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PSYCHOLOGICAL EFFECTS OF CAESAREAN SECTION ON MOTHERS DELIVERED AT KENYATTA NATIONAL HOSPITAL

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DECLARATION

I hereby declare that this thesis in part fulfillment of the Degree of Master of Science in Nursing (Midwifery and Obstetric Nursing) is my original work and has not been presented to any other University.

Rebecca Paye Vanahor

Signature_____ Date_____

DEDICATION

This work is dedicated to my family members. This includes my beloved late mother and uncle, Mrs. Chaindah Paye and Mr. Joseph S. Williams, my beloved husband, Mr. Larry J. Vanahor, and my loving children, Leon, Leland, Lovette, Leona and Leruca Vanahor. I do appreciate their encouragement, inspiration, tolerance, perseverance and spiritual support, despite our many life challenges.

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CERTIFICATE OF APPROVAL

This thesis has been submitted with our approval as internal research supervisors.

Dr Blasio Osogo Omuga Signature…….. Date……..

Dr. Waithira Mirie Signature..... Date.....

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ANC Antenatal Care

BSN Bachelor of Science in Nursing

CPD Cephalo-Pelvic Disproportion

CS Caesarean Section

FGD Focused group discussion

HBM Health Belief Model

HIV Human Immunodeficiency Virus

ICU Intensive Care Unit

KII Key informant interview

KNBS Kenya National Bureau of Statistics

Ksh Kenya shilling

MMR Maternal Mortality Ratio

OR Odd Ratio

SPSS Statistical Package for Social Sciences

STIs Sexually Transmitted Infections

VBAC Vaginal Birth after Caesarean Section

WHO World Health Organization

OPERATIONAL DEFINITION

Better health outcome: the outcome in which the health of the baby and mother are best assured.

Caesarean Section rates: Proportion of Caesarean sections performed in a health facility or a geographical region in relation to the total number of live births. It is usually expressed as a percentage

Caesarean Section: Operation of delivering a baby through incisions made in the abdominal wall (Laparotomy) and the uterine wall.

Cultural factors: an agreed value system respected by a group of people. This includes way of life, conduct of functions or performance in a given group of people.

Gravidity: number of pregnancies a mother has had including abortions and ectopic pregnancies.

Health benefits: benefits in health issues the mother receives from services known to the delivering mothers at the time of delivery.

Health education received: health education given to mothers with respect to delivery services.

Outcome of birth: the final result experienced in the delivery process.

Parity: number of times a mother has carried a pregnancy of surviving age including live and stillbirth.

Past delivery experiences: experiences of the mothers in their past deliveries

Psychological effects: Change of maternal behaviour due to caesarean section.

ABSTRACT

Problem statement: The rate of Caesarean section delivery being undertaken is in the rising trend both locally and internationally. Though Caesarean Section is aimed at ensuring safe deliveries in complicated conditions, the exact post effect it has on the mother's psychology is not well established by the existing literature. Caesarean birth may be experienced as a traumatic encounter for the mother resulting in both immediate and long term consequences. Despite some mothers recovering fully, others still face psychological difficulties and this raises much concern.

Purpose of the study: To establish the psychological effects of C-Section on mothers delivered at obstetric wards in Kenyatta National Hospital, taking into consideration the demographic, socio-economic, cultural, hospital related and maternal factors associated with the psychological effects.

Study design: This was a descriptive cross-sectional research study conducted at Kenyatta National Hospital postnatal wards on mothers who had had caesarean section delivery.

Data analysis: Qualitative data was analyzed using content analysis while quantitative data was analyzed through descriptive and inferential analysis. SPSS was applied in quantitative data entry and analysis. Findings were presented in tables and figures.

Findings: 61.8 % of 217 (n=134) of the mothers experienced psychological effects of caesarean section; majority reporting having experienced numerous effects. The study found that women who were 20 years or less were slightly more than 3 times likely to experience psychological effects of caesarean section compared to those who were above 40 years old, (OR 3.324 p= 0.041).Other demographic factors found to be associated with psychological effects of caesarean section included; fewer number of living children (OR 2.720 p= 0.007) and low parity (OR 2.612 p= 0.001). The economic factor of low monthly income was found to be associated with psychological effects of caesarean section. Those who earned Ksh 0- 10 000 and Ksh11-20 000 were 3 times and almost 4 times (respectively) more likely to experience psychological effects of caesarean section compared to those who earned a monthly income of more than Ksh 30 000, (OR 3.029, 3.778 p= 0.031). Cultural factors such as the relatives` negative view of caesarean section, negative cultural practices towards caesarean section and failure of the mother to belong to a social group were found to be associated with psychological effects of caesarean section. The hospital related factors such as inadequate health service providers and failure of counselling the mother before and after the caesarean section delivery were also found to be associated with psychological effects of caesarean section.

Conclusion: The study concludes that Majority of mothers experience psychological effects as a result of caesarean section delivery, in addition, some experience more than one of the effects.

Benefits of findings: The findings may be used by the hospital's administration to evaluate the protocols on post caesarean section care and psychological management. It also contributes to the body of knowledge on psychological effects of caesarean section and can be utilized by other researchers.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Caesarean birth is considered to be an easy and safer way of giving birth and has many advantages for both the mother and the baby. In the medical profession caesarean section is considered to be a safe, quick and routine surgery (Mazzoni, Althabe, and Gutierrez, 2016). However, Caesarean birth may be experienced as a traumatic encounter for the mother resulting in both immediate and long term consequences. This is attributed to the fact that it's abrupt and leads to interruption of the biologically programmed vaginal birth process. The major symptoms of the trauma are shock, bonding deficiencies and invasion/control complex (Garcia, de Koning Gans, and Verdult, 2014). This is despite the evidenced of increased both maternal mortality and morbidity associated with Caesarean section delivery.

The rate of Caesarean section delivery being undertaken is in the rising trend in the recent past, surpassing the recommended rate of 15% of all deliveries by WHO (Batiela et al, 2011). Specifically in Kenyatta National Hospital, the caesarean deliveries have been on a steady increase in the last three decades. This increase has generally been attributed to the fact that KNH being a teaching and referral hospital handles high-risk pregnancies that are more likely to end up with caesarean delivery (Hyde, 2011).Though the hospital has well established obstetric wards, the effect of Caesarean section on the women after they have been discharged still remains unanswered.

Empirically, studies have been done both locally and internationally pertaining to the psychological effects of Caesarean Section on mothers. Verdult, et al, (2014) conducted a study on the caesarean birth's psychological aspects in adults. The study established that proper

preparation and counselling is necessary in order to prevent mothers from suffering from a traumatic birth. Dube and Kshirsagar (2014) investigated the effect of planned early recommended ambulation technique on selected post caesarean bio physiological health parameters. Their results showed that early planned ambulation is an effective strategy for post-operative management of caesarean patient. While Lobel and Ibrahim (2018) investigated the psychosocial sequelae of caesarean delivery and established that the impacts varied greatly with the individuals.

Locally in Kenya, Wangui (2015) conducted a study on emergency caesarean deliveries at Kenyatta National Hospital. The study found out that the psychological depression was a common phenomenon on mothers delivered through an emergency caesarean. This concurs with studies conducted by Merry, and Gagnon, 2016. On the other hand, Juma, Nyambati, Karama, Githuku, and Gura, 2017 conducted a study on Caesarean section outcomes at the Aga Khan University Hospital and found out that this tends to contradict Jahonga who investigated the caesarean deliveries at MP Shah Hospital-Nairobi established minimal psychological effects of mothers delivered by caesarean section.

This shows that although caesarean birth has physical disadvantages and risks, the possible traumatic aspects of Caesarean section birth in mothers are ignored and denied in most research work. The studies conducted have mainly concentrated on the indicators of Caesarean Section with uniformity in the physiological aspect of it. Moreover, the available theoretical framework is not sufficient in explaining the relationship that exists. Understanding this is imperative in accessing how Caesarean section may impact on mothers psychologically and how this may be controlled. It's against this backdrop that this current study was conducted.

1.2 Background information

The term ‘caesarean section’ refers to the operation of delivering a baby through incisions made in the mother’s abdominal wall and uterus. A caesarean section is medically indicated when a significant risk of adverse outcome for mother or baby is present if the operation is not performed at a given time Mofubelu, (2017). Caesarean section (CS) is essential in life-threatening situations pertaining to both the mother and the fetal complications (Fadhley, 2014). The process thus aims to ensure safely delivery to both the mother and the child.

The importance of Caesarean Section is estimated to prevent complications and ensure safe delivery in about 5 - 15 percent of pregnancies (Lee *et al*, 2011). This has seen its uptake increase drastically in the recent past and gaining popularity amongst most mothers. It ensures that most complications during pregnancy such as prolonged labour or a fetal distress, failure to progress, cord prolapse, uterine rupture or an elevated risk thereof are well addressed (Tollånes *et al*, 2014). Other factors associated with preference for cesareans include cases of greater numbers of pregnancies, the socioeconomic level and the degree of satisfaction with the experience from the previous delivery.

A Caesarean section typically takes 45 minutes to an hour, (Walsh, 2016). It may be done with a spinal block such that the woman is awake or under general anesthesia (Kassebaum *et al*. 2014). A urinary catheter is used to drain the bladder and the skin of the abdomen is then sterilized. An incision of about 15 cm (6 inches) is then typically made through the mother's lower abdomen (Kassebaum et al. 2014). The uterus is then opened with a second incision and the baby delivered. The incisions are then stitched closed. Often a number of days are required in hospital to recover sufficiently to go home.

Caesarean section is categorized into various classes which include emergency Caesarean section, classical caesarian section, crash Caesarean section, Caesarean hysterectomy and repeat Caesarean section (Mgongo, 2010). An emergency Caesarean section is a Caesarean performed once labour has commenced, classical Caesarean section involves a midline longitudinal incision which allows a larger space to deliver the baby, crash Caesarean section is performed in an obstetric emergency where complications of pregnancy onset suddenly during the process of labour, Caesarean hysterectomy consists of a Caesarean section followed by the removal of the uterus while a repeat Caesarean section is done when a patient had a previous Caesarean section (Mgongo,2010).

It has been documented however, that mothers undergoing delivery through Caesarean sections can experience increased incidence of postnatal depression. They have also been established to undergo significant psychological trauma and ongoing birth-related post-traumatic stress. As such, Factors like pain in first stage of labor, feelings of powerlessness, intrusive emergency obstetric intervention are important (Bettegowda *et al*, 2014). Thus showing that though they might have successfully delivered their baby, they still have to bear with emotional scars which might either be permanent or temporary. Sam McCulloh (2016) in his study also named some of the common challenging emotions as low self-esteem, guilt, loss, shock, anger, trauma, resentment and failure which are felt after caesarean delivery.

C-section women report experiencing psychological changes such as, a sense of loss, interrupted relationship with mother-feelings of detachment from her baby and altered identity, intimidations of mortality, feelings of violation, anger at caregivers, dissociation, humiliation and also posttraumatic stress disorder symptoms (Segen, 2012). This might affect them greatly to the extent of not wanting to undergo any other delivery (Fadhley, 2014). Women who have had

cesareans have higher rates of voluntary secondary infertility, purposely preventing another pregnancy. These psychological changes are however not well put across by the available literature and this study aimed at shedding more light into this.

1.3 Problem Statement

Psychological effects of caesarean sections on mothers are still controversial. Past studies never categorised the circumstances surrounding the caesarean sections and their specific psychological impacts. This needed to be clearly refined. This is the background on which this study was based.

1.4 Research Objective

To determine the psychological effects of caesarean section on mothers who have delivered through C- section at postnatal wards in KNH.

1.4.1 Specific Objectives

i. To determine the demographic factors associated with psychological effects of caesarean section.

ii. To establish the social economic factors associated with psychological effects of caesarian section.

iii. To investigate the cultural factors associated with psychological effects of caesarean section.

iv. To establish the hospital related factors associated with psychological effects of caesarean section.

v. To determine the maternal factors associated with psychological effects of caesarean section.

1.5 Research Questions

i. Which demographic factors are associated with the psychological effects of caesarean section?

ii. Which social economic factors are associated with the psychological effects of caesarean section?

iii. Which cultural factors are associated with the psychological effects of caesarean section?

iv. Which hospital related factors are associated with the psychological effects of caesarean section?

v. Which maternal factors are associated with the psychological effects of caesarean section?

1.6 Hypotheses

The study was set out to prove that there is no significant psychological effect caused by caesarean section on mothers who had delivered at the postnatal wards in KNH.

