean Caesarean Section Rate (CSR)

CESAREAN SECTION DELIVERY RATE is the total number of resident caesarean deliveries among woman divided by the total number of all deliveries for a specified geographical area (country, province, city or hospital) during a specified time period per 100 live births (Anon., 2018). It's sometimes expressed in percentage (%). In recent years, caesarean section rates continue to evoke worldwide concern because of their steady increase, lack of consensus on the appropriate caesarean section rate and the associated short- and long-term risks (Manyeh, at al., 2018).

At the close of the year 2015, the Sustainable Development Goals (SDGs) emerged with a target to bring a reduction in maternal mortality ratio (MMR) to less than 70 per 100,000 live births worldwide, and to ensure healthy lives for all at all ages by 2030 (United Nations [UN], 2015). Even so, with the immense global interventions to reduce the problem of maternal and child deaths due to complications in pregnancy and delivery, the magnitude of maternal mortality remains high, especially in sub-Sahara Africa region (Sanni, et al., 2018). The authors have argued that, in the quest to achieve SDG-3, equity and equality in availability to emergency obstetric care including assisted vaginal delivery together with safe caesarean section (C-

section) is exceedingly essential. C-section is a known life-saving procedure for both mother and child.

A study in South-Western China found that caesarean delivery rate ranged from 53.5% to 56.1% in 2001-2004 and from 43.9% to 36.1% in 2005-2011. When 2001-2004 and 2005-2011 were treated as "before" and "after" periods to evaluate their intervention's impact on the mean caesarean section rate, a significant reduction was noted: from 54.8% to 40.3% (odds ratio, OR: 0.56; 95% confidence interval, CI: 0.52-0.59; $\chi(2)$ test: $P < 0.001$) (Runmei, et al., 2012). Mia, et al. (2019) asserted that changes in maternal socio-demographic characteristics and institutional professionalism increasing malpractice pressure, and economic growth have led to increase in CSR in the last decade. This view is supported by other authors who concluded that Socio-demographic and economic characteristics are contribute to birth method selection and midwives and prenatal classes are the main resource for giving information about the advantages of vaginal delivery and disadvantages of Caesarean section. Well-designed Studies in this area is very few and further studies are recommended *(Abbaspoor & Noori, 2016).*

In another study, it is said that the incidence rates of Caesarean section vary widely worldwide (Liu, et al., 2007; Festin, et al., 2009). Many countries are taking measures to reduce and/or prevent the increase of Caesarean Section rates to meet the World Health Organization recommendation (Shamshad, 2008; Organization for Economic Co-operation and Development [OECD], 2017). However, the CSR in some countries are significantly above the WHO recommendation, for example, Turkey (53.1% of births), Mexico (46.8%), Chile (45%), Italy (35.3%) and the USA (32.2%). In contrast, other countries, including Iceland (16%), Israel (16.2%), Sweden (17.3%) and Norway (16.1%), have CS rates at or near the recommendation (OECD, 2017). Nevertheless, caesarean delivery continues to result in increased maternal

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mortality, maternal and infant morbidity and increased complications for subsequent deliveries, raising questions about the appropriateness of caesarean deliveries that may not be medically required.

According to World Health Organization [WHO] (2015), the ideal rate for caesarean sections is between 10-15%. Over the years, however, caesarean sections have become increasingly common in both developed and developing countries. When medically necessary, a caesarean section can effectively prevent maternal and newborn mortality. WHO further argues that when caesarean section rates rise towards 10% across a population, the number of maternal and newborn deaths decreases. When the rate goes above 10%, there is no evidence that mortality rates improve. The lack of a standardized internationally-accepted classification system to monitor and compare caesarean section rates in a consistent and action-oriented manner is one of the factors that has hindered a better understanding of the trend of Caesarean section rates.

In a similar study in Africa, results showed disparities in the percentage of C-section among women from 34 SSA countries. C-section at public healthcare settings ranged from 3% in Burkina Faso to 15.6% in Ghana. However, in private healthcare settings, C-section ranged from 0% in Sao Tome and Principe to 64.2% in Rwanda. Overall, C-section was 7.9% from public healthcare and 12.3% from private healthcare facilities respectively (Sanni, et al., 2018).

Caesarean section rates are high and continue to rise in developed countries. However, the impact of guidelines and recommendations in curbing their growth has been limited (Lauer, Betrán, Merialdi and Wojdyla, 2010). In 1985, representatives of a study group convened by the World Health Organization wrote, "there is no justification for any region to have caesarean section rates higher than 10–15%" (WHO, 1985).

According to Rahman, et al. (2018), Caesarean section (CS) has been on the rise worldwide and Bangladesh is no exception. In Bangladesh, the CS rate, which includes both institutional and community-based deliveries, has increased from about 3% in 2000 to about 24% in 2014.

2.3: Predisposing Factors of Caesarean Section

According to OECD (2017), rates of caesarean delivery have increased over time in nearly all OECD countries, although in a few countries this trend has reversed, at least slightly, in the past few years. Similar studies showed similar results (Manyeh, at al., 2018). Reasons for the increase include the rise in first births among older women and in multiple births resulting from assisted reproduction, malpractice liability concerns, scheduling convenience for both physicians and patients, and the increasing preference of some women to have a caesarean delivery, among others. Nonetheless, caesarean delivery continues to result in increased maternal mortality, maternal and infant morbidity, and increased complications for subsequent deliveries, raising questions about the appropriateness of caesarean deliveries that may not be medically required.

In China the *rate of C-Section* increased from 0.8% in 1993 to 16.6% in 2008 in rural areas and from 5.9% to 36.4% in urban areas. The rise among women with a first pregnancy was also dramatic: in the 2008 survey, 28.2% of rural primiparous women and 57.1% of urban primiparous women reported giving birth by *caesarean section* (Feng, Xu, Guo and Ronsmans, 2012). The authors then concluded that the large variation in caesarean section rate by socioeconomic region--independent of individual income, health insurance or education-- suggests that structural factors related to service supply have influenced the increasing rate more than a woman's ability to pay.

A study in Ghana by Manyeh, et al. (2018) found that the overall C-section rate was 6.59%. Women aged 30–34 years were more than twice likely to have C-section compared to those less than 20 year (OR: 2.16, 95% CI: 1.20–3.90). And yet, women aged 34 years and above were more than thrice likely to undergo C-section compared to those less than 20 year (OR: 3.73, 95% CI: 1.45–5.17).The odds of having C-section was 65% and 79% higher for participants with Primary and Junior High-level schooling respectively (OR: 1.65, 95% CI: 1.08–2.51, OR:1.79, 95%CI: 1.19–2.70). The likelihood of having C-section delivery reduced by 60, 37, and 35% for women with parities 2, 3 and 3+ respectively (OR:0.60, 95% CI: 0.43–0.83, OR: 0.37, 95% CI: 0.25–0.56, OR:0.35, 95% CI: 0.25–0.54). There were increased odds of 36, 52, 83% for women who belong to poorer, middle, and richer wealth quintiles respectively (OR: 1.36, 95%CI: 0.85–2.18, OR: 1.52, 95% CI: 0.97–2.37, OR: 1.83, 95% CI: 1.20–2.80). Participants who belonged to the richest wealth quintile were more than 2 times more likely to have C-section delivery (OR: 2.14, 95%CI: 1.43–3.20). The authors then concluded that Age of mother, educational level, parity, household socioeconomic status, district of residence, and level of education of household head are associated with caesarean section delivery.

Similar study was conducted in Italy. The frequency of caesarean section rose from 11.2/100 deliveries in 1980 to 14.5/100 in 1983. Caesarean section rates were lower in the Southern (less rich) areas, and rose steadily with maternal age, being about three times higher in women aged greater than or equal to 40 years than in teenagers. Maternal education was directly associated with caesarean section rates: compared with women with only primary school education, those with a college education reported an about 40% higher rate of caesarean section. The C-section rate was 13.3/100 deliveries in public hospitals and 11.8/100 in private ones, but this reflected the different utilization of public and private services in various geographical areas. Caesarean

section rates were about 20% higher in nulliparous than in parous women and the rates increased with number of stillbirths or miscarriages; further, the rate ratio was about double in multiple than in single births (Parazzini, Pirotta, La Vecchia and Fedele, 1992)

In their study in rural community, which included 224 study subjects who have undergone 389 deliveries, similar results were obtained. Of all the respondents, 54% were by caesarean section and 46% were normal deliveries. Age of mother, type of family, educational status of mother, height of mother and place of delivery were identified as relevant variables. Their association with C-sec rates and time trend of c-sec rates are presented (*Karna and Malhotra, 2017).*

In Bangladesh, Mia, et al. (2019), found that *a*bout 26% of the total births were delivered as Caesarean Section (CS). The CS delivery was significantly associated with women's socio-demographic characteristics. The results revealed that CS delivery was higher among the women who delivered a boy child (28.5%), followed by women with higher education (34.0%), lower gestational age (47.1%) and living in households with highest socioeconomic status (41.4%) compared to their counterparts such as who delivered a girl child (22.5%), lower education (18.1%), higher gestational age (21.4%) and living in households with lowest socioeconomic status (13.6%).

Again, according to Rahman, et al. (2018), factors like mother being older, obese, residing in urban areas, first birth, maternal perception of large new-born size, husband being a professional, had higher number of antenatal care (ANC) visits, seeking ANC from private providers, and delivering in a private facility were statistically associated with higher rates of C-section. The authors further asserted that older mothers aged 25–29 years and 30–49 years had higher odds of delivery by CS [OR = 2.29; CI = 1.55–3.38 and OR = 2.37; CI = 1.47–3.81 respectively] than adolescent mothers aged 15–19 years. Mothers who were employed had less odds of CS done

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[OR = 0.75; CI = 0.57–1.00] than who were not employed; while the mothers whose husbands are professionals had higher chance of getting CS done [OR = 1.62; CI = 1.00–2.64] than mothers whose husbands were farmers/workers. Chance of CS decreases with higher birth order, e.g., second birth order [OR = 0.58; CI = 0.43–0.78], and third order or higher [OR = 0.42; CI = 0.29–0.63] in comparison to the first birth. Mothers who lived in urban areas had higher odds of CS delivery [OR = 1.91; CI = 1.15–3.16] than mothers who lived in rural areas. Mothers who belonged to higher wealth quintiles had more chance of getting CS, example, middle [OR = 1.62; CI = 1.03–2.54], richest [OR = 1.98; CI = 1.18–3.32]. Mothers who received higher number of antenatal care visits from private facilities had higher chance of CS delivery, e.g., 1–2 visits [OR = 2.31; CI = 1.44–3.70], and 3 or more [OR = 3.47; CI = 2.18–5.52]. Mothers who had delivery in private facilities had higher chances of CS done [OR = 47.73; CI = 34.24–66.54]. If the delivery is conducted in an urban private facility the odds of it being a caesarean section are 50 times higher than it being a normal delivery.

Other scholars assert that since Caesarean delivery rates are rising in many parts of the world, to define strategies to reduce them, it is important to identify their clinical and organizational determinants (Stivanello, Rucci, Lenzi and Fantini, 2014).

The findings by Rahman, et al. (2018) were as follows; almost half (50%) of the mothers had secondary education (47.7%), and CS delivery is higher among the bachelor or higher educated mothers (56.9%) which are statistically significant. Similarly, more husbands had secondary education (31.8%); whereas, the CS was more prevalent among higher educated husbands (55.3%). Only 23.7% mothers reported to be employed in income-earning activities and CS was prevalent among mothers who were not employed (26.1%) which is statistically significant. Most of the husbands were farmers or workers (45.0%); while CS was conducted more for mothers

whose husbands were professionals (57.6%; p<0.0001). Almost equal number of mothers watched TV for at least once a week and those who did not, but CS was conducted more for the mothers who had more exposure to media (36.0%; p<0.0001). Most of mothers reported their first pregnancy (39.9%) and they also experienced CS most (31.8%; p<0.0001). While most of the respondents lived in rural areas (73.9%), two-fifths (40.0%; p<0.0001) of the urban mothers underwent CS. Mothers belonged to richest wealth quintile also experienced CS more (53.5%; p<0.0001).

Furthermore, according to Anon. (2018), during 2004-2006 (average) in the United States, the rate of Caesarean deliveries was highest for women ages 40 and older (46.1%), followed by women ages 30-39 (36.0%), ages 20-29 (27.2%) and under age 20 (21.4%). C- section birth rates were highest for Black infants (32.1%), followed by Whites (29.9%), Asians (29.6%) and Native Americans (26.2%). Compared with singleton births (one baby), multiple births in the United States were about 2 times as likely to be delivered by caesarean in 2006.

Kpozehouen, et al. (2019) found that the probability of caesarean delivery was higher with women aged 45 years and older (OR = 3.33, 95% CI = [1.85, 6.01]), living in urban areas (OR = 1.41, 95% CI = [1.08 1.84]), from rich or very rich households (OR = 1.98, 95% CI = [1.29, 3.05], OR = 1.87, 95% CI = [1.19, 2.96] respectively) and educated (OR = 1.63 95% CI = [1.19, 2.24] and OR = 1.81, 95% CI = [0.97, 3.39] for the secondary and upper levels respectively).

2.4: Lived experiences of mothers who had Caesarean Section delivery

According to Rahman, et al. (2018), Mothers reported, Convenience and labour pain avoidance as two major reasons which contributed to their elective CS (CS not indicated by medical reasons). They established the reasons for choosing CS by principal decision makers, such as, doctor or mother. In most of the cases (71.5%), doctors took the final decision for CS. Other

complications were the principal reasons cited by mothers (29.9%) followed by malpresentation (20.9%), convenience (16.9%), and labour pain avoidance (15.1%). On the other hand, malpresentation was the major cause for the doctors (37.3%) followed by other complications (33.8%), failure to progress in labour (18.8%), and previous CS (13.9%).

In another study, the author argued that the notion that a caesarean delivery was safer for the baby reinforced the participants' feelings of not having a choice. One participant explained, *"I wanted desperately to birth vaginally, but I opted for the planned caesarean, as in the end the risk to the baby was much less."* These women were willing to forego their own desires for a vaginal birth in order to provide what they felt was the safer alternative for their baby (Puia, 2018).