1.7 Justification of the Study

The number of Caesarean Section deliveries has risen drastically in the recent past both locally and worldwide. Despite Cesarean Section being aimed at ensuring safe deliveries in complicated conditions, the exact post effect it has on the mother's psychology is not well established. While some mothers get affected minimally by the ordeal others get emotional scars which highly affects them psychologically. Though much interest has been given to the Cesarean Section Delivery, by the available literature, much concern has been focused on the positive outcomes with little attention been paid to the psychological impact that a surgical birth may have on women's emotional wellbeing. Additionally, there is scarcity of studies conducted under the local context in Kenya as most studies are concentrated internationally.

A study on the psychological effects of caesarean section on mothers is thus very important and will serve to benefit the research community, because it has not been fully explored in the past. It

will shed more light into this phenomenon that has adverse negative impact on mothers when not well addressed. The study will be important to the mothers who have undergone C-section. Not only will it help them in identifying the most likely psychological effects they are likely to encounter, it will help them in understanding how to overcome them.

To the management at KNH, the study will be essential as it will enable them to know the psychological effects of caesarian section on mothers. This will act as a guideline for them to formulate new guidelines to prevent this, such as offering counselling advices after the delivery process. The study will also contribute to the existing literature on psychological effects of caesarian section on mothers who have delivered through C- section. In addition, the findings of the study will act greatly to overcome challenges associated with caesarian section delivery.

1.8 Scope of the Study

The study was carried out at Kenyatta National Hospital postnatal ward and involved mothers who delivered through C-section for a period of one month. The study focused on assessing the psychological effects of C-section on the mothers and specifically the posttraumatic stress disorder symptoms exhibited by mothers, the level of helplessness among the mothers, the sense of loss exhibited by the mothers and the extent to which the mothers felt intimidated by death. The target population was about 500 mothers who delivered through Caesarean section in the hospital in a given month. From the target population, the sample selected was 217. The sample size was obtained using the Fisher et al (1999) formula and selected using Simple random sampling method.

CHAPTER TWO LITERATURE REVIEW

2.1 Introduction

Caesarean section, also known as C-section, entails the use of surgery to deliver one or more babies, (Fadhley, 2014). Complications of labor and factors increasing the risk

associated with vaginal delivery include; as abnormal presentation, prolonged labour or a failure to progress, fetal distress, cord prolapse, uterine rupture or an elevated risk thereof, large baby weighing >4,000 g and umbilical cord abnormalities (Lauwers and Swisher, 2010). Other complications of pregnancy, pre-existing conditions and concomitant disease, such as pre-eclampsia previous fetus, HIV infection of the mother with a high viral load, rare cases of posthumous birth after the death of the mother and STIs. This chapter reviews the literature pertaining to the study and an overview of the research gap that exists.

2.2 Delivery by Caesarean Section

Caesarean section constitutes among the first surgical operations and commonly performed in obstetrics since 100 B.C. It is defined by Menacker and Hamilton, (2010) as the process of extracting the placenta, membranes and the infant through incision in both the abdominal and maternal walls. Despite the vaginal delivery still occurring, C-sections are becoming more prevalent. A caesarean section is a multidisciplinary procedure comprising many tasks, some of the processes being quite complex. The procedure requires coordination of qualified medical personnel namely; an obstetrician, anesthetist, theatre nurse, and a pediatrician to receive the baby. The staff has to be assembled prior to undertaking the necessary tasks. This method of child delivery is performed for various reasons, ranging from emergency circumstances to the mother's convenience (Hofmeyr G et al., 2015).

The rates of caesarean section vary greatly from one part of the country to another (Macfarlane and Mug-ford, 1986; Nicola and Ciara 2018). The range varies between 5% and 75% worldwide based on the study of Njoku et al (Dec. 2016). As such, the high CS translates to increased cost of healthcare, increased workload and challenges in ensuring improved quality of care. These issues continue to weigh heavily on the health sector especially in developing countries. The rise in prevalence of caesarean deliveries has been attributed to multiple factors, including changes in clinical practice, attitudes about risk and changes in patient or physician expectations (Lauer *et al*. 2010). There are certain indications that call for Caesarean section which includes; medical condition in which the doctor is necessitated to conduct C-Section, and additional reasons such as demographic profile of the patients, and the overall capacity of the health system (Lauer *et al*. 2010).

2.3 Psychological Effects of Caesarean Section on Mothers

The area of Caesarean Section is one which has attained interest from both scholars and researchers. The advantages and risks pertaining to the practice are questions that they have sought to answer (Castro R et al, 2016, Cari Nirenberg 2018). However, the psychological impact of a caesarean birth has received mixed results. Both negative and no psychological effects on the mother have been established. Additionally, only minimal differences have being obtained between mothers having delivered in the normal vaginal route, and those who have undergone Caesarian delivery. The C-section delivery being an extremely physical and emotional tiring experience, it is bond to leave a permanent emotional scar on those involved. However, how one perceives about the whole process is what determines how fast they will recover. Those who willingly chose to deliver with the C-section have been established to be impacted least as opposed to those which have not consented for it. This shows that the process

of delivery by the cesarean methods does not stop entirely when the baby is delivered as it may impact greatly on the mother if not well addressed (Kristy Ramirez, 2017). As such, the psychological effects may be determined by various factors such as;

2.3.1 Demographic Factors Associated With Psychological Effects of Caesarean Sections

Demographic factors include mainly characteristics like age, level of education and marital status. These characteristics influence how the mother will react post the C-section. The patient's level of education determines mainly her literacy level, and this will contribute to her understanding the C-section process and its implications (Konheim-Kalkstein, and Galotti, 2017). As such, highly educated mothers will recovery quicker as opposed to those who are not that educated. This may be prevented by giving the expectant mother maternal education pertaining to C-Section, before they undergo the procedure (Nilsen C. et al 2000 to 2013). The age of the patient on the other hand indicates the likelihood of undertaking the caesarean delivery. However, both the younger and older women have been obtained to have almost equal prevalence in undertaking Caesarean Section. While the marital status indicates, those who are in stable marriages will get emotional support from both their spouses and children. Hence it won't leave a permanent emotional scar as compared to the single mothers struggling on their own. This shows that the demographic factors do play a role in the post-operation recovery process (Mofubelu, 2017).

2.3.2 Social Economic Factors Associated with Psychological Effects of Caesarean Sections

The social economic determinants entail the social status and wellbeing of the individuals. Women with higher economic status use more opportunities of the appropriate place for delivery and underwent caesarean sections. This could arise due to their education level and occupations.

In a study conducted by Amjad et al, (2018), the risk of psychological trauma was established to be higher in those who are struggling financially than those who are stable. As such, they may be able to undergo professional counseling and advise which will highly boost their recovery process.

On the contrary, the mother's social class and parity has been associated with minimal to none impact on the postnatal depressions. This is because, no matter the social class, if they do not take positively the C-Section delivery, they are likely to suffer emotionally (Asli Goker et al 2012). This thus shows that despite their mixed results, the social economic background does have an impact onto how the mothers handle the after undergoing Caesarean Section.

2.3.3 Cultural Factors Associated with Psychological Effects of Caesarean Sections

The cultural factors entail the woman's perceptions and beliefs about a certain phenomenon. In some cultures, it is a norm for any pregnant woman to deliver using the convectional way which is the vaginal route. As such, the women who have undergone C-Section delivery are prone to themselves as being inferior and this affects them emotionally (NU et al, 2015). Not only would they want it to remain a secret, they most likely wouldn't want to deliver again with the fear of how they will be perceived by other people.

On the contrary however, positive attitude and beliefs about cesarean delivery, will contribute greatly on how the mother will handle any negative effects associated by psychological effects of caesarean section on mothers. This concurs by the findings obtained by Charles O'Donovan et al, (2017) on their studies whereby they established that having a positive mindset prior to undergoing the C-Section delivery results in the mother not having emotional trauma and distress.

2.3.4 Hospital Related Factors Associated with Psychological Effects of Caesarean Sections

The hospital related factors entail the health system factors which have a bearing on the caesarean section such as the organizational structure, institutional policies, workload and prioritization of theatre cases as well as the availability of key support services. Particularly, the hospital related factors constitute not only the delivery procedure but also the after delivery services such as maternal care (Riche and Hall, 2015). Proper hospital settings will ensure that the caesarean section delivery is undertaken using the recommended equipment and trained personnel. It will also aid in giving advice to the mothers on various key issues which will play a great role in enhancing the recovery process.

2.3.5 Maternal Factors Associated with Psychological Effects of Caesarean Sections

The main maternal characteristics that have been established are the connection between many hormonal changes after delivery. This includes thyroid dysfunction and lower plasma levels of prolactin which have been established to have the strongest associations with postnatal depression (Sarah and Corriher, 2014). However, other studies have been negative or contradictory for most of the hormonal variables, and a causal relationship between biological variables and postpartum mood has not yet been proved. As such, the psychological effects of caesarean section manifests as maternal blues which is considered to be a transitory phenomenon of mood changes that begins within the first few days after delivery. It is characterized by liability of mood, fearfulness, anxiety, irritability and depression. This will contribute greatly to how the mother will be affected by the post caesarean section delivery (Kristy Ramirez, 2017).

2.4 Gaps in Literature Review

Caesarean Section has proven to be very helpful in situations whereby mothers experience complications during delivery. Not only does it enable successful delivery to occur, it also acts to ensure the safety of both the mother and the child. However, the reviewed literature has shown that negative effects are bone such as psychological effects (Cari Nierenberg, 2018). Despite some mothers being affected minimally by the ordeal, others get emotional scars which highly affect them. Though the theoretical attempts to provide a framework for understanding how exactly the mothers will be affected by undergoing cesarean sections, the studies conducted have not been fully conclusive in establishing the various underlying factors. With the current increase in the number of C-section delivery being performed annually, this raises much concern. This is attributed to most mothers opting to undergo the C-Section as it seems the easier way out without the knowledge of the impact it will have on them psychologically. The available literature not being able to comprehensively cover the matter shows the presence of a research gap. This study aimed at addressing this research gap by conducting a study on the psychological effects of caesarean section on mothers in Kenyatta National Hospital.

2.5 Theoretical framework

This study was based on the Health Belief Model (HBM) proposed by Rosentock, Hochbaum and Kegels in 1952 (Becker, 1974; Janz and Becker, 1984).The HBM states that "the perception of a personal health behavior threat is itself influenced by at least three factors: general health values, which include interest and concern about health; specific health beliefs about vulnerability to a particular health threat; and beliefs about the consequences of the health problem. Once an individual perceives a threat to his/her health and is simultaneously cued to action, and his/her perceived benefits outweighs his/her perceived risks, then that individual is

most likely to undertake the recommended preventive health action. There may be some variables (demographic, socio-psychological, and structural) that can influence an individual's decision (Grissette, Spratling, and Aycock, 2018).”The health belief model is further elucidated by the following key descriptors:

Perceived Susceptibility - Each individual has his/her own perception of the likelihood of experiencing a condition that would adversely affect one's health. Individuals vary widely in their perception of susceptibility to a disease or condition. Those at low end of the extreme deny the possibility of contracting an adverse condition. Individuals in a moderate category admit to a statistical possibility of disease susceptibility. Those individuals at the high extreme of susceptibility feel there is real danger that they will experience an adverse condition or contract a given disease. The knowledge of the susceptibility of a woman to lose her life during child birth if not properly taken good care of by health practitioners and severity of delivery complications motivate people to consult health practitioners during pregnancy.

Perceived Seriousness - Refers to the beliefs a person holds concerning the effects a given disease or condition would have on one's state of affairs. These effects can be considered from the point of view of the difficulties that a disease or condition would create. For instance, pain and discomfort, loss of work time, financial burdens, difficulties with family, relationships, and susceptibility to future conditions. It is important to include these emotional and financial burdens when considering the seriousness of a disease or condition.

Perceived Benefits of Taking Action - Taking action toward the prevention of disease or toward dealing with an illness or condition is the next step to expect after an individual has accepted the susceptibility of a disease and recognized its seriousness. The direction of action that a person chooses will be influenced by the beliefs regarding the action.

Perceived Barriers – However, action may not take place, even though an individual may believe that the benefits to taking action are effective. This may be due to barriers. Rosentock noted that there are challenges (Money, proximity and environment) that influence people's decisions. He indicated that these perceived barriers could be suppressed when the knowledge of the severity of not complying outweighs the benefit. This may account for why many women in the rural areas do not access modern maternal health care service. Illiteracy and low awareness of its benefits in most rural areas could account for low usage of maternal health services. Other barriers include accessibility of the services, cultural influences and others. **Cues to Action -** an individual's awareness of the levels of susceptibility and seriousness provide the force to act. Benefits (minus barriers) provide the path of action. However, it may require a 'cue to action' for the desired behavior to occur. These cues may be internal or external. The theoretical model used for this study is shown in diagram in Figure 1 below. As shown in the diagram, demographic, social, and economic and health factors are related to awareness. Cultural factors have also been found to be an important related variable from literature review and have thus been added to the other independent variables. In this study, awareness has been perceived to be the same as knowledge. Since attitude and practice in respect to mothers' perception are important and closely related to knowledge, they have been added to dependent variables to add value to the credibility of the final research analysis. This has been done so that no important influential variable is left out. In this study, perception of mothers on the psychological effects of caesarean section has been decided on as the desirable outcome for evaluation and directly reflects on mothers' perception. The theoretical model has thus been modified to suit the purposes of this study as cited from literature review relationships. All modifications are as shown in the

conceptual framework with indications of the appropriate relationships drawn from literature review.