2.5: Attitudes of Health managers towards monitoring and evaluating Caesarean Section

In their study in Bangladesh, Rahman, et al. (2018) concluded that health system urgently needs policy guideline with monitoring of clinical indications of Caesarean Section deliveries to avoid unnecessary C-Section. Strict adherence to this guideline, along with enhance knowledge on the unsafe nature of the unnecessary C-Section can achieve increased institutional normal delivery in future; otherwise, an emergency procedure may end up being a lucrative practice

2.6: Conclusion

Since 1985, it has been considered that the ideal rate for caesarean sections was between 10% and 15%. Since then, caesarean sections have become increasingly common in both developed

and developing countries. When medically justified, a caesarean section can effectively prevent maternal and perinatal mortality and morbidity. However, there is no evidence showing the benefits of caesarean delivery for women or infants who do not require the procedure. As with any surgery, caesarean sections are associated with short- and long-term risk which can extend many years beyond the current delivery and affect the health of the woman, her child, and future pregnancies. During 2004-2006 (average) in the United States, the rate of Caesarean deliveries was highest for women ages 40 and older (46.1%), followed by women ages 30-39 (36.0%), ages 20-29 (27.2%) and under age 20 (21.4%). C- section birth rates were highest for Black infants (32.1%), followed by Whites (29.9%), Asians (29.6%) and Native Americans (26.2%). Compared with singleton births (one baby), multiple births in the United States were about 2 times as likely to be delivered by Caesarean in 2006.Therefore, health system urgently needs policy guideline with monitoring of clinical indications of Caesarean Section deliveries to avoid unnecessary C-Section. Strict adherence to this guideline, along with enhance knowledge on the unsafe nature of the unnecessary C-Section can achieve increased institutional normal delivery in future

CHAPTER THREE

RESEARCH METHODOLOGY

3.0: Introduction

This chapter describes the methodology that was used to conduct the study. The highlights on the study design, study population, sample size determination and sampling techniques used to select samples are made. It further highlights the research tools used, data presentation and ethical concerns taken care of, among others.

3.1: Study Area

The study was conducted in St. Joseph's Hospital _ Kitovu, in Masaka district, Uganda. Kitovu Health Care Complex, known as St. Joseph's Hospital, is located in Masaka town, Uganda, about 140km from the capital Kampala. It is a 248-bed capacity Private Not for Profit (PNFP) Hospital, operating under the umbrella organization of the Uganda Catholic Medical Bureau (UCMB). It is a general hospital offering; 24-hour emergency service, Obstetrics/Gynecology, Neo-Natal/Baby Unit, Pediatrics, Surgery, Vesico-Vaginal Fistula Repair (VVF) and Prevention, Pastoral Care, Intern and Outreach Programs, Laboratory Training School and HIV/AIDS-programs (Kitovu Hospital Masaka, 2017)

Figure 4: Out-patient Department of St. Joseph Hospital _ Kitovu

3.2: Study Design

The design was a Descriptive and Analytical Cross-sectional study, undertaken before August, 2019. It took both qualitative and quantitative dimensions. The choice of this design was based on the Strengths of the design. These are; relatively quick and easy to conduct (no long periods of follow-up), Data on all variables is only collected once, Ability to measure prevalence for all factors under investigation, Multiple outcomes and exposures can be studied, among others (Health Knowledge, 2017).

3.3: Study Population

The study populations were mothers admitted to the maternity ward of St. Joseph's Hospital _ Kitovu and health managers of the health facility.

3.4: Study Unit

The units of study were; a mother admitted to the maternity ward of St. Joseph's Hospital _ Kitovu and a health manager of the health facility.

3.5: Inclusion and Exclusion Criteria

3.5.1: Inclusion Criteria

The respondent mothers included those pregnant mothers who had been admitted to Maternity ward or all who delivered from the ward within the study period. The respondent health managers who were top level decision-makers of the health facility or working in maternity ward and are available at the study time were included.

3.5.2: Exclusion Criteria

The pregnant mothers who were not admitted to Maternity ward or who delivered from outside the maternity ward within the study period were excluded. The respondent health managers who were the top level decision-makers of the health facility or working in maternity ward and were not available at the study time were excluded.

3.6: Sample size Determination

The formula for calculation of sample size (***n***) when population size (**N**) is known was used to determine the sample size. This is called *Taro* Yamane formula (1967:886) and it provides a simplified formula to calculate sample sizes (Israel, 1992; Polonia, 2013). Assuming a 95% confidence level and maximum degree of variability of the attributes in the population, p = 50% (0.5), the sample size was calculated as below;

Thus, using the formula; $n = \dfrac{N}{[1+N(e^2)]}$

Where n is the sample size, N is the population size and e is the level of precision (Sampling error – 5%).

Note that the degree of variability in the attributes (P) being measured refers to the distribution of attributes in the population. The more heterogeneous a population, the larger the sample size required to obtain a given level of precision. The less variable (or more homogeneous) a population is, the smaller the sample size. Hence, a proportion of 50% indicates a greater level of variability than either 20% or 80%. This is because 20% and 80% indicate that a large majority do not or do, respectively, have the attribute of interest. Because a proportion of .5 indicates the maximum variability in a population, it is often used in determining a more conservative sample size, that is, the sample size may be larger than if the true variability of the population attribute were used (Israel, 1992, Polonia, 2013).

Over the seven-month period, the total in-patient admission was **1534mothers**, with average of **220 mothers** per month.

Thus;

Samples (n):

$$n = \frac{1534}{[1+1534(0.05^2)]} = \frac{1534}{[1+3.835]} = 317.269907 \approx \textbf{318respondents}$$

Four (4) respondents health managers were purposively selected to ascertain institutional attitudes towards monitoring and evaluating Caesarean Section. They were the key informants.

3.7: Sampling Procedures

A purposive sampling technique was used to identify the key informants to be interviewed. Selection of these informants was predetermined before starting the study.

However, a Simple random technique was used to identify the respondent mothers. All mothers who met the inclusion criteria were assigned a random number, and the researcher had copies of those random numbers in wrap-up pieces of paper. The researcher then drew the numbers representing each mother randomly from the different group of mothers. This exercise continued by way of picking until the sample size, n, is reached. Using these numbers, the researcher went to the wards where the mothers were, traced the mothers using the numbers and interviewed them there and then.

Proportionate sampling technique was used to draw the respondent mothers from each category as shown below;

Table 1: Proportionate sampling of Respondents

Admission= 1534	Other mothers = 612	Total SVD = 476	Total C-section = 439	Total Vacuum extraction= 7
	n_1= 318-(193) = **125Mothers**	n_2= $\frac{476}{1534}$ x 318 = **99 Mothers**	n_3= $\frac{439}{1534}$ x 318 = **92 Mothers**	n_4= $\frac{7}{1534}$ x 318 = **2 Mothers**

Sample Size, $n = n_1 + n_2 + n_3 + n_4$ = 318 mothers

SVD = Spontaneous Vaginal Delivery, **C-Section** = Caesarean Section Delivery

3.8: Research Variables

The dependent (Outcome) variables were the mother's delivery mode, "Vaginal birth – No C-section" or "Caesarean Section", "Number of Caesarean Section conducted" and "Number of total in-patient admissions made". On the other hand, the independent (explanatory) variables were; the "Socio-demographic, Socio-economic, Pre-natal and family factors", with details shown in table 2 below.

Table 2 : Study variables used

Variable sub-categories	Specific variables

Dependent (Outcome) variables	❖ Mother's delivery mode;
	    ➢ Caesarean Section
	    ➢ No C-section (Vaginal birth)
	❖ Number of monthly Caesarean Section conducted
	❖ Number of total deliveries conducted
	❖ Number of monthly total in-patient admissions made

Independent (Explanatory) variables	❖ **Socio-demographic factors:**
	    ➢ Age
	    ➢ Marital status
	    ➢ Educational level
	    ➢ Living environment (rural vs urban)
	❖ **Socio-economic factors:**
	    ➢ Regular House Hold income
	    ➢ Occupation
	❖ **Pre-natal factors:**
	    ➢ Parity
	    ➢ Gravidity
	    ➢ Gestational age
	    ➢ Doctor's suggestion
	    ➢ Counselling directed toward preferred choice
	❖ **Family factors:**
	    ➢ Husband's preference
	    ➢ Self-evaluated difficulty in getting pregnant
	
	❖ Attitudes of health managers towards monitoring & evaluating Caesarean Section [*Thoughts about CSR, Presence of M & E in the facility, Management ever involved in M & E of C-Section, Views about regularizing M & E of C-Section*]

3.9: Data Collection Sources, Tools and Techniques

3.9.1: Data Sources

Both secondary and primary data were used. The secondary data from patient files (hospital record) for the past 6months from January, 2019 to July, 2019 was retrieved. These are the records of patients admitted to Maternity wards. On the other hand, primary data was collected from respondent pregnant mothers and key informant health managers.