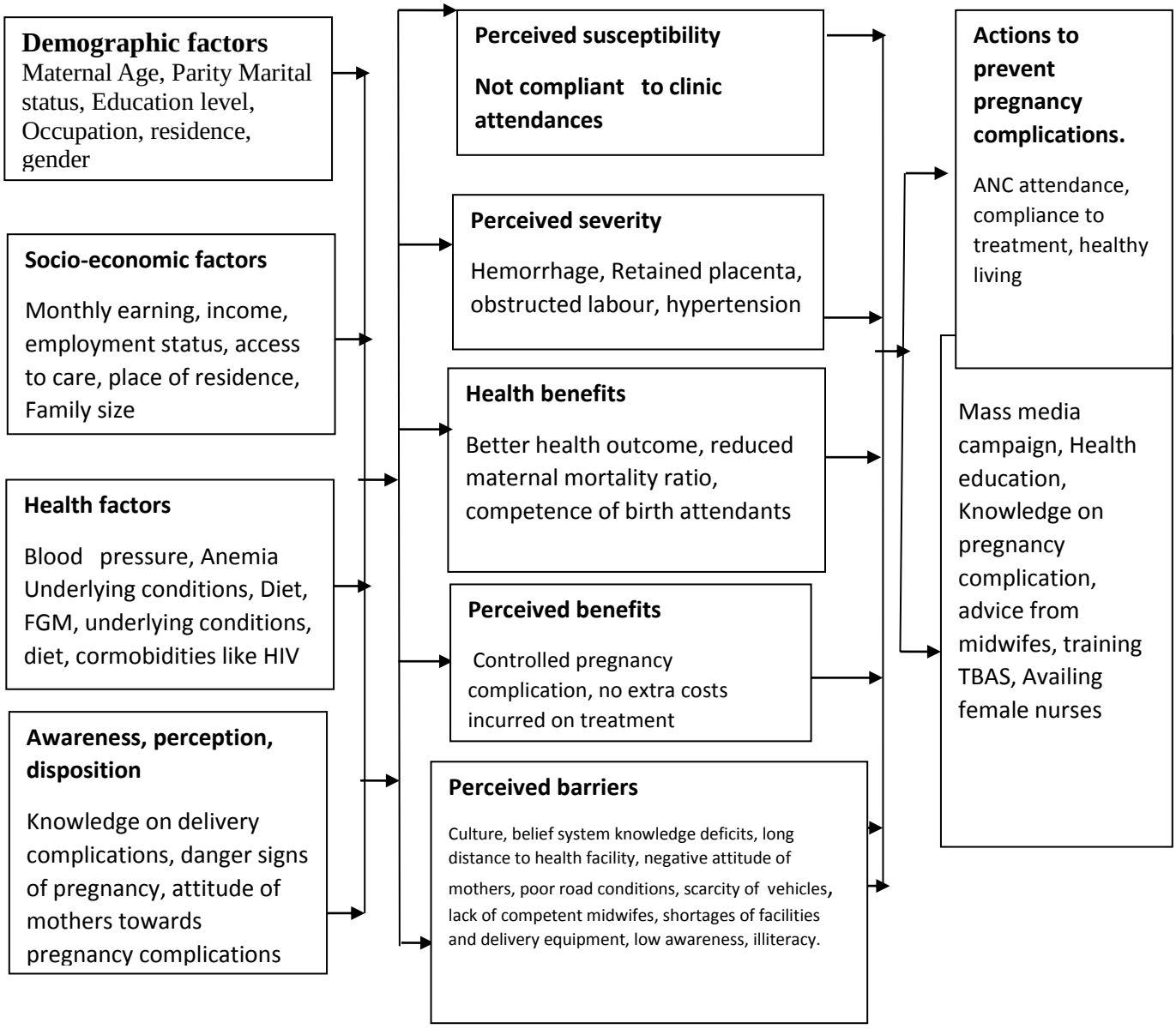

Figure 2.1 Theoretical Framework Health Belief Model

2.6 Conceptual Framework

Figure 2.2: Conceptual Frameworks for this Study was derived from the study variables as shown below.

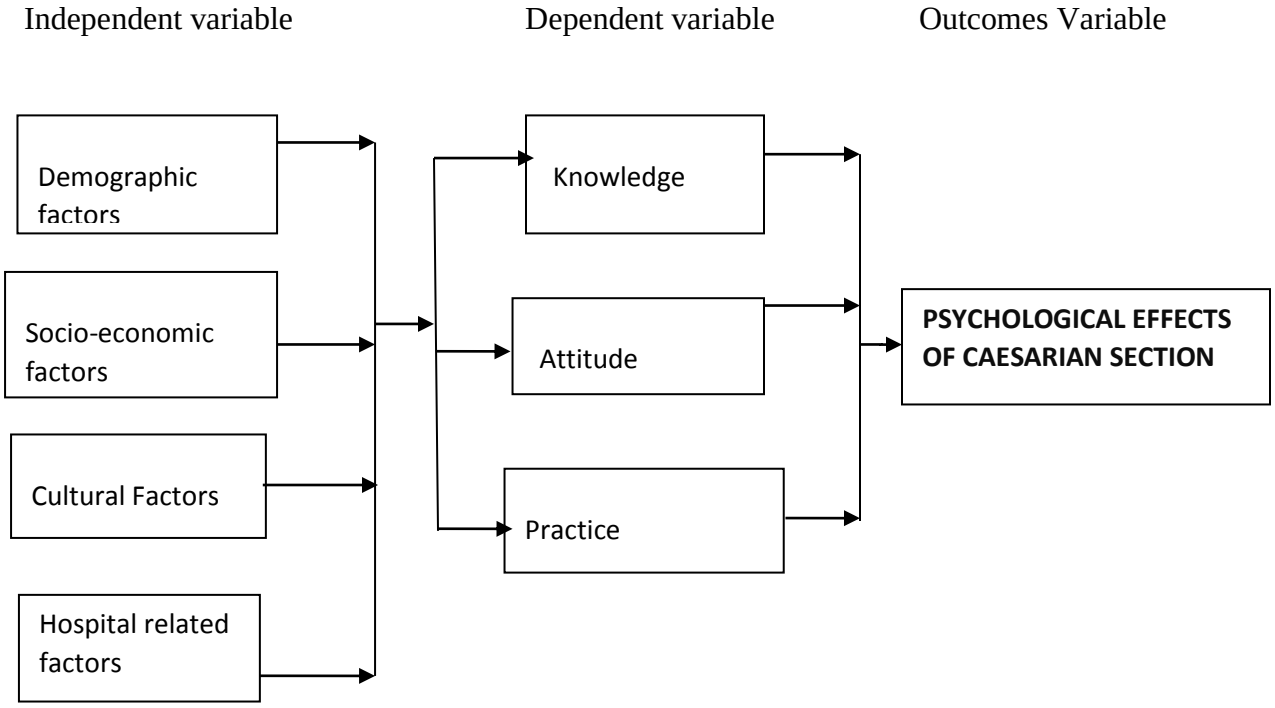

Figure 2.2 Conceptual Framework

2.7 Operational framework

Figure 2.3 The operational framework has been derived from the conceptual framework to show the characteristics being studied under each major variable. These are concepts that were applied directly to the study subjects.

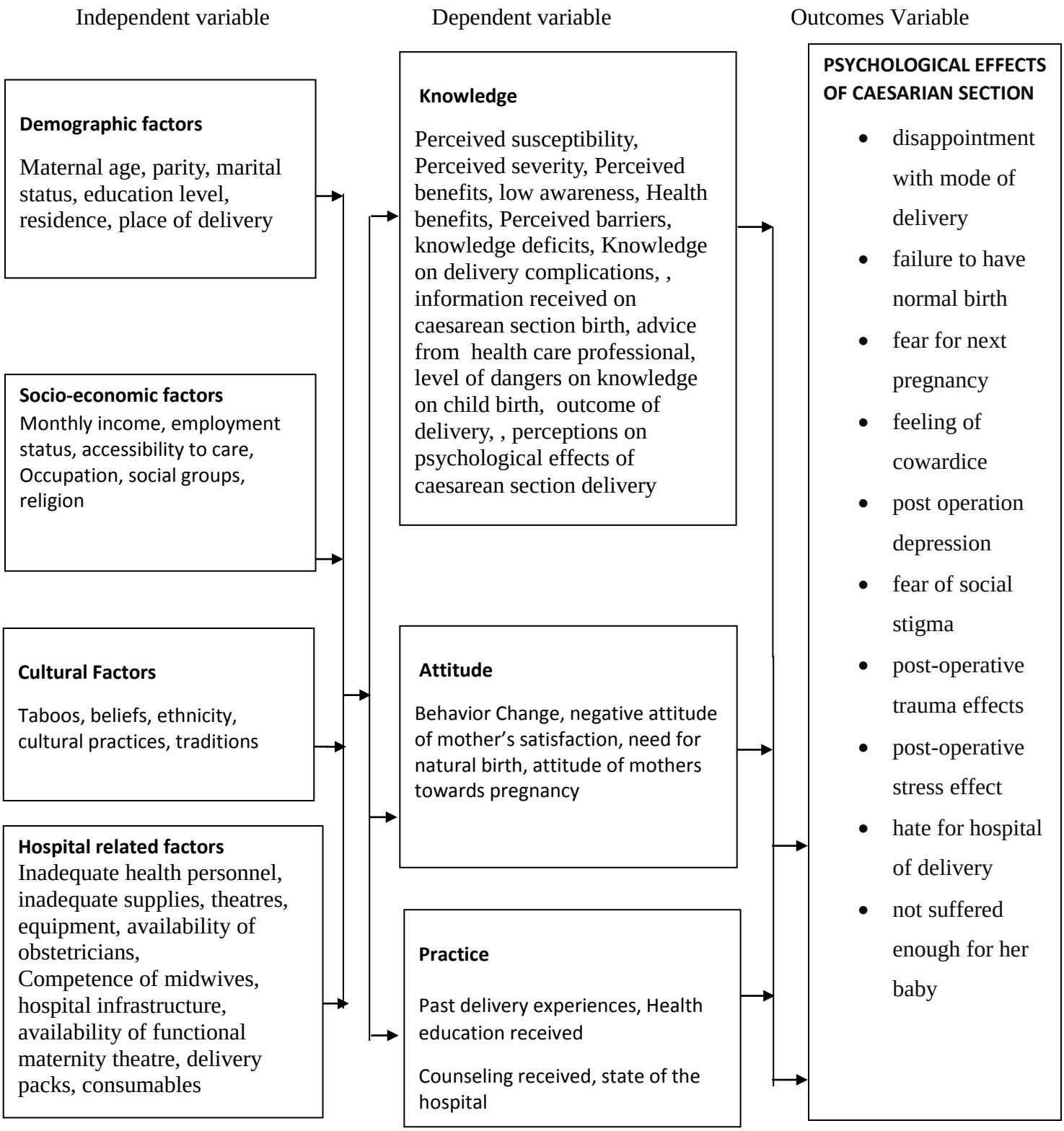

Figure 2.3 Operational framework

2.8 Definitions of Key Variable

Attitude (predisposition) factors – This reflects on a way of feeling or thoughts on a certain matter. This relates to the study subjects way of reacting to or responding to events related to psychological effects of caesarean sections on mothers delivered by caesarean sections weather of positive or negative nature.

Caesarean section rate- This is the proportion of the total number of CS performed in a particular health facility or geographic region in relation to the total number of live births recorded. It is expressed in terms of percentage.

Caesarean Section: The delivery of a baby through a surgical process. This entails making incisions in the woman's uterus abdominal wall.

Cultural Factors – These entail the beliefs, morals, and traditional laws held by a certain group of people. In line with this study, cultural factors will include taboos, beliefs, ethnicity and practices.

Demographic factors - It includes personal characteristics of people in a given population. In this study, demographic factors will include age, marital status, level of education, occupation, parity and place of delivery.

Dependent variable-This refers to the variable being tested and measured in an experiment. It is also tested, observed and recorded.

Determinant: factor that decisively affects the nature or outcome of something.