3.9.2: Data Collection Tools and Techniques

The following tools were used; Document Review Guide (Observation Checklist), Interview guides (for key informants & mothers) and Semi-structured questionnaires.

Document Review Guide was used to guide and extract information, for the past six (6) months, on the numbers of Caesarean Sections conducted, total number of deliveries conducted and number of total in-patient admission made. Interview guide was used to extract information on health managers' attitudes toward monitoring and evaluating Caesarean Section as well as mothers' lived experiences. Lastly, semi-structured self-administered questionnaire was used by the researcher to record individual responses from the mothers.

3.10: Data Entry, Analysis and Presentation Methods

The data generated was entered into Microsoft excel and Statistical Package for Social Sciences (SPSS) software of a computer for analysis. With the use of this software, analysis was made easier. Likewise, the qualitative data were coded, transcribed and content analysis done. Themes and sub-themes were generated. The results were presented in narrative/descriptive statements, tables and graphs as appropriate.

3.11: Quality Control Measures

3.11.1: Reliability

Reliability refers to the consistency of a measure. According to Price, Jhangiani& Chiang (2018), researchers consider three types of consistency: over time (test-retest reliability), across items (internal consistency) and across different researchers (inter-rater reliability). This study, however, focused on internal consistency and test-retest reliability. Assessing test-retest reliability requires using the measure on a group of people at one time, using it again on the *same* group of people at a later time and then looking at test-retest correlation between the two sets of scores. For this study, pre-testing and retesting of the construct was done to ascertain the reliability, without test correlation. Non-response factor was computed and taken into account. Similarly, internal consistency**,** which is the consistency of people's responses across the items on a multiple-item measure, was ascertained. The data generated was double-checked for completeness, appropriateness and correctness before entering in the Microsoft excel sheet and Statistical Package for Social Sciences (SPSS) for analysis. After entry, another counter-check was made.

3.11.2: Validity

Validity is the extent to which the scores from a measure represent the variable they are intended to. Researchers need to make this judgment. They consider one factor that they take into account—reliability. When a measure has good test-retest reliability and internal consistency, researchers should be more confident that the scores represent what they are supposed to (Price, Jhangiani & Chiang, 2018). There are three basic kinds: face validity, content validity and criterion validity. Face validity is the extent to which a measurement method appears "on its face" to measure the construct of interest. Content validity is the extent to which a measure

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"covers" the construct of interest. For this study, therefore, both face and content validity checks were ensured by the researcher. For the qualitative data, repeated replay was made to appreciate the information and make substantive meaning out of it, that is, content checking. This enabled the development of the appropriate thematic areas (Yang, et al., 2018)

3.12: Ethical Considerations

As laid down by Centre for Innovation in Research and Teaching ([CIRT], 2018), the researcher undertook a number of ethical considerations. Clearance from the University research faculty and the Institutional Review Board (IRB) of St. Josephs' Hospital _ Kitovu were sought and hence Research and Ethic Approval (REC) obtained. The names of the respondents were not used for the analysis to conceal their identities for purpose of confidentiality. Informed consent from the respondents was sought.

3.13: Limitations of the Study

The study is expected to have two limitations;

1) Discrepancy in the monthly numbers of Caesarean Sections, total deliveries and in-patient admissions might some-how affect the quality of the result. However, by averaging methods, this short-fall was taken care of.

2) High level of subjectivity of the qualitative components might also affect the qualitative findings. Triangulation of methods was adopted to counteract this pitfall.

3.14: Plan for Dissemination

The study finding will be disseminated to the management of St. Joseph's Hospital _ Kitovu, Uganda Catholic Medical Bureau (UCMB) Secretariat and Uganda Martyrs University. Together with the supervisor, the result might also be considered for online publication.

CHAPTER FOUR

RESULTS

4.0: Introduction

This chapter presents the findings of the study. Different presentation methods were used as per the methodology. Summary of the all findings, objective-by-objective have been put as the last sub-section of this chapter.

4.1: Socio-demographic Characteristics of Respondents

The socio-demographic characteristics of the respondents were examined by univariate analysis and the results are summarized in table below.

Table 3: Socio-demographic Characteristics of Respondents

S. No	Variable category	Frequency (n=318)	Percentage
01	**Caesarean Delivery**		
	▪ Yes	92	28.9%
	▪ No	226	71.1%
02	**Age of respondents**		
	▪ Less than 20years	63	19.8%
	▪ 20-40years	192	60.4%
	▪ More than 40years	63	19.8%
03	**Marital status**		
	▪ Married	261	82.1%
	▪ Not married	57	17.9%
04	**Occupation of Respondents**		
	▪ Peasant	76	23.9%
	▪ Formally employed	82	19.5%
	▪ House wife	180	56.6%
05	**Educational level of Respondents**		

	▪ No education	74	23.3%
	▪ Primary education	68	21.4%
	▪ Post primary education	73	23.0%
	▪ Tertiary education	103	32.4%
06	**Regular Monthly Household Income**		
	▪ Less than UGX 100.000/=	124	39.0%
	▪ UGX100.000 - 300.000/=	102	32.1%
	▪ More than UGX300.000/=	92	28.9%
07	**Living Environment**		
	▪ Rural	162	50.9%
	▪ Urban	156	49.1%
08	**Parity of mothers**		
	▪ Para 0	53	16.7%
	▪ Para 1	69	21.7%
	▪ Multiparous	196	61.6%
09	**Gravidity of mothers**		
	▪ Prime-gravida	68	21.4%
	▪ Multigavida	250	78.6%
10	**Gestational Age**		
	▪ Less than 28weeks	30	9.4%
	▪ 28weeks or more	288	90.6%
11	**Preferred Choice of Mode of Delivery**		
	▪ Caesarean Section	87	27.4%
	▪ No C-Section	231	72.6%

UGX = Uganda Shillings

From table 3 above, 92 (28.9%) of the respondent mothers delivered by Caesarean Section while the rest of the respondents had other types of delivery or had not yet delivered. The other types of delivery examined in this study were; Spontaneous Vaginal Delivery (SVD) and Vaccuum extraction.

Majority of the respondents, 192 (60.4%) were aged 20-40years. The respondents who were less than 20years or more than 40years accounted for 19.8% respectively. 261 (82.1%) of the respondents were married. Most of the respondents (56.6%) were housewives, followed by

peasants at 23.9%. Majority of the respondents, 103 (32.4%) had tertiary education. The regular

monthly household income of the participants was less than UGX 100,000/= followed by those

earning between UGX100,000/= to UGX 300,000/= accounting for 39.0% and 32.1%

respectively. 50.9% of them lived in rural areas whereas 49.1% lived in urban setting. Few of the

respondents, 87 (27.4%), preferred Caesarean section as their mode of delivery whereas for most

of them, 288 (90.6%), the gestational age was 28weeks or more.

4.2: Average Caesarean Section Rate (CSR) in St. Joseph's Hospital _ Kitovu

To determine the average CSR, data was collected for the past seven months; January, 2019 to

July, 2019. Summary of data collected are shown in table 4 below

Table 4: Data Used for Computing Average CSR

Months	Number of Caesarean deliveries	Total Number of all deliveries
January, 2019	72	146
February, 2019	58	120
March, 2019	71	132
April, 2019	64	120
May, 2019	43	140
June, 2019	60	133
July, 2019	71	131
Grand Total for Each (P_1, P_2)	**439**	**922**

Average Caesarean Section Rate (CSR) $\quad = \frac{P_1}{P_2} \textbf{X 100\%} = \frac{439}{922}\textbf{X 100\%} = \textbf{ 47.6\%}$

Average Caesarean Section Delivery Rate, which is the total number of resident caesarean deliveries among woman divided by the total number of all deliveries for the specified hospital during a specified time period, was computed. The study found the Average CSR for St. Joseph's Hospital _ Kitovu was 47.6%.