Helplessness - feelings of powerlessness among mothers who are delivered through CS

Hospital Related Factors - These are factors within the health institutions that influence psychological effects of caesarean section on mothers. In this study it will include factors in the hospital facilities, quality of personnel and service providers within the faculties of the hospital. These will entail competency of personnel and their level of qualifications, availability of functional maternity theatre and availability of theatre consumables among other things.

Hypothesis- This is the assertion of an association believed, but not known, to be true.

Independent variables- These are the predictor or causal variables. In this study these will include; demographic, social economic, cultural, hospital related and maternal factors associated with the psychological effects of mothers delivered by caesarean section.

Knowledge (awareness) factors – This involves Common understanding on issues affecting psychological effects of caesarean sections on mothers delivered by caesarean sections**.** This includes the level of information or awareness harbored by the study subjects with respect to delivery services. This will include those acquired through health education, counseling or through personal experience

Mortality Intimidation – rising fear about death for both mother and baby due to CS

Obstetric-This is broad term relating to matters which are pregnancy related that may arise either prior or during the pregnancy.

Parity- number of pregnancy which is carried to fetal viability.

Perinatal Period-This is the period around the time of birth and includes all births weighing 500g or more and ends at 7 days after birth.

Post-Traumatic Stress Disorder - postnatal depression, anxiety, fear, lack of confidence among mothers who undergo CS

Practice (uptake) - this relates to the study subjects past delivery experience that impact on their psychological effects of caesarean sections.

Psychological Effects: That which relates to the mind. It influences not only ones thoughts but also their actions.

Psychological: Affecting the mind and thoughts.

Sense of loss - birth didn‘t turn out like expected, loss of the experience of participating in the birth experience, not being there when the baby enters the world

Socio- Economic status - These are characteristics that indicate people’s economic activities that affect and shape their social processes. In this study it will include occupation, average monthly income, accessibility to health services and employment status

Type of delivery – this relates to the final choice of delivery a woman has agreed to in the present delivery.

CHAPTER THREE: STUDY METHODOLOGY

3.1 Research Design

This was a descriptive cross sectional qualitative and quantitative study to determine psychological effects of caesarean section on mothers at obstetric wards in Kenyatta national hospital. According to Owens (2017), this design is useful in collecting data at one point in time from a sample selected to represent a larger population. This design was chosen because the researcher was seeking information from a large population within a short period of time. Secondly, the researcher had limited resources to her disposal, dictating that the time, materials and research assistants be quite minimal.

3.2 Study Area

The study was conducted at postnatal wards in KNH. This is one of the post-operative wards of the hospital where all mothers who have undergone caesarean section and other obstetrical operations are attended to. It is the main obstetrical admitting ward. The ward operates under the management of the division of reproductive health in the hospital.

KNH is a 2000 bed national teaching and referral hospital that received patients and referrals from many parts of the country and beyond. It has inpatients, outpatients, emergency, accident, theatres and delivery services among many other specializations found in a hospital of such magnitude. These are placed under major divisions found in any other big public health institution. The hospital also has a complex management system that also houses a private wing.

One of the divisions in the hospital is that of reproductive health under the charge of a deputy director and divisional matron. This division majors in pregnancy and gynecological care

services both in the inpatient, outpatient clinic and emergency settings. Among the wards in the hospital are the postnatal wards where the study was conducted.

The obstetric wards are placed in the ground floor of the hospital tower block for easy accessibility and management. The wards admit all obstetrical patients which include caesarean section mothers. Caesarean section is one of the most common procedures performed on women admitted in this ward to be attended to by ward nurses among others.

3.3 Study Population

All caesarean section mothers admitted and managed in KNH obstetric ward formed the target population for this study. The targeted CS mothers in the reproductive age between 15 and 49 years were interviewed. Furthermore, the study targeted the nurse managers and staff nurses at the obstetric ward for Key informant interview (KII)

3.3.1 Inclusion Criteria

The study included mothers who had undergone CS and admitted in postnatal ward for management before discharge. All mothers who had undergone CS and gave informed consent were included.

3.3.2: Exclusion Criteria

Mothers who had delivered through CS but did not give informed consent and also all mothers who delivered through CS but not within the designated age range were excluded from the research study.

3.4 Sample Size determination

The Fischer's formula illustrated below was used to determine the sample size for the participants.

$$\boldsymbol{n = \frac{Z^2 P(1-P)}{I^2}}$$

Where:

n = Sample size [where population > 10,000]

Z = Normal standard deviation at the desired confidence interval. In this case it will be taken at 95% confidence interval giving a **Z** value of 1.96.

P = Proportion of the population with the desired characteristic.

1- p = Proportion of the population without the desired characteristic.

$\mathbf{I}^2$ = Degree of precision at 95% confidence interval which is 0.5

Since the proportion of the population with the characteristic is not known, 50% will be used.

Therefore n = $\frac{\text{I.96 [0.5] [0.5]}}{\text{[0.05][0.05]}}$ =384

Since the target population at postnatal ward in KNH was <10,000, the alternative formula was applied using the following formula.

$$\boldsymbol{nf = \frac{n}{1 + {}^{n}/_{N}}}$$

Where:

nf = the desired sample size for population <10,000

N = total study population which is 500 per month

n= the calculated sample size.

$$nf = \frac{384}{1+{}^{384}/_{500}}$$

$$nf = \underline{384}$$

$$1.768$$

$$= \sim 217$$

The targeted sample size was therefore 217 mothers.

3.5 Sampling interval

Sampling interval = $\frac{\text{total study population}}{\text{Sample size}}$

$= \frac{500}{217}$

$= 2.304$

= approximately 2

Therefore every 2nd mother was included in the study sample since sampling interval was approximately 2.

3.6 Sampling method

Simple random sampling method was used. Each participant in the study population had equal likelihood of being selected to participate in the study. A list of all mothers was serialized on day 1 of the study. A table of random numbers was used to select the first mother. Every 2nd mother was then included in the study until the sample size was obtained.

3.7 Study Instruments

A pre-tested semi-structured questionnaire was administered by research assistants to collect data. Pre-testing was done at KNH obstetric wards. Two research assistants were selected from

among the Bachelor of Science Nursing (BSN) students of the school of nursing, college of health sciences, University of Nairobi who were trained for one week. Field questionnaires were checked for completeness and information entered into SPSS computer systems for analysis at the end of the study. The questionnaire interview was conducted in English. Whenever necessary it was translated by the research assistants into Swahili. Key informants interview guide was also used to obtain qualitative data.

3.8 Recruitment and training of research assistants

Two research assistants were selected from among the BScN students from school of nursing college of health sciences, university of and were trained for one week for the study.

3.8.1 Development of study instruments

Data collection instruments were developed which included structured questionnaires. The questionnaires were written in English and administered by the research assistants. For mothers with difficulties in understanding English, the research assistants translated the questionnaires into Kiswahili using simple terms. The questionnaires had both closed and open ended questions, Focused group discussion (FGD) and Key informant interview (KII) guides were used for FGD and KII.

Interviews and focused group discussion were done to ensure detailed understanding of the phenomenon under study. This was facilitated directly by the researcher and each took approximately 20-30 minutes. Their responses were noted down on paper and stored in a secure place.

3.8.2 Pretesting of study instruments

Mugenda and Mugenda (2008; Heale R, Twyecross A.,2015) defined validity as the accuracy and meaningfulness of inferences which are based on research result, while Saunders, Lewis and Thomhill (2015), defined reliability as a measure of the degree to which a research instrument yields consistent result after repeated trials.

Pre-test refers to a pilot study which was undertaken prior to the actual study. The essence of pre-test was to familiarise the researcher with the study site and enables the determination of the effectiveness of the data collection instruments (Mugenda and Mugenda, 2008). The pretest was undertaken on 20 (10% of the actual sample) mothers at the obstetric wards at KNH. These respondents however did not take part in the actual study. Pre-test semi-structured questionnaires were administered by research assistants to collect data. The outcomes of the pre-test aided in assessing the reliability and validity of the data collection instruments after which necessary adjustments were made before the commencement of the study. The pretest helped in validating the specificity and sensitivity of the instruments and assisted in validating them with due necessary adjustments and better research outcome. The questionnaires used for pretesting were not included as questionnaires for analysis of the study.

3.8.3 Data collection, Cleaning and Entry

Mugenda and Mugenda (2008) recommended the use of multiple method of data collection in order to study all aspects of a phenomenon in which case the merits of one instrument may offset the demerits of the other. Qualitative data was collected using focused group discussion. On the other hand, quantitative data was collected using structured questionnaire.

Data was collected using administered structured questionnaires filled by mothers under the guidance of the researcher and research assistants. The questionnaires were written in English, for mothers with challenges in English the research assistants were able to translate it into Kiswahili using simple terms.

Collected data was cleaned by going through all the filled questionnaires and collected information for completeness and proper documentation. Incomplete questionnaires were discarded but efforts were made for this to be mostly minimized.

Focused group discussion guide (FGD) and Key informant interview (KII) guide were used during discussions in both situations. Both the FGD and KII study were conducted by the researcher and research assistants who took appropriate notes (Kun *et al.*, 2013). Focused groups was made up of 8 to 12 randomly selected participants composed of clients similar to those in the study group drawn after the study period was over in the same study area. The findings of FGD gave qualitative findings were used to verify the credibility of the findings drawn from the questionnaires. These FGD data were put into themes and further analyzed and compared with qualitative and quantitative findings in the study.

KII participants were selected from persons perceived to be experts in the area and subject of study. Data collection and analysis was treated the same way as the FGD situation. Relevant findings were also used to validate the findings in the questionnaire study (Kun *et al.*, 2013). The whole exercise was coordinated and supervised by the researcher herself. To minimize researcher's bias, the research assistants helped in administering the questionnaire.

3.9 Data Analysis and Interpretation

Quantitative data analysis was done using descriptive statistics such as pie charts, bar charts, Histograms, bar graphs and measurements of central tendency (mean, mode, median). Inferential

statistics, such as test of significance and coefficient correlations, and odds ratio were used to compare variables. Frequencies for the numerical variables including age, level of education, parity, marital status, residence, family size, average monthly income and working experience were presented in frequency tables.

Presentation of qualitative data was done in themes and verbatim reporting. Thematic analysis was used to analyse qualitative data, this was done by putting together findings under common items into groups for easily analysis and interpretation.

Upon completion, the administered questionnaires were checked for completeness and information in them entered into the computer in preparation for data analysis. Analysis of data was done by various descriptive statistics measures such as charts and measurements of central tendency (mean, mode, median). Inferential statistics, such as test of significance and coefficient correlations, were used to compare variables. Presentation of qualitative data was done in themes and verbatim reporting through content analysis method.

3.10 Ethical Considerations

Before commencing the study, a written approval was sought from KNH/UON ethics and research committee .Permission was also sought from the management of the reproductive Health division of Kenyatta National Hospital for data collection. A written informed consent form was given to all study participants. The study participants were informed of the benefits of the study and that the study was entirely voluntary. Participants were informed that they could withdraw from the study at any time if they felt uncomfortable. Special codes instead of names were used to represent the respondents so as to secure their identity. Only the researcher and assistants were allowed to access the information collected.

The questionnaires will preserved be in proper custody for 5 years for whatever queries that may arise. After this they will be destroyed under ethical guidance following the right principles and conduct of research ethics.

Participants were required to give written informed consent willingly before participating. This was done after they had fully understood the nature and implications of the study. This was fully explained to them before the consent. The purpose and objectives of the study were clearly explained to them. Before giving informed consent the participants were given participant`s information sheet and informed consent form. The researcher and assistants then personally helped them go through the contents and made sure that they had fully understood the requirements and implications of participation before signing the consent form. For persons under 18 years of age and not married, consent was sort from their parents or guardians. No person was forced or enticed to give consent. Whoever did not give a willing free informed consent did not participate in the study.

Confidentiality: Confidentiality, privacy and dignity were ensured. Confidentiality was maintained and the information provided was only used for the intended purpose of the study. In addition, names were not required on any forms or to be used during publication of the final report thus ensuring the anonymity of participants. All materials used during the study were under lock and key and only the personnel involved in this study had access to them.

3.11 Study Limitations

With reluctance to participate, clients were clearly given the purpose and importance of the research to encourage them to freely participate without coarsing. To make this possible they were provided with the necessary comfort, encouragement and privacy. Clarification of all issues was done where necessary. Subject bias was minimized by the researcher using well trained

research assistants to collect data. Needy mothers were also assisted in participating in the research. This study was limited to Kenyatta National Hospital.

3.12 Dissemination Plan

The result will be disseminated to the University of Nairobi, Kenyatta National hospital reproductive health division and the Ministry of health. Further dissemination shall be through seminar presentations, workshops, conferences, publications and report prints.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the findings of the study. A total of 217 women who had undergone a caesarean section voluntarily participated in the study by filling questionnaires under the guidance of the researcher and research assistants. All the 217 administered questionnaires were dully filled without errors giving a response rate of 100 % from the participants. A doctor and two nurses were also interviewed using the key informant guide to validate the data. Focused group discussion of 8 randomly selected participants was done. The main objective of this study was to determine the psychological effects of caesarean section among the participants. The relationship between demographic factors, socio-economic factors, cultural factors and psychological effects of caesarean section were determined. In addition, the relationship between maternal and hospital related factors and psychological effects of caesarean section were also determined.

4.2 Demographic factors associated with psychological effects of caesarean section

4.2.1 Age of the respondent

The numbers of mothers who were below 20 years old were 59 (27.2 %), those between 20 and 30 years were 73 (33.6 %), while those between 31 and 40 years were 53 (24.4 %). A smaller number of the respondents 32 (14.8 %) was 40 years or older. The number of the participants decreased below 20 years and above 40 years. It was also shown (Table 4.3) that women who were 20 years and below were slightly more than 3 times likely to have experienced psychological effects of caesarean section than women above 40 years old (ODDS RATIO (OR) 3.324, p= 0.041).

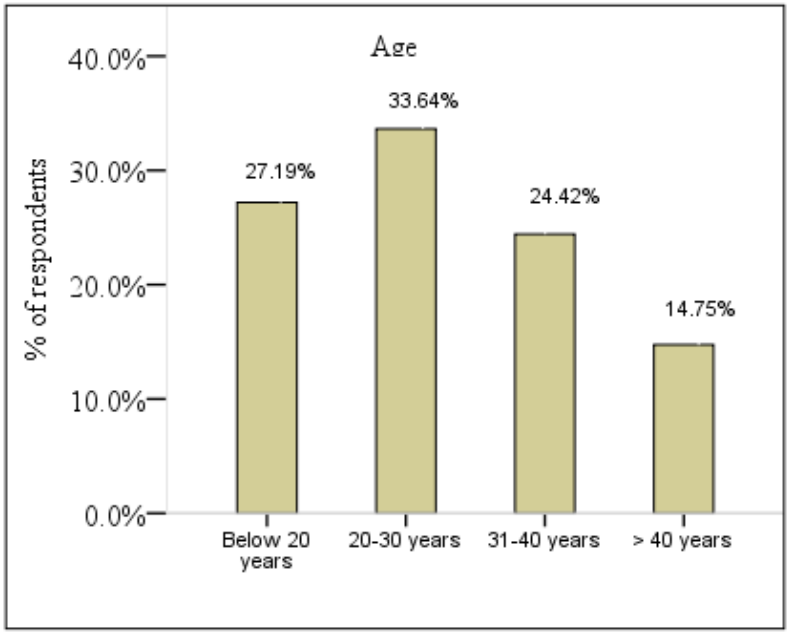

Figure 4.1: Age distribution among the participants.

4.2.2 Level of study

Only 8 (3.69 %) and 29 (13.4 %) of the respondents had no formal education or had primary school education, respectively. The respondents who had attained tertiary level education were 67 (30.9 %) while those who had attained secondary school education were in majority, 113 (52.1 %). Table 4.3 shows that there was not a statistically significant relationship between level of education and psychological effects of caesarean section, (p= 0.845).

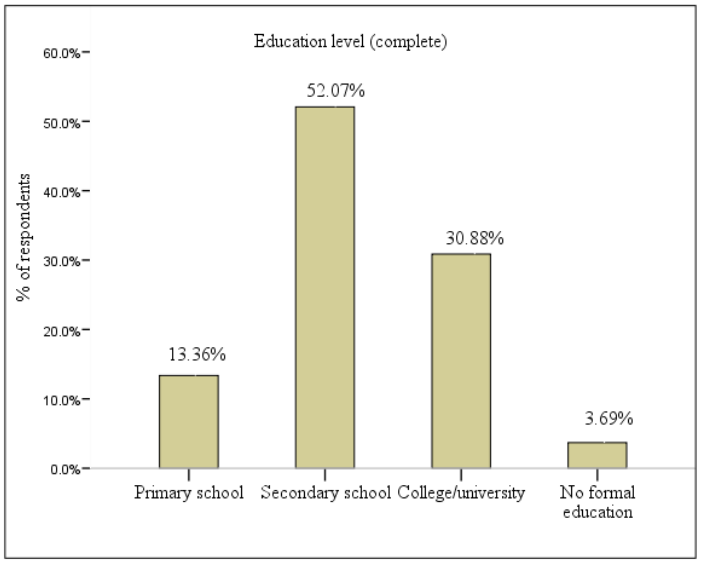

Figure 4.2: Respondents` education level (complete)

4.2.3 Marital status

Most of the respondents, 117 (53.9 %) were married. Those who were either single, separated or widowed combined were 100 (46.1 %). Table 4.3 shows that there was no statistically significant relationship between a mother`s marital status and psychological effects of caesarean section (p= 0.107).

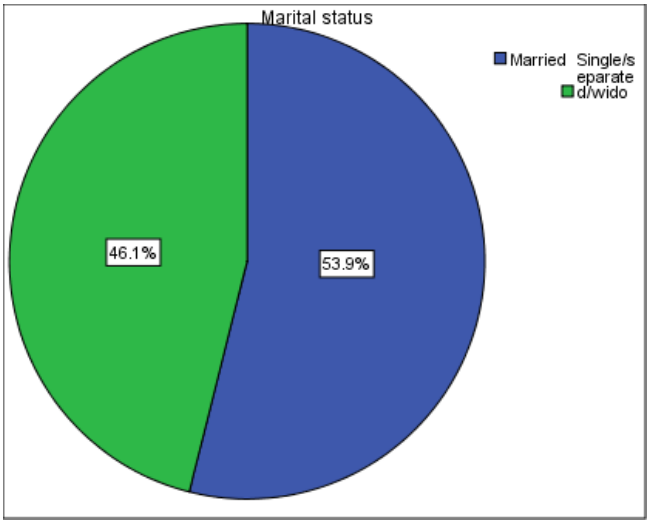

Figure 4.3: Respondents` marital status

4.2.4 Number of living children

Majority of the respondents, 120 (55.3 %) had one child while 53 (24.4 %) had more than three children. The respondents with two or three children were 44 (20.3 %). Table 4.3 shows that there was a statistically significant relationship between number of living children the respondents had and their experiencing of psychological effects of caesarean section. Those with 1 living child were 3 times more likely to experience psychological effects of caesarean section compared to those with more than 3 living children (OR 2.720 p= 0.007).

Table 4.1: Respondents` number of live children

	Frequency	**Percentage**
1 child	120	55.3
2-3 children	44	20.3
>3 children	53	24.4

4.2.5 Number of deliveries

Majority of the mothers, 106 (49.0%) had delivered only one child, 59 (27.0 %) had delivered more than three children while the rest 52 (24.0 %) had delivered 2-3 children. Table 4.3 shows that there was a statistically significant relationship between a respondent`s parity and her experiencing psychological effects of caesarean section. Mothers who had only delivered once were slightly more than 2.5 times likely to experience psychological effects of caesarean section compared to those who had borne more than 3 children (OR 2.612 p= 0.001).

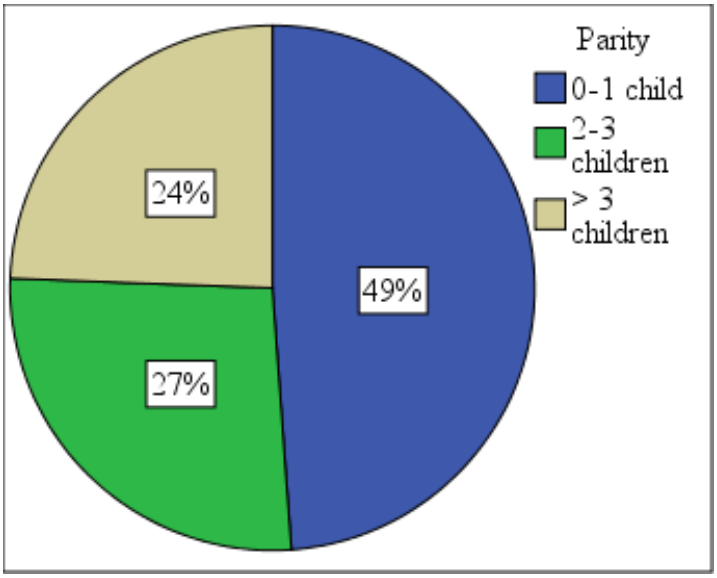

Figure 4.4: Respondents` number of deliveries

4.2.6 Residence

Majority of the participants, 160 (73.7 %) indicated that they stayed a few (0.5) kilometers from the hospital while a few 37 (26.3 %) noted that they stayed far from the hospital. Table 4.3 shows that there was no statistically significant relationship between place of residence and likelihood of experiencing psychological effects of caesarean section (p= 0.950).

Table 4.2: Distribution of demographic factors of the respondents

Demographic factor	**Frequency (n)**	**Percentage (%)**
Age		
Below 20 years	59	27.2
20-30 years	73	33.6
31-40 years	53	24.4
More than 40 years	32	14.7

Level of education (complete)		
No formal education.	8	3.7
Primary school	29	13.4
Secondary school	113	52.1
College/university	67	30.9
Marital status		
Married	117	53.9
Single/separated/widowed/divorced	100	46.1
Number of live children		
1	120	55.3
1-3	44	20.3
>3	53	24.4
Number of deliveries		
1	106	48.8
2-3	58	26.7
>3	53	24.4
Place of residence		
Near distance (0-5km) from the hospital	160	73.7
Far distance (6-10km) from the hospital	57	26.3

Table 4.3: Relationship between demographic factors of the respondents and psychological effects of caesarean section

Demographic factor	**Experienced psychological effects after CS.**		x^2	**Odds ratio**	**P-value**
	Yes N (%).	**No N (%).**			
Age					
Below 20 years	44(74.6)	15(25.4)		3.324	
20-30 years	46(63.0)	27(37.0)	8.267	1.931	0.041
31-40 years	29(54.7)	24(45.3)		1.369	
>40 years	15(46.9)	17(53.1)		1	
Level of education (complete)					
Primary school	19(65.5)	10(34.5)		1.900	
Secondary school	71(62.8)	42(37.2)	0.817	1.690	0.845
College/university	40(59.7)	27(40.3)		1.481	
No formal education.	4(50.0)	4 (50.0)		1	
Marital status					
Married	78(66.7)	39(33.3)	2.597	1.571	0.107
Single/separated/widowed/divorced	56(56.0)	44(44.0)		1	
Number of live children					
0-1	85(70.8)	35(29.2)		2.720	
2-3	24(54.5)	20(45.5)	9.929	1.344	0.007
>3	25(47.2)	28(52.8)		1	

Number of deliveries					
1	79(74.5)	27(25.5)		2.612	
2-3	27(46.6)	31(53.4)	14.786	0.778	0.001
>3	28(52.8)	25(47.2)		1	
Place of residence					
Within Nairobi	99(61.9)	61(38.1)	0.004	1.020	0.950
Outside Nairobi	35(61.4)	22(38.6)		1	
Family size					
1-3 people	25(64.1)	14(35.9)		1.367	
4-6 people	45(69.2)	20(30.8)	2.882	1.723	0.237
>6 people	64(56.6)	49(43.4)		1	

Results from focused group discussion and key informers showed that marital status, family size and place of residence did not influence the prevalence of psychological effects of caesarean section among mothers who had undergone caesarean section.

In terms of parity and number of live children, a nurses from the key informers said; *'the primiparous women and those women with fewer number of living children are more likely to experience psychological effects of caesarean section one reason being fear for the next pregnancy.'*

The nurses also agreed that mothers who were young were more likely to experience psychological effects of caesarean section compared to older women citing lack of experience and fear for next pregnancies as they are more likely to have more children in the future compared to older women.

4.3 Psychological effects of caesarean section

The pie chart below shows that majority of the women, 134 (61.8 %) experienced one or more psychological effects after caesarean section. The rating of psychological effects was done by the actual psychological experiences of the mothers. Severity was not determined by the ligand scale. Operational definitions of psychological effect as stated in the psychological impact of caesarean section on the mothers in the operational framework. This is also in the definition of key variables.