4.3: Predisposing Factors of Caesarean Section Delivery

To establish the predisposing factors of Caesarean Section Delivery, in St. Joseph's hospital _ Kitovu, respondent mothers were asked related questions. Their responses where record, entered in to SPSS and bi-variate analysis was made between Caesarean delivery and the corresponding variables. A result of the bivariate analysis has been shown in table 5 below.

Table 5: Bivariate Logistic Analysis of Caesarean Delivery

S. No	Variable categories	C-Section Delivery (n=318)		X^2	df	COR	95% CI	p-value
		Yes	No				L - U	
Socio-demographic Factors								
01	Age							
	▪ Less than 20years	25(27.2%)	38(16.8%)	6.375	2			**0.041**[*]
	▪ 20-40years	49(53.3%)	143(63.3%)	2.522	1	0.378	0.114 - 1.256	0.112
	▪ More than 40years	18(19.6%)	45(19.9%)	0.240	1	1.286	0.471 - 3.514	0.624
02	Marital status							
	▪ Married	68(73.9%)	193(85.4%)					
	▪ Not married	24(26.1%)	33(14.6%)	5.863	1	2.064	1.140 - 3.739	**0.015**[*]
03	Educational level							
	▪ No education	6 (6.5%)	68 (30.1%)	32.450	3			**0.000**[*]
	▪ Primary education	13 (14.1%)	55 (24.3%)	20.338	1	4.843	1.821- 12.878	**0.000**
	▪ Post primary education	29 (31.5%)	44 (19.5%)	4.051	1	2.328	1.100 - 4.926	**0.044**
	▪ Tertiary education	44 (47.8%)	59 (26.1%)	5.370	1	1.057	0.565 – 1.976	**0.020**
04	Living environment							
	▪ Rural	24 (26.1%)	138(61.1%)					
	▪ Urban	68 (73.9%)	88 (38.9%)	32.004	1	2.764	1.542 – 4.953	**0.001**[*]

	Socio-economic Factors							
05	Regular House Hold income							
	▪ Less than UGX 100.000/=	10(10.9%)	114(50.4%)	57.796	2			**0.000***
	▪ UGX100.000 -300.000/=	31(33.7%)	71(31.4%)	43.042	1	11.106	5.047-24.436	**0.000***
	▪ More than UGX300.000/=	51(55.4%)	41(18.1%)	0.156	1	2.238	1.207-4.149	**0.011**
06	Occupation							
	▪ Peasant	31(33.7%)	45(19.9%)	28.615	2			**0.000***
	▪ Formally employed	30 (32.6%)	32 (14.2%)	6.831	1	0.359	0.186-0.964	**0.009***
	▪ House wife	31(33.7%)	149(65.9%)	14.179	1	0.369	0.185-0.737	**0.000***
	Pre-natal Factors							
07	Parity of mothers							
	▪ Para 0	0(0.0%)	53(23.5%)	26.774	2			**0.000***
	▪ Para 1	27(29.3%)	42(18.6%)	25.890	1	2.525E+10	.000 –	**0.000***
	▪ Multiparous	65(70.7%)	131(58.0%)	4.459	1	3.879	1.214 -12.397	**0.035***
08	Gravidity of mothers							
	▪ Prime-gravida	23(25.0%)	45 (19.9%)					
	▪ Multi-gavida	69(75.0%)	181(80.1%)	1.007	1	0.020	0.004 – 0.098	0.316
09	Gestational age							
	▪ Less than 28weeks	9(9.8%)	21(9.3%)					
	▪ 28weeks or more	83(90.2%)	205(90.7%)	0.018	1	1.192	0.388-3.657	0.892
10	Preferred Choice of Mode of Delivery							
	▪ Caesarean section	36(39.1%)	51(22.6%)					
	▪ No C-section	56(60.9%)	175(77.4%)	9.027	1	0.443	0.225 – 0.873	**0.003***
11	Reasons for preferred choice							
	▪ Doctor's suggestion	61(66.3%)	50(22.1%)	17.784	1	2.396	0.827 – 6.948	**0.000***
	▪ Counselling directed toward preferred choice	21(22.8%)	106(46.9%)	56.168	1	0.177	0.089 – 0.353	**0.000***
	Family Factors							
12	Reasons for preferred choice							
	▪ Husband's preference	7(7.6%)	67(29.6%)	1.320	1	0.135	.021 – 0.855	0.251
	▪ Self-evaluated difficulty in getting pregnant	3(3.3%)	3(1.3%)	60.993	3			**0.000***

X^2=Chi-Square, **df**=Degree of freedom, **COR**=Crude Odd Ration, **CI**=Confidence Interval, **p-value** = Probability value, **L**=Lower limit, **U**=Upper limit, **UGX**=Uganda Shillings, **C-Section** = Caesarean Section

From table 5 above, the study found a number of predisposing factors were associated or influenced Caesarean delivery in St. Joseph's Hospital Kitovu. These were; Age of respondent less than 20years (p<0.041), not being married (p<0.015), educational level of respondents (p<0.000), living in urban setting (p<0.001), among others. All the socio-economic factors

(regular household income, p<0.000, and occupation, p<0.000) highly influenced caesarean delivery in the health facility. On the other hand, gestational age (p=0.892) and gravidity (p=0.316) of the mothers did not influence Caesarean delivery.

The study found that 53.3% of the respondents who had Caesarean delivery were 20-40years of age and that being in this age category is 0.4times less likely to predispose one to Caesarean delivery (COR =0.378, CI(0.114-1.256)). Conversely, being more than 40years of age is 1.3times more likely to make the respondent deliver by Caesarean section (COR=1.286, CI(0.471 - 3.514)). Not being married was a predisposing factor of Caesarean delivery (p<0.015) and again these respondents 2times more likely to deliver by Caesarean section than the married counterparts (COR=2.064, CI(1.140 - 3.739)). It is 4.8times, 2.3times and 1.1times more likely for the respondents who had Primary, Post-primary and tertiary education respectively to deliver by Caesarean section than those who had no education (COR=4.843, CI(1.821- 12.878); COR=2.328, CI(1.100 - 4.926); COR=1.057, CI(0.565 – 1.976)).

Mothers who lived in urban setting were 2.8times more likely to deliver by Caesarean section as opposed to their rural counterparts (p<0.001, COR= 2.764, CI(1.542 – 4.953). Respondents who earned UGX100.000/= to UGX300.00/= and those who earned more than UGX300.000/= were 11times and 2times more likely to deliver by Caesarean section (COR= 11.106, 2.238 respectively) than those mothers who earned less than UGX100.000/=. Whereas occupation was highly significant to delivering by Caesarean section (p<0.000), the formally employed mothers and housewives were found to be 0.3times less likely to deliver by Caesarean section than their peasant counterparts (COR=0.359, CI(0.186-0.964); COR=0.369, CI (0.185-0.737)) respectively.

Parity of the mothers was highly determinant of one's delivery by Caesarean section (p=.000). Even so, Multiparous mothers were 4.5times more likely to deliver by Caesarean section than the

Paro 0 and Para 1 mothers (COR=3.879, CI (1.214 -12.397)). Similarly, mothers whose preferred choice of mode of delivery was no C-section were o.4times less likely to deliver by Caesarean section (COR=0.443, CI (0.225 – 0.873)). Lastly, mothers whose reason for preferred choice of mode of delivery was based on doctor's suggestion were 2.4times more likely to deliver by Caesarean section. Likewise, mothers whose choice of mode of delivery was based on husband's preference were less likely to deliver by Caesarean section (COR=0. 135, CI (0.021 – 0.855)).