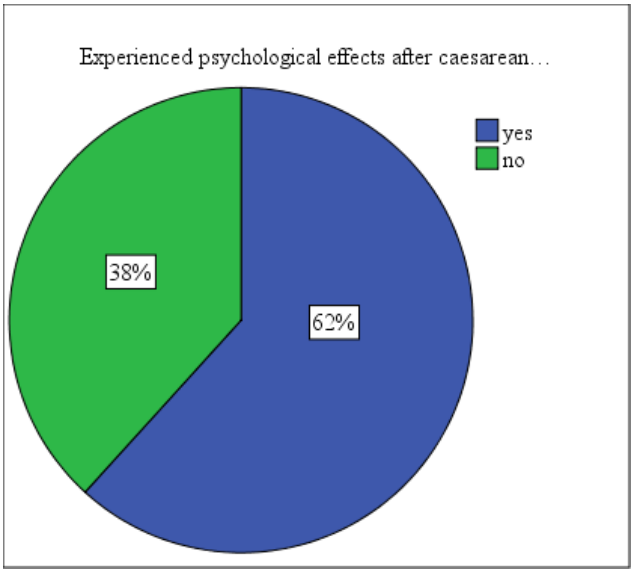

Figure 4.5: Prevalence of psychological effects after caesarean section among participants

The most commonly reported psychological effects of caesarean section was anxiety (96.4 %), fear of next pregnancy (89.9 %), post-operative trauma effects (79.8 %), post-operative stress effect (68.2 %), fear (59.7 %) and depression (55.0 %). Other experienced effects included disappointment with mode of delivery (48.1 %), hate for hospital delivery (37.2 %), post operation depression (30.2 %), failure to have normal birth (24.0 %), feeling of social stigma (14.0 %) and feeling of not suffering enough for the baby (7.0 %).

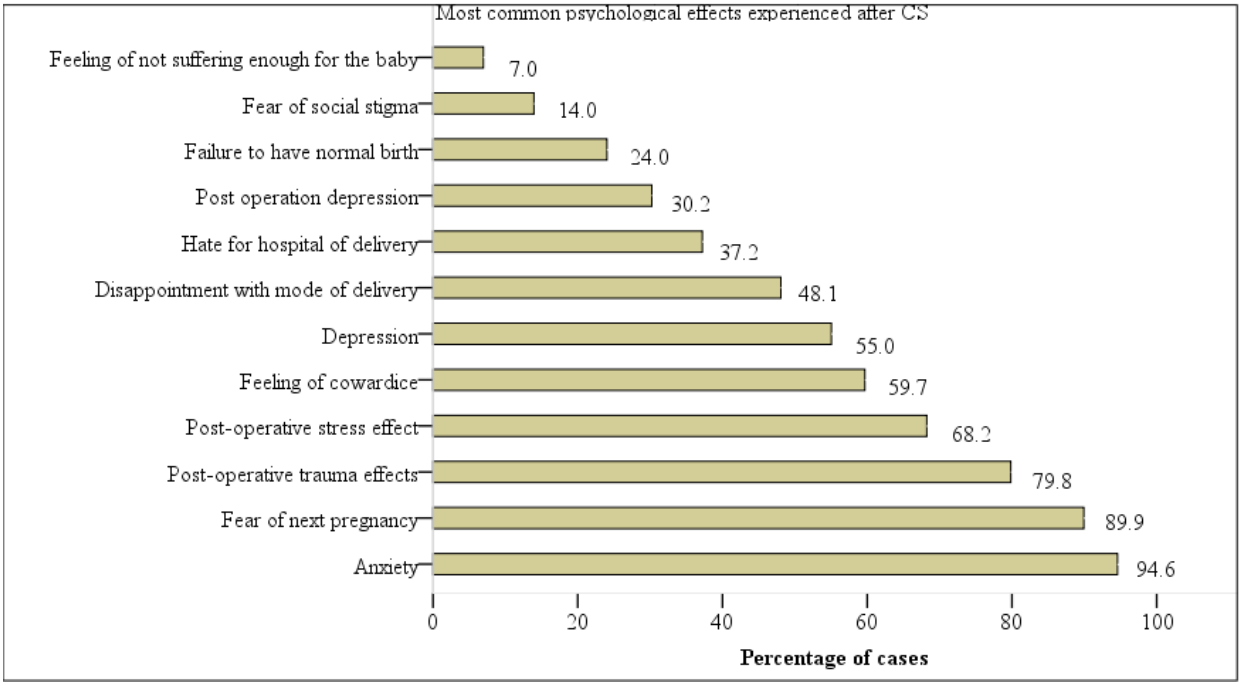

Figure 4.6: Common psychological effects of caesarean section experienced

4.4: Economic factors associated with psychological effects of caesarean section

Less than half of the respondents, 94 (43.3 %) were self-employed while about a quarter 53 (24.4 %) were unemployed. Only 51 (23.5 %) were formally employed while the rest 19 (8.8 %) were students. Table 4.5 shows that there was no statistically significant relationship between the mothers` employment status and psychological effects of caesarean section, (p= 0.121).

Table 4.4 below shows the distribution of respondents` mode of transport to the hospital. A huge percentage, 91.2 % (n= 198) used public means of transport. Only 6.5 % (n= 14) and 2.3 % (n=1) used private means of transport or walked to the hospital, respectively. There was not a statistically significant relationship (table 4.5) between mode of transport to the hospital and respondents` experiencing the psychological effects of caesarean section, (p= 0.551).

Table 4.4 also shows the distribution monthly income distribution of the respondents which ranged from Ksh 0 to above Ksh 30 000. A bigger percentage of the respondents, 25.8 % (n= 56) and 33.2 % (n= 72) earned a monthly income of up to Ksh 10 000 and between Ksh 11 000 and Ksh 20 000 respectively. Those who earned between Ksh 21 000 and Ksh 30 000 were 30.4 % (n= 66) while only 10.6 % (n= 23) of the respondents earned a monthly income of more than Ksh 30 000. Table 4.5 indicates that there was a statistically significant relationship between a mother`s monthly income and their experiencing psychological effects of caesarean section. Those who earned Ksh 0- 10 000 and Ksh 11-20 000 were 3 times and almost 4 times (respectively) more likely to experience psychological effects of caesarean section compared to those who earned a monthly income of more than Ksh 30 000, (OR 3.029, 3.778 p= 0.031).

Majority of the respondents, 72.0 % (n=178) indicated that they resided in permanent houses. Only 15.7 % (n= 34) and 2.3 % (n=5) noted that they stayed in Mabati and grass thatched houses respectively. There was not a statistically significant relationship between type of houses the respondents were residing in and their experiencing psychological effects of caesarean section.

Table 4.4: Distribution of socio-economic factors of the respondents

Socio-economic factor	**Frequency**	**Percentage**
Employment status	94	43.3
Self-employed	51	23.5
Formally employed	53	24.4
Not-employed	19	8.8
Student		
Mode of transport to hospital		
Public	198	91.2
Private	14	6.5

Foot	5	2.3
Average monthly income (Ksh)		
0-10 000	56	25.8
11 000-20 000	72	33.2
21 000-30 000	66	30.4
>30 000	23	10.6
Type of house		
Permanent	178	82.0
grass Thatched	5	2.3
Mabati	34	15.7

Table 4.5: Relationship between socio-economic factors and psychological effects of caesarean section

Socio-economic factor	**Experienced psychological effects after CS**		x^2	**Odds ratio**	**P-value**
	Yes	**No**			
	N (%).	**N (%).**			
Employment status					
Self-employed	58(61.7)	36(38.3)		1.790	
Formally employed	28(54.9)	23(45.1)	5.819	1.353	0.121
Unemployed	39(73.6)	14(26.4)		3.095	
Student	9(47.4)	9(52.6)		1	
Mode of transport to hospital					
Public	124(62.6)	74(37.4)		2.514	

Private	8(57.1)	6(42.9)	1.192	2.000	0.551
Foot	2(40.0)	3(60.0)		1	
Average monthly income (Ksh)					
0-10 000	37(66.1)	19(33.9)		3.029	
11 000-20 000	51(70.8)	21(29.2)	8.845	3.778	0.031
21 000-30 000	37(56.1)	29(43.9)		1.985	
>30 000	9(39.1)	14(60.9)		1	
Type of house living in					
Permanent	110(61.8)	68(38.2)		1.132	
Mabati	20(58.8)	14(41.2)	0.829	1	0.66
Grass Thatched	4(80.0)	1(20.0)		0.829	2.800

The key informers indicated that the type of housing and mode of transport to the hospital of the women did not have any influence on them in experiencing psychological effects after caesarean section. However, a nurse said; ` *the monthly income of a woman, though not having a great influence, can slightly determine whether she can afford the best post caesarean section medical care hence reducing her chances of experiencing some psychological effects that are associated with caesarean section.'*

Results from the focused group discussion showed that they had similar thoughts to the key informers as they noted that, mode of transport to the hospital and type of house she stayed in had no influence on her experiencing psychological effects of caesarean section. However, they argued that employment status would have an influence as employed women have enough finances to afford the best post-caesarean section delivery care.

4.5 Cultural and religious factors associated with psychological effects of caesarean section

Table 4.6 and 4.7 shows the cultural and religious characteristics of the respondents. About half of the respondents were Catholics, 109 (50.2 %) followed by Protestants, 85 (39.2 %). Muslim were only 23 (10.6 %). Table 4.7 shows that there was no statistically significant relationship between the respondents` religion and their likelihood of experiencing psychological effects of caesarean section, (p= 0.391).

Less than half of the respondents, 88 (40.6 %) indicated that their people had a good attitudes towards caesarean section, while 97 (44.7 %) respondents reported that their people viewed caesarean section as a bad thing. A smaller number, 32 (14.7 %) noted that they were not aware of their people`s attitude towards caesarean section. The respondents whose relatives had bad attitudes towards caesarean section said that their relatives told them that the surgery is risky and therefore one can easily die, it restricts number of times the woman is allowed to carry a pregnancy in the future, it leaves scars and that it is a bad omen as it is not the normal way of delivering. Table 4.7 shows that there was a significant relationship between the respondents` relatives' view of caesarean section and the mothers` experiencing psychological effects of caesarean section. The respondents whose people viewed caesarean section as a bad thing were 1.5 times more likely to experience psychological effects of caesarean section compared to those who were not aware of their people`s view of caesarean section, (OR 1.550 p= < 0.001).

Slightly more than half, 113 (52.1 %) of the respondents did not have any cultural beliefs that are negative towards caesarean section. Those who did not know whether there were cultural beliefs negative to caesarean section were 90 (41.5 %) while only 14 (6.5 %) indicate that there were actually cultural beliefs that are negative to caesarean section noting that they made them fear undergoing caesarean delivery. Table 4.7 shows that there was not a significant relationship

between having cultural beliefs that are negative towards caesarean section and experiencing psychological effects of caesarean section, (p= 0.219).

As illustrated on table 4.6 below, about half of the participants, 110 (50.7 %) did not have taboos that are negative towards caesarean section while 95 (48.8 %) were not aware whether those taboos existed. A smaller percentage, 5.5 % (n= 12) noted that they had taboos that are negative towards caesarean section and that they negatively affected them by restricting them from undergoing the surgery. However, there was not significant relationship between taboos that are negative towards caesarean section and the women`s experiencing psychological effects of caesarean section.

Slightly more than half of the participants, 113 (51.1 %) indicated that there were no cultural practices negative towards caesarean section, 96 (44.2 %) were not aware whether those practices existed or not while a smaller percentage, 8 (3.7 %) indicated that those practices negative towards caesarean section really existed. Table 4.7 shows that there was a statistically significant relationship between cultural practices and psychological effects of caesarean section. Those who had cultural practices negative towards caesarean section were almost one and half times more likely to experience psychological effects of caesarean section compared to those who did not know of the existence of these practices, (OR 1.355 p= 0.047).

A bigger portion of the participants, 110 (50.7 %) indicated that they belonged to a social group including Facebook and Whatsapp groups and also noted that they discussed various issues in these groups including pregnancy outcomes. Majority of the participants noted that the discussions on caesarean section positively influenced their attitude to towards it as members talked in detail about it educating each other and gaining confidence about it. The rest 107 (49.3 %) did not belong to any social group. Table 4.7 below shows that there was a statistically

significant relationship between belonging to a social group and the experiencing of psychological effects of caesarean section. Those who belonged to a social group were half as much likely to experience psychological effects of caesarean section compared to those who did not, (OR 0.494 p= 0.013).