4.4: Attitudes of Managers Toward Monitoring and Evaluating CSR

To determine the attitudes of managers towards monitoring and evaluating CSR in St. Joseph's Hospital _ Kitovu, four (4) top-level healthcare managers were interviewed. The said managers were asked specific questions, later used to determine attitudes of managers towards monitoring and evaluating CSR.

Table 6 below is the summary of characteristic of managers interviewed;

Table 6: Characteristics of Respondents Health Managers Interviewed

Manager	Sex	Age	Marital status	Duration of service	Department
W	Male	44	Married	Less than 2years	Administration
X	Male	40	Married	At least 2-5years	Administration
Y	Female	47	Married	At least 2-5years	Maternity
Z	Female	40	Married	At least 2-5years	Operating Theatre

Themes were developed through reading, analysis, reflection and classification of the data.This thematic analysis of the interviews resulted in four themes: *'Thoughts about CSR', 'Presence of*

M & E system in the facility', 'Management ever involved in M & E of C-Section' and 'Views about regularizing M & E of C-Section'. Table 7 below shows the themes and corresponding sub-themes that emerged

Table 7: Themes and Sub-themes That Emerged

01	**Attitudes of managers towards monitoring & evaluating Caesarean Section Rates**	**Theme 1:** *Thoughts about CSR*
		Theme 2: *Presence of M & E system in the facility* *Sub-theme (a): M & E for some departments* *Sub-theme (b): No M & E for Caesarean Section*
		Theme 3: *Management ever involved in M & E of C-Section*
		Theme 4: *Views about regularizing M & E of C-Section* *Sub-theme (a): Negative views* *Sub-theme (b): Positive views*

Theme 1: Thoughts about CSR

The respondents were asked about their thoughts on CSR in St. Joseph's Hospital _ Kitovu and their thoughts were positive about CSR. Many of them believed that they have competent teams, including full time Obstetricians and for that matter the rate of Caesarean was alright. For example, one respondent had this to say,

> *"[…] what do you mean? Here we have a team of qualified medical personnels ranging from intern doctors, medical officers and three (3) resident Obstetricians. So, I believe the rate of Caesarean delivery must be ok […]",* **Said Respondent W.**

Another respondent reported as,

> *"[…] sometime back we had a team from Ministry of Health who came for supervision here and they complained that our CSR is higher. But it ended there. So, I think we are doing well. Yes, there may be slight difference from other facilities […]",* **reports Respondent Y**

Therefore, in a nut shell, the managers seem to suspect that CSR may be high in the facility. They were not sure by how much.

Theme 2: Presence of M & E system in the facility

When managers were asked to state whether or not the health facility had functional monitoring and evaluation system, two sub-themes emerged; Sub-theme **(a)** M & E for some departments and Sub-theme **(b)** No M & E for Caesarean Section. Indeed all the four managers reported that there was monitoring and evaluation system but not applied in monitoring and evaluating Caesarean delivery. One respondent reported as;

> *"[…] Yes, we have a fully functional M & E system….. We have used it in many departments. But I don't remember using it for monitoring Caesarean deliveries [….]",* **reports Respondent W**

Another respondent reported as below;

> *"For us, here in theatre, we monitor and evaluate many things. But we don't monitor and evaluate CSR. We only record all Caesarean deliveries month by month […]",* **Said Respondent Z**

These responses are clear that M & E system is available but not intended for monitoring and evaluating CSR.

Theme 3: Management ever involved in M & E of C-Section

Managers were asked whether they had ever done monitoring and evaluation of CSR in this health facility, and if so, what they found. The responses got showed that all the four managers never participated in any M & E of CSR in the facility.

One respondent reported as;

> *"[…] No, we don't monitor and evaluate CSR. We simply rely of the expertise of the Obstetricians and Medical Officers, because we believe that they are experienced enough to do quality Caesarean sections […]",* **said Respondent W**

Theme 4: Views about regularizing M & E of C-Section

When managers were asked to state their views about regularizing M & E of Caesarean deliveries, the views were mixed between negative and positive views. These were sub-categorized as; Sub-theme **(a)**-Negative views and Sub-theme **(b)** - Positive views.

One respondent had this to say,

> *"[…] whereas regularizing CSR is good, what impact will it have on the independency of the doctors to make decisions. Doctors will be too restricted to the point that many mothers may end up dying of complication because doctors will fear to take them to theatre for Caesarean section. This will increase maternal death […]", **said Respondent X***

This view, alongside with others similar to it, was viewed as negative views towards regularizing

M & E of Caesarean section.

Conversely, another respondent reported as below;

> *"For me I think it is ok to regularize M & E of Caesarean delivery, if ministry of health thinks so. This will even eliminate irrational Caesarean deliveries […]",* **reports Respondent Z**

> **Respondent W** said, *"[…] Yes, we may need to follow standard operating procedures. So, regularizing it is good but this must be across the country"*

These last two views are in support of regularizing monitoring and evaluation of CSR, hence

positive views from health managers.

4.5: Summary of Findings

The study found the Average CSR for St. Joseph's Hospital _ Kitovu was 47.6%. It also found a number of predisposing factors were associated or influenced Caesarean delivery in St. Joseph's Hospital Kitovu. These were; Age of respondent less than 20years ($p < 0.041$), not being married ($p < 0.015$), educational level of respondents ($p < 0.000$), living in urban setting ($p < 0.001$), among others. All the socio-economic determinants (regular household income, $p < 0.000$, and

occupation, p<0.000) highly influenced caesarean delivery in the health facility. On the other hand, gestational age (p=.892) and gravidity (p=.316) of the mothers did not influence Caesarean delivery.

The study found that 53.3% of the respondents who had Caesarean delivery were aged 20-40years and that being in this age category is 0.4times less likely to predispose one to Caesarean delivery (COR =0.378, CI(0.114-1.256)). Conversely, being more than 40years of age is 1.3times more likely to make the respondent deliver by Caesarean section (COR=1.286, CI(0.471 - 3.514)).

Mothers who lived in urban setting were 2.8times more likely to deliver by Caesarean section as opposed to their rural counterparts (p=.001, COR= 2.764, CI(1.542 – 4.953). Respondents who earned UGX100.000/= to UGX300.00/= and those who earned more than UGX300.000/= were 11times and 2times more likely to deliver by Caesarean section (COR= 11.106, 2.238 respectively) than those mothers who earned less than UGX100.000/=.

Lastly, mothers whose reason for preferred choice of mode of delivery was based on doctor's suggestion were 2.4times more likely to deliver by Caesarean section. Likewise, mothers whose choice of mode of delivery was based on husband's preference were less likely to deliver by Caesarean section (COR=0. 135, CI (0.021 – 0.855)).

The views of the health manager were in support of regularizing monitoring and evaluation of Caesarean Section Rates (CSR).

Qualitatively, there were mixed views about regularizing monitoring and evaluation of Caesarean delivery in the health facility. Some managers believed it is alright to do so while others are very much reserved about it.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.0: Introduction

The study findings, objective by objective and the conclusion as well as the recommendations have been discussed in the respective sub-sections of this chapter. The findings were compared to those got in studies elsewhere across the globe.

5.1: Discussion of Results

The study had three specific objectives. These were to determine the average Caesarean Section Rate (CSR), establish the predisposing factors of Caesarean delivery and ascertain the attitude of managers towards monitoring and evaluating CSR.

5.1.1: Average Caesarean Section Rates (CSR)

This study found the average CSR over a seven (7) month period was 47.6%, far much higher the World Health Organization recommendation of 10-15%. According to World Health Organization [WHO] (2015), the ideal Caesarean Sections Rate (CSR) is between 10-15%. Over the years, however, caesarean sections have become increasingly common in both developed and developing countries. When medically necessary, a caesarean section can effectively prevent maternal and newborn mortality. They further argued that whereas, when CSR rise towards 10% across a population, the number of maternal and newborn deaths decreases. When the rate goes above 10%, there is no evidence that mortality rates improve. The lack of a standardized internationally-accepted classification system to monitor and compare CSR in a consistent and action-oriented manner is one of the factors that has hindered a better understanding of the trend of Caesarean section rates.

Even so, with the immense global interventions to reduce the problem of maternal and child deaths due to complications in pregnancy and delivery, the magnitude of maternal mortality remains high, especially in sub-Sahara Africa region (Sanni, et al., 2018). According to Rahman, et al. (2018), Caesarean section (CS) has been on the rise worldwide and Bangladesh is no exception. In Bangladesh, the CS rate, which includes both institutional and community-based deliveries, has increased from about 3% in 2000 to about 24% in 2014. In fact, Rahman, et al. (2018) found that out of 4,627 mothers who delivered in health facilities, 1,122 (24%) delivered through Caesarean Section.

However, many countries are now taking measures to reduce and/or prevent the increase of Caesarean Section rates to meet the World Health Organization recommendation (Shamshad, 2008; Organization for Economic Co-operation and Development [OECD], 2017). Finding of this study is much higher than those in Ghana (Manyeh, et al., 2018). In that study, the overall C-section rate for the study period was 6.59%. Women aged 30–34 years were more than twice likely to have C-section compared to those < 20 year (OR: 2.16, 95% CI: 1.20–3.90). However, women aged 34 years and above were more than thrice likely to undergo C-section compared to those < 20 year (OR: 3.73, 95% CI: 1.45–5.17). Kpozehouen, et al. (2019) found that the percentage of mothers who gave birth by caesarean section was 6.84%, which is lower than the one found in this study.

5.1.2: Predisposing Factors of Caesarean Delivery

This study found a number of predisposing factors were associated or influenced Caesarean delivery in St. Joseph's Hospital Kitovu. These were; Age of respondent less than 20years (p=.041), not being married (p=.015), educational level of respondents (p=.000), living in urban

setting (p=.001), among others. All the socio-economic factors (regular household income, p=.000, and occupation, p=.000) highly influenced caesarean delivery in the health facility.

This finding is consistent with those studies done elsewhere. According to OECD (2017), rates of caesarean delivery have increased over time in nearly all OECD countries, although in a few countries this trend has reversed, at least slightly, in the past few years. Reasons for the increase include the rise in first births among older women and in multiple births resulting from assisted reproduction, malpractice liability concerns, scheduling convenience for both physicians and patients, and the increasing preference of some women to have a caesarean delivery, among others. In a study in Ghana, Manyeh, et al. (2018) concluded that age of mother, educational level, parity, household socioeconomic status, district of residence, and level of education of household head are associated with caesarean section delivery.

In Bangladesh, Mia, et al. (2019) concluded that;

➢ Half (50%) of the facility-based deliveries were delivered as caesarean section (CS).

➢ Three-fourths of deliveries in private facilities was delivered by CS.

➢ CS deliveries in private facilities were 9.2-fold greater than CS deliveries in NGO facilities.

➢ The interaction between wealth and facility type on CS found highly significant.

A similar study in Bangladesh (Rahman, et al., 2018) also found that Factors like mother being older, obese, residing in urban areas, first birth, maternal perception of large new-born size, husband being a professional, had higher number of antenatal care (ANC) visits, seeking ANC from private providers, and delivering in a private facility were statistically associated with higher rates of CS.

In China the rate of C-Section increased from 0.8% in 1993 to 16.6% in 2008 in rural areas and from 5.9% to 36.4% in urban areas. The rise among women with a first pregnancy was also dramatic: in the 2008 survey, 28.2% of rural primiparous women and 57.1% of urban primiparous women reported giving birth by caesarean section (Feng, Xu, Guo and Ronsmans, 2012). The authors then concluded that the large variation in caesarean section rate by socioeconomic region--independent of individual income, health insurance or education--suggests that structural factors related to service supply have influenced the increasing rate more than a woman's ability to pay.

5.1.3: Attitude of Managers Toward Monitoring and Evaluating CSR

Qualitatively, there were mixed views about regularizing monitoring and evaluation of Caesarean delivery in the health facility. Some managers believed it is alright to do so while others are very much reserved about it. This finding is also similar to those reported elsewhere. In their study in Bangladesh, Rahman, et al. (2018) concluded that health system urgently needs policy guideline with monitoring of clinical indications of Caesarean Section deliveries to avoid unnecessary C-Section. Strict adherence to this guideline, along with enhance knowledge on the unsafe nature of the unnecessary C-Section can achieve increased institutional normal delivery in future; otherwise, an emergency procedure may end up being a lucrative practice. This view is substantiated by World Health Organization (2018), which argued that Caesarean section rates have been steadily increasing worldwide over the last few decades above levels that cannot be considered medically necessary. They further argued that there is evidence that potentially unnecessary caesarean sections may put the lives and well-being of women and their babies at risk – both in the short and long-term. Therefore, in recognition of the urgent need to address the sustained and unprecedented rise in the use of caesarean section, WHO (2018) has produced

evidence-based guidance on non-clinical interventions specifically designed to reduce unnecessary caesarean section.

5.2: Conclusion

The rate of Caesarean delivery is unacceptably high, even in Private-Not-For-Profit healthcare organization and yet, as with any surgery, caesarean section is associated with short- and long-term risks. These can extend many years beyond the current delivery and affect the health of the woman, the child and future pregnancies. Caesarean section increases the likelihood of requiring a blood transfusion, the risks of anaesthesia complications, organ injury, infection, thrombo-embolic disease and neonatal respiratory distress, among other short-term complications. On the other hand, in the long term, Caesarean section has been associated with an increased risk of asthma and obesity in children, and complications in subsequent pregnancies, such as uterine rupture, placenta accreta, placenta praevia, ectopic pregnancy, infertility, hysterectomy and intra-abdominal adhesions. The risk of these morbidities progressively increases as the number of previous caesarean deliveries increases.

5.3: Recommendation

The investigator, therefore, recommend that in recognition of the urgent need to address the sustained and unprecedented rise in the use of caesarean section, WHO (2018) recommendation on non-clinical interventions to reduce unnecessary caesarean sections must be adopted and implemented in all healthcare organizations. Based on this, the following recommendations are advised;

   1) **Educational Interventions for Women Education:**

Health for women is an essential component of antenatal care. Therefore, the following educational interventions and support programmes are recommended to reduce caesarean delivery with monitoring and evaluation: (a) providing childbirth training workshops for mothers and couples, (b) relaxation training programmes led by nurses, (c) psychosocial couple-based prevention programmes and (d) psycho-education for women with fear of pain or anxiety.

2) Use Of Clinical Guidelines and Second Opinion:

Use of evidence-based clinical practice guidelines combined with mandatory second opinion for caesarean section indication is recommended to reduce caesarean births in settings with adequate resources and senior clinicians able to provide second opinion for caesarean section indication.

3) Use of Clinical guidelines, Audit and Feedback:

Use of evidence-based clinical practice guidelines, caesarean section audits and timely feedback to health-care professionals are recommended to reduce caesarean deliveries.