Table 4.6: Distribution of the respondents` cultural and religious factors

Cultural/religious factor	**Frequency**	**Percentage**
Religion		
Muslim	23	10.6
Catholic	109	50.2
Protestant	85	39.2
African traditional	0	0.0
Hindu	0	0.0
View of relatives towards CS		
Good	88	40.6
Bad	97	44.7
Don`t know	32	14.7
Negative cultural beliefs toward CS		
Yes	14	6.5
No	113	52.1
Don`t know	90	41.5
Taboos which are negative toward CS		
Yes	12	5.5
No	110	50.7
Don`t know	95	43.8

Negative cultural practices toward CS		
Yes	8	3.7
No	113	52.1
Don`t know	96	44.2
Traditional practices which are not in keeping with CS		
Yes	9	4.1
No	145	66.8
Don`t know	63	29.0
Belong to any social group		
Yes	110	50.7
No	107	49.3

Table 4.7: Relationship between cultural factors and psychological effects of caesarean section

Variable	**Experienced psychological effects after CS.**		x^2	**Odds ratio**	**P-value**
	Yes	**No**			
	N (%).	**N (%).**			
Religion					
Muslim	17(73.90	6(26.1)		1.711	
Catholic	64(58.7)	45(41.3)	1.879	0.859	0.391
Protestant	53(62.4)	32(37.6)		1	
African traditional	0 (0.0)	0(0.0)		-	
Hindu	0(0.0)	0(0.0)		-	

View of relatives towards CS				
Good	37(42.0) 51(58.0)		0.330	
Bad	75(77.3) 22(22.7)	25.085	1.550	<0.001
Don`t know	22(68.8) 10(31.3)		1	
Negative cultural beliefs toward CS				
Yes	8(57.1) 6(42.9)		1.067	
No	76(67.3) 37(32.7)	3.039	1.643	0.219
Don`t know	50(55.6) 40(44.4)		1	
Taboos that are negative toward CS				
Yes	7(58.3) 5(41.7)		1.018	
No	72(65.5) 38(34.5)	1.296	1.378	0.523
Don`t know	55(57.9) 40(42.1)		1	
Negative cultural practices toward CS				
Yes	4(50.0) 4(50.0)		0.714	
No	74(65.5) 39(34.5)	1.610	1.355	0.047
Don`t know	56(58.3) 40(41.7)		1	
Traditional practices which are not in keeping with CS				
Yes	6(66.7) 3(33.3)		0.930	
No	85(58.6) 60(41.4)	1.822	0.659	0.402
Don`t know	43(68.3) 20(31.7)		1	

Belong to any social group				
Yes	59(53.6)	51(46.4)	6.220	0.494	0.013
No	75(70.1)	32(29.9)	1		
Belong to any peer group				
Yes	38(55.1)	31(44.9)	1.911	0.664	0.167
No	96(64.9)	52(35.1)	1		

Results from the focused group discussion indicated that ethnicity and religion did not influence the likelihood of women to experience psychological effects of caesarean section. The key informers also reported that religion and ethnicity did not have any influence on the prevalence of psychological effects of caesarean section in any way. However, according to the nurses, attitude of relatives towards caesarean section has a great influence on prevalence of psychological effects of caesarean section. They reported; *"If a woman`s relatives have a negative view of caesarean section, she gets anxious and stressed after the surgery when she has to go back to her people who detests the type of surgery."*

4.6 Hospital related factors associated with psychological effects of caesarean section

Table 4.8 below shows the distribution of hospital related factors that were tested to check if they had an influence on psychological effects of caesarean section on mothers. They composed distance from home to the health center, adequacy and availability of health providers and facilities and perceived quality of the services among other factors. KNH is a referral hospital serving clients from across the country, majority of the respondents, 117 (53.0 %) travelled for more than 10 kms to get to the hospital. Only 52 (24.0 %) of the respondents indicated that their

homes were less than 5 kms from the hospital. Table 4.9 shows that there was no statistically significant relationship between distance to the hospital and psychological effects of caesarean section, p= 0.553.

A bigger portion of the respondents, 151 (69.6 %) noted that the quality of the hospital was good while only 2 (0.9 %) indicated otherwise. Sixty-four (29.5 %) were undecided. However, there was not a statistically significant relationship between quality of the hospital and psychological effects of caesarean section, p= 0.717.

Table 4.8 shows that 75 (36.4 %) of the respondents indicated that the hospital had enough health service providers, 84 (38.7 %) felt otherwise while the rest 58 (26.7 %) indicated that they did not know. Table 4.10 shows that there was a statistically significant relationship between adequacy of health service providers and psychological effects of caesarean section. Those who reported that the hospital had inadequate health services providers were 3 times more likely to experience psychological effects of caesarean section compared to those who noted that the health service providers are adequate, (OR 2.987 p= 0.02).

Majority of the respondents, 144 (66.4 %) noted that the quality of health service providers was good while only 5 (2.3 %) indicated otherwise. About quarter of the respondents, 58 (26.7 %) were undecided. However, there was no statistically significant relationship between the quality of health service providers and psychological effects of caesarean section, p= 0.833 (Table 4.9).

Since the CS procedure is performed while the patient is sedated and therefore unconscious, a bigger portion of the respondents, 140 (64.5 %) indicated that they were not aware whether everything they needed during the procedure and after caesarean delivery care was availed to them, 67 (30.9 %) noted that everything they needed was provided while a smaller percentage, 10 (4.6 %) indicated that they were not provided with everything they needed. However, table

4.10 shows that there was no statistically significant relationship between the patient being provided with everything they needed and the psychological effects of caesarean section, (p= 0.366). Other factors which were found to lack a statistically significant relationship with psychological effects of caesarean section were availability of a maternity theatre (p= 0.591), and availability of a laboratory for CS care delivery (p= 0.381).

The participants who indicated that they had been counseled or given a health education in their care, 129 (59.4 %) were more than those who had not been counseled, 88 (40.6 %). Table 4.9 shows that there was a statistically significant relationship between counselling/health education and psychological effects of caesarean section. Those who had been counseled were half as much likely to experience psychological effects of caesarean section compared to those who had not received any counselling or health education, (OR 0.510 p= 0.018).

Table 4.8: Respondents` responses on various hospital related factors

Hospital related factor	**Frequency**	**Percentage**
Distance of the hospital from home		
0-5 kms	52	24.0
6-10 kms	50	23.0
11-15 kms	29	13.4
>15 kms	86	39.6
Quality of the hospital rating		
Good	151	69.6
Bad	2	0.9
Undecided	64	29.5

Health service provider's adequacy		
Yes	75	34.6
No	84	38.7
Undecided	58	26.7
Quality of health service providers based on the quality of care received		
Good	144	66.4
Bad	5	2.3
Undecided	68	31.3
Everything was available for your CS		
Yes	67	30.9
No	10	4.6
Undecided	140	64.5
Maternity theatre was available for caesarean delivery care		
Yes	102	47.0
No	3	1.4
Undecided	112	51.6
There was adequate equipment for caesarean delivery		
Yes	69	31.8
No	4	1.8
Undecided	144	66.4
There was a laboratory for CS delivery care		
Yes	87	40.1
No	3	1.4

Undecided	127	58.5
Given counselling/health education in your care		
Yes	88	40.6
No	129	59.4

Table 4.9: Relationship between hospital-related factors and psychological effects of caesarean section

Hospital related factors	**Experienced psychological effects after CS.**		**Odds ratio**	**P-value**
	Yes	**No**		
	N (%).	**N (%).**		
Distance of the hospital from home				
0-5 kms	30(57.7)	32(42.3)	0.808	
6-10 kms	29(58.0)	21(42.0)	2.096 0.818	0.553
11-15 kms	21(72.4)	8(27.6)	1.556	
>15 kms	54(62.8)	32(37.2)	1	
Quality of the hospital rating				
Good	91(60.3)	60(39.7)	0.794	
Bad	1(50.0)	1(50.0)	0.665 0.524	0.717
Undecided	42(65.6)	22(34.4)	1	
Health service providers are adequate				
Yes	40(53.3)	60(39.7)	1.067	

No	64(76.2) 20(23.8)	12.134	2.987	0.02
Undecided	30(51.7) 28(48.3)		1	
Quality of health service providers				
Good	87(60.4) 57(39.6)		0.883	
Bad	3(60.0) 2(40)	0.366	0.818	0.833
Undecided	44(64.7) 24(35.3)		1	
Everything was available for your CS				
Yes	43(64.2) 24(35.8)		1.091	
No	4(40) 6(60.0)	2.179	0.406	0.336
Undecided	87(62.1) 53(37.9)		1	
Maternity theatre was available for CS care				
Yes	63(61.8) 39(38.2)		0.969	
No	1(33.3) 2(66.7)	1.052	0.300	0.591
Undecided	70(62.5) 42(37.5)		1	
There was a laboratory for CS care delivery				
Yes	54(62.1) 33(37.9)		1.063	
No	3(100.0) 0(0.0)	1.930	-	0.381
Undecided	77(60.6) 50(39.4)		1	
Given counselling/health information in your care				
Yes	46(52.3) 42(47.7)	5.631	0.510	0.018
No	88(68.2) 41(31.8)		1	

Results from the focused group discussion indicated that majority of hospital related factors including distance to the hospital from the place of residence, quality of the hospital, availability

of facilities like CS theatre do not have a direct influence on the mothers experiencing psychological effects of caesarean section. They noted that KNH is a referral hospital receiving patients from across the country hence distance to the hospital was not an issue. However, they both recognized the great influence of pre and post caesarean delivery counselling on the psychological effects of caesarean section. One participant said; "*when we mothers are counseled and properly enlightened on the risks involved, the complications and the possible outcomes and also how to tackle the uncertainties that comes after the surgery, we feel relaxed and re-assured hence avoiding the negative impact of psychological effects of caesarean section."*

The nurses also noted that counseling was critical in minimizing the psychological effects associated with caesarian section delivery. One nurse also pointed out that they were sometimes not adequate because of the assigned huge workload hence were not always available to the patient and this left the patient lonely and therefore exposed to experiencing psychological effects of caesarean section.

4.7 Maternal factors associated with psychological effects of caesarean section

4.7.1 Mother`s knowledge on psychological effects of caesarean section

Table 4.10 shows the respondents` responses on a series of knowledge questions presented to them. The participants were asked the extend of knowledge they had on various aspects of caesarean section including the dangers involved, possible complications, its benefits, the normal expected outcome, caesarean delivery care needs among other aspects.

A huge number of respondents, 142 (65.4 %) and 54 (24.9 %) indicated that they lacked or had little knowledge on the CS risks or dangers involved. Only 17 (7.8 %) and 4 (1.8 %) had enough or much knowledge on CS risks or dangers respectively. Table 4.11 shows that there was a

statistically significant relationship between knowledge on the CS risks involved and psychological effects of caesarean section. Those who lacked the awareness were almost 6 times more likely to experience psychological effects of caesarean section compared to those who had much or very much knowledge, OR 5.875 p= 0.036.

More than half of the respondents, 142 (65.4 %) noted that they lacked knowledge on possible complications of CS. Also, a significant percentage, 59 (27.2 %) had only little knowledge on the CS possible complications. Table 4.11 shows that there was a statistically significant relationship between knowledge on CS possible complications and the psychological effects of caesarean section. Those who lacked the awareness were 5 times more likely to experience the psychological effects of caesarean section compared to those who had the knowledge, OR 5.061 p= 0.044.

Other knowledge items that were found to have a significant influence on psychological effects of caesarean section as shown in table 4.11 were; knowledge on the benefits of caesarean section (OR 3.918 p= 0.024), knowledge on normal expected outcomes (OR 3.485 p= 0.030), and knowledge about delivering through CS (OR 2.348 p= 0.016). Table 4.10 also shows that majority of the mothers had no knowledge about the psychological effects of caesarean section, 179 (82.5 %) or had just a little knowledge, 198 (8.5 %). Only 14 (6.5 %) and 6 (2.8 %) had enough or much knowledge on the psychological effects of caesarean section respectively. Table 4.12 shows that there was a statistically significant relationship between mother`s knowledge on the psychological effects of caesarean section and her likelihood of experiencing the psychological effects of caesarean section. Those who lacked the knowledge were 9 times more likely to experience the psychological effects of caesarean section compared to those who were knowledgeable, OR 9.435 p= 0.035.

As shown in table 4.10 and table 4.11 some knowledge items were found not to have a statistically significant influence on the mother`s likelihood to experience the psychological effects of caesarean section. These included; Knowledge on caesarean delivery care needs (p= 0.419), knowledge about the types of CS (p= 0.248), knowledge about the gestational age at CS (p= 0.492), and knowledge about the indication for CS (p= 0.782).

Table 4.10: Respondent`s knowledge on CS and associated psychological effects

Knowledge item	**Frequency**	**Percentage**
Knowledge of CS; risks or dangers involved		
No knowledge	142	65.4
Little	54	24.9
Enough	17	7.8
Much/very much	4	1.8
Possible complications		
No knowledge	124	57.1
Little	59	27.2
Enough	27	12.4
Much/very much	7	3.2
Benefits		
No knowledge	145	66.8
Little	48	22.1
Enough	21	9.7
Much/very much	3	1.4
Normal expected outcome		
No knowledge	181	83.4

Little	21	9.7
Enough	12	5.5
Much/very much	3	1.4
Knowledge about caesarean delivery needs		
No knowledge	191	88.0
Little	17	7.8
Enough	9	4.1
Much/very much	0	0.0
Knowledge about delivering through CS		
No knowledge	193	88.9
Little	17	7.8
Enough	7	3.2
Much/very much	0	0.0
Knowledge about the psychological effects of CS		
No knowledge	179	82.5
Little	18	8.3
Enough	14	6.5
Much/very much	6	2.8
Knowledge about the type of CS		
No knowledge	205	94.5
Little	10	4.6
Enough	2	0.9

Much/very much	0	0.0
Knowledge about the gestational age at CS		
No knowledge	162	74.7
Little	29	13.4
Enough	25	11.5
Much/very much	26	12.0
Knowledge about the indication for CS		
No knowledge	148	68.2
Little	40	18.4
Enough	29	13.4
Much/very much	0	0.0

Table 4.11: Relationship between knowledge of CS and psychological effects of caesarean section

Knowledge item	**Experienced psychological effects after CS.**		x^2	**Odds ratio**	**P-value**
	Yes	**No**			
	N (%).	**N (%).**			
Knowledge of CS; Risks or dangers involved					
No knowledge	94(66.2)	48(33.8)		5.875	
Little	33(61.1)	21(38.9)	8.523	4.714	0.036
Enough	6(35.3)	11(64.7)		1.636	
Much/very much	1(25.0)	3(75.0)		1	
Possible complications					

No knowledge	83(66.9) 41(33.1)		5.061		
Little	37(62.7) 22(37.3)	8.121	4.205	0.044	
Enough	12(44.4) 15(55.6)		2.000		
Much/very much	2(28.6) 5(71.4)		1		
Benefits					
No knowledge	96(66.2) 49(33.8)		3.918		
Little	30(62.5) 18(37.5)	9.436	3.333	0.024	
Enough	7(33.3) 14(66.7)		1.000		
Much/very much	1(33.3) 2(66.7)		1		
Normal expected outcomes					
No knowledge	115(63.5) 66(36.5)		3.485		
Little	15(71.4) 6(28.6)	8.965	5.000	0.030	
Enough	3(25.0) 9(75.0)		0.667		
Much/very much	1(33.3) 2(66.7)		1		
Knowledge about caesarean delivery care needs					
No knowledge	120(62.8) 71(37.2)		0.845		
Little	8(47.1) 9(52.9)	1.739	0.444	0.419	
Enough	6(66.7) 3(33.3)		1		
Much/very much	0(0.0) 0(0.0)		-		
Knowledge about delivering through CS					
No knowledge	124(65.3) 66(34.7)		2.348		
Little	6(33.3) 12(66.7)	0.625	8.288		0.016

Enough	4(44.4) 5(55.6)		1	
Much/very much	0(0.0) 0(00.0)		-	
Knowledge about the psychological effects of CS				
No knowledge	117(65.4) 62(34.6)		9.435	
Little	11(61.1) 7(38.9)	10.315	7.857	0.035
Enough	5(35.7) 9(64.3)		2.778	
Much/very much	1(20.0) 4(80.0)		1	
Knowledge about the type of CS				
No knowledge	124(60.5) 80(39.2)		0.775	
Little	8(80.0) 2(20.0)	2.787	2.000	0.248
Enough	2(66.7) 1(33.3)		1	
Much/very much	0(0.0) 0(0.0)		-	
Knowledge about the gestational age at CS				
No knowledge	103(63.2) 60(36.8)		1.144	
Little	16(55.2) 13(44.8)	2.408	0.821	0.492
Enough	15(60.0) 10(40.0)		1	
Much/very much	0(0.0) 0(00.0)		-	
Knowledge about the indications for CS				
No knowledge	92(62.2) 56(37.8)		0.865	
Little	23(57.5) 17(42.5)	0.491	0.712	0.782
Enough	19(65.5) 10(34.5)		1	
Much/very much	0(0.0) 0(0.00)		-	

The key informers said that adequate knowledge and awareness on the various aspects of caesarean section is critical in alleviating the psychological effects that comes after the caesarean section surgery. One nurse said; *"women with adequate knowledge, not only on the psychological aspect of CS but also on the general aspects including the possible risks and complications, possible outcome etc. are less likely to either experience or be negatively influenced by the psychological effects of caesarean section."*

Results from the focused group discussion also echoed the same opinion that mothers who are knowledgeable about CS delivery are less likely to experience psychological effects after the operation.

4.7.2 Participant`s attitude towards CS

Although majority of the respondents agreed/strongly that nurses could advise them on the preferred mode of delivery (73.7 % n= 160), mothers should have their own right to request for the type of delivery (59.5 % n= 129), vaginal birth is natural and the most accepted type of delivery (64.0 % n= 139), relatives should be involved in deciding type of delivery (82.5 % n= 179) and that health workers should decide on the best type of delivery and advice accordingly (80.6 % n= 175), they showed negative attitude towards items directly relating to caesarean section. For instance, majority felt that a woman would take longer time to regain her health status after CS compared to after vaginal delivery (53.0 % n= 115), they feared CS and did not trust it (77.4 % n= 168), they had little faith in doctors, nurses and midwives concerning CS (81.6 % n= 177) and they felt that there are a lot of uncertainties about CS that nurses, doctors and midwives do not know (80.2 % n= 174). However, table 4.12 shows that there was no significant relationship between these attitude items and psychological effects of caesarean

section but item number two which asked the respondents their attitude on whether a mother should have her own right to request for the type of delivery, P= 0.050

Table 4.12: Participant`s attitudes toward caesarean section

Item	**Strongly agree N (%)**	**Agree N (%)**	**Neutral N (%)**	**Disagree N (%)**	**Strongly disagree N (%)**	**Significance p-value**
Nurses can`t advise me on preferred mode of delivery	29(13.4)	26(12.0)	2(0.9)	153(70.5)	7(3.2)	0.611
A mother should have her own right to request for type of delivery	45(20.7)	42(19.4)	190.5)	105(48.4)	24(11.1)	0.050
Vaginal birth is natural and the most accepted type of delivery	25(1.5)	34(15.7)	19(8.8)	114(52.5)	25(11.5)	0.993
A woman will regain her health status sooner after vaginal delivery than caesarean section	24(11.1)	39(18.0)	39(18.0)	86(39.6)	29(13.4)	0.258
Children born by caesarean section are healthier than those borne through vaginal delivery	15(6.9)	20(9.2)	7(3.2)	135(62.2)	40(18.4)	0.259
I can`t decide on type of delivery alone without my	12(5.5)	21(9.7)	5(2.3)	80(36.9)	99(45.6)	0.113

relatives						
I fear caesarean section and don`t trust it	16(7.4)	22(10.1)	11(5.1)	117(53.9)	51(23.5)	0.954
The health works should decide on the best type of delivery and advise accordingly	12(5.5)	24(11.1)	6(2.8)	86(39.6)	89(41.0)	0.662
I have very little faith in doctors, nurses and midwives concerning caesarean section	12(5.5)	18(8.3)	10(4.6)	128(59.0)	49(22.6)	0.612
There are a lot of uncertainties about caesarean section that nurses, doctors and midwives don`t know	14(6.5)	14(6.5)	15(6.9)	76(35.0)	98(45.2)	0.579

Results from the focused group discussion indicated that mothers have an unfavorable attitude towards caesarean section which stems from the wayward societal view of caesarean section. They noted that this negative view of caesarean section predisposes them to psychological effects not only after the surgery has been performed but right from the moment the woman is advised that the only possible method of delivery to be employed is caesarean section.

4.7.3 Past experience

The figure below shows the common places women delivered from in previous pregnancies. The most common place was at home, 63.8 % then at hospital, 47.5 %. Some of the women delivered while on the way to the hospital, 6.3 %. However, there was not a statistically significant

relationship between places of past deliveries and psychological effects of caesarean section, (Table 4.13.) home p= 0.307 hospital p= 0.166 on the way p= 0.662.

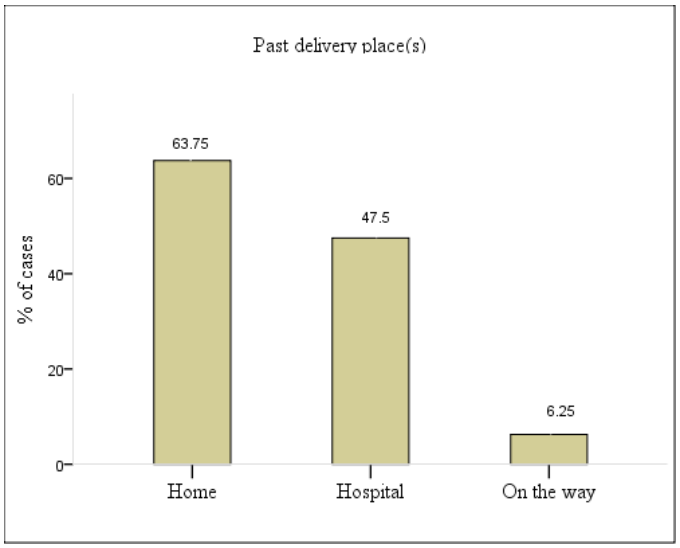

Figure 4.7: Past delivery place(s)

Table 4.13: Relationship between past place(s) of delivery and psychological effects of caesarean section

Variable (Past place(s) of delivery)	**Experienced psychological effects after CS.** **Yes** **N (%).**	**No** **N (%).**	x^2	**P-value**
Home	23(45.1) 28(54.9)	35(54.7) 29(45.3)	1.044	0.307
Hospital	20(60.6) 13(39.4)	38(46.3) 44(53.7)	1.915	0.166
On the way	3(60.0) 2(40.0)	55(50.0) 55(50.0)	0.191	0.662

Table 4.14 shows that 71 (32.3 %) of the participants did not attend all the antenatal visits during the previous pregnancy while only 45 (20.7 %) had fully attended the scheduled visits. Table

4.15 shows that there was a statistically significant relationship between previous antenatal attendance and psychological effects of caesarean section. Those who did not strictly adhere to the scheduled antenatal visits were 2 times more likely to experience psychological effects of caesarean section compared to those who had fully attended, OR 2.477 p= 0.020.

The mothers who had previous delivered through vaginal delivery were 107 (49.3 %) while those who had delivered through CS were 8 (3.7 %). Table 4.15 shows that there was a significant relationship between previous method of delivery and psychological effects of caesarean section. Those who had never delivered through CS were 8 times more likely to experience psychological effects of caesarean section compared to those who had, OR 8.286 p= 0.023. Satisfaction with the previous method of delivery and knowledge on why the method was chosen was found to have no significant relationship with current experience of psychological effects of caesarean section, p= 0.637 and p= 0.924 respectively, (Table 4.15).

Table 4.14: Respondent`s past experience on childbirth

Variable	Frequency	Percentage
Antenatal adherence		
Yes	45	20.7
No	71	32.3
N/A	102	47.0
Method of delivery		
Vaginal	107	49.3
CS	8	3.7
N/A	102	47.0
Satisfaction with the method		
Not satisfied	14	6.5

A little satisfied	12	5.5
Satisfied	57	26.3
Very satisfied	28	12.9
Extremely satisfied	4	1.8
N/A	102	47.0
Knowledge on why the method was used		
Yes	103	47.5
No	12	5.5
N/A	102	47.0

Table 4.15: Relationship between past experience on childbirth and psychological effects of caesarean section

Variable	**Experienced psychological effects after CS.**		x^2	**Odds ratio**	**P-value**
	Yes	**No**			
	N (%).	**N (%).**			
Attended all the scheduled antenatal visits					
Yes	29(64.4)	16(35.6)	5.427	2.477	0.020
No	30(42.3)	41(57.7)		1	
Delivery method					
Vaginal	58(54.2)	49(45.8)	5.182	8.286	0.023
CS	1(12.5)	7(87.5)		1	

Satisfaction with the method					
Not satisfied	6(42.9)	8(57.1)		2.250	
A little satisfied	7(58.3)	5(41.7)	2.545	4.200	0.637
Satisfied	32(56.1)	25(43.9)		3.840	
Very satisfied	13(46.4)	15(53.6)		2.600	
Extremely satisfied	1(25.0)	3(75.0)		1	
Knowledge on why the method was chosen					
Knows	53(51.5)	50(48.5)	0.009	1.060	0.924
Don`t know	6(50.0)	6(50.0)		1	

4.7.4 Current practice

Only 8 (3.7 %) and 56 (25.8 %) respondents had much or enough experience with the health service providers in their practice respectively, 38 (17.5 %) had little experience while 54 (24.9 %) had very little experience with the health service providers, 61 (28.1 %) had no experience with the health service providers in their practice. Table 4.17 shows that there was a statistically significant relationship between the respondents` past experience with health service providers in their practice and the respondent`s current experience of psychological effects of caesarean section. Those