4) Use of Collaborative Midwifery-Obstetrician Model of Care:

For the sole purpose of reducing caesarean sections, collaborative midwifery-obstetrician model of care is recommended but in the context of rigorous research. This is a model of staffing based on care provided primarily by midwives, but with 24-hour back-up from an obstetrician, who provides in-house labour and delivery coverage without other competing clinical duties

5) Financial Strategies:

For the sole purpose of reducing caesarean sections, financial strategies for health-care professionals or health-care organizations are recommended but only in the context of rigorous

research. This strategy may include insurance reforms that equalize physician fees for vaginal births and caesarean sections.

6) Monitoring and Evaluation:

Caesarean section delivery need to be very closely monitored and evaluated, more especially in Private health facilities and private-not-for-profit health facilities. This exercise must be done regularly.

7) Standard Guidelines:

An international and uniform guideline of Caesarean Section Rates (CSR) needs to be adopted by World Health Organization (WHO).

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APPENDICES

Appendix I: Study Budget

ACTIVITIES	AMOUNT (UGX)
Developing the study topic and objectives	50,000
Conceptualization of the study	70000
Developing the proposal, internet cost, airtime & transport	500,000
Developing the data collection tools	50,000
Pretesting/ piloting	150000
Data collection	280,000
Data entry and processing	200000
Drafting, printing & general production of the report	500,000
Printing and binding, Submissionof the report + miscellaneous	200000
Total Amount (UGX)	**UGX 2,000,000/=**

Appendix II: Introduction and Informed Consent

I am called **Omona Kizito**, a student of Uganda Martyrs' University, doing a Master of Science in Monitoring and Evaluation (MSc. M & E).

I am conducting a research study on the **"Predisposing Factors of Caesarean Section Ratesin Private-Not-For-Profit Healthcare Facilities: A Study of St. Joseph's Hospital _ Kitovu"**. The purpose of this study is mainly to establish the CSR and establish the determinants of CSR. Findings are purely for academic purpose only. Information obtained will be highly confidential as well as individual patient details.

Your positive response will be appreciated.

Thank you

Signature_____ **Date** _____
Omona Kizito [Reg. No. 2017-M302-20072]
Researcher

Signature _____**Date** _____
Respondent

Appendix III: Introductory Letter

Uganda
Martyrs
University

Making a difference

Office of the Dean, Faculty of Agriculture

21st August, 2019

Your ref:
Our ref:

TO WHOM IT MAY CONCERN

This is to introduce the bearer **Omona Kizito** a second year student of Master of Science in Monitoring and Evaluation, Registration Number 2017-M302-20072 in the Faculty of Agriculture of Uganda Martyrs University.

He is conducting a Research Project on *"Determinants of Caesarean Section Rates (CSR) in Private-Not-For-Profit (PNFP) Healthcare Facilities in Uganda: A Study of St. Joseph's Hospital _ Kitovu"* to enable him prepare a Dissertation as a partial requirement for the award of his degree.

Thanks for the support

Yours Sincerely,

Ssekandi Joseph
Dean, Faculty of Agriculture

Uganda Martyrs University P.O. Box 5498 – Kampala - Uganda
Tel: (+256)382 – 410 611 Fax: (+256)382 – 410 100 Email: unmu@umu.ac.ug

[59]
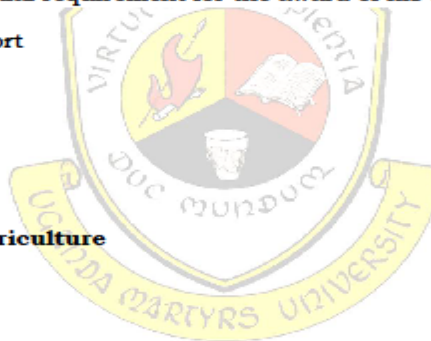
Appendix IV: Questionnaires

SECTION A – Predisposing Factors of Caesarean Section Rates (CSR)

Did you undergo Caesarean Section? **YES** ☐   **NO** ☐

Tick the appropriate box for each response

S. No   **Socio-demographic & Socio-economic Variables of each respondent**

01   **Age of respondent**

       Less than 20years   ☐

       20 – 40years   ☐

       More than 40years   ☐

02   **Marital status**
       Married   ☐
       Not married   ☐

03   **Occupation of respondent**
       Peasant   ☐
       Formally employed   ☐

04   Educational level of respondent

No education ☐

Primary education ☐

Post-primary education ☐

Tertiary education ☐

05   Regular Monthly House-hold income

Less than UGX100,000/= ☐

UGX 100,000/= to UGX 300,000/= ☐

More than UGX 300,000/= ☐

06   Living Environment

Rural ☐

Urban ☐

S. No   Pre-natal factors & family factors of respondents

01   Parity: How many times have you given birth to a foetus with a gestational age of 28 weeks or more, regardless of whether the child was born alive or was stillborn?

Nulliparous (Never) ☐

Once ☐

Multiparous (more than once) ☐

02   Gravidity: How many times have you been pregnant?

Prime-gravida (Once) ☐

Multigravida (More than once**)** ☐

03   Gestational age: How many weeks is or was your pregnancy?

Less than 28weeks ☐

28weeks or more ☐

04   **Preferred Delivery mode:** What is or was your delivery mode?

        No C-section (Vaginal birth)   ☐

        Caesarean section   ☐

05   **Reasons for preferred delivery mode:** Which of the following factors made you choose the delivery mode in Qn4. above?

        Self-evaluated difficulty in getting pregnant   ☐

        Husband's preference   ☐

        Doctor's suggestion   ☐

        Counselling directed toward preferred choice   ☐

Appendix V: Interview Guide with Post-Operative Mothers

If you delivered by C-Section, please share with me your experiences before delivery

Qn1. Did you anticipate any difficulty with your delivery? *[Self-evaluated difficulty in getting pregnant]*

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……………………………………………………………………………………………………

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Qn2. What did your husband prefer as the mode of your delivery? *[Husband's preference of delivery mode]*

……………………………………………………………………………………………………

……………………………………………………………………………………………………

…………………………………………………………………………………………

Qn3. Did the doctor suggest the mode of delivery to you? Explain. *[Doctor's suggestion]*

……………………………………………………………………………………………………

……………………………………………………………………………………………

Qn4. Have you been counselled about delivery? How was the counselling? *[Counselling directed toward preferred choice]*

……………………………………………………………………………………………………

…………………………………………………………………………………………

Thank you for your time and response

Appendix VI: Observation Check List

SECTION C – Observation Check List for Respondents

Observed parameters	Number of Caesarean deliveries	Total Number of all deliveries
January, 2019		
February, 2019		
March, 2019		
April, 2019		
May, 2019		
June, 2019		
July, 2019		
Grand Total Number (P_1, P_2)		

According to Anon. (2018),
Caesarean Section Rate (CSR) $= \dfrac{P_1}{P_2} =$

Appendix VII: Key Informant Interview Guide

SECTION D – Key Informant Interview Guide for Health Managers

Kindly share with me your views on the following questions

Qn1. What do you think about the Caesarean Section Rate (CSR) in this health facility?

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…………………………………………………………………………………………………
……………………………………………………………………………………

Qn2. Do you do regular monitoring and evaluation of activities in this health facility? If so, how often?

…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

Qn3. Has top management ever done monitoring and evaluation of CSR in this health facility? If so, what did they find?

…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

Qn4. What is your view about regularizing monitoring and evaluation of Caesarean Section Rate (CSR) in this hospital?

…………………………………………………………………………………………………
…………………………………………………………………………………………………
……………………………………………………………………………………

Qn5. Do you recommend an internal or external M & E officer to do the exercise?

……………………………………………………………………………………………………

Thank you for your time and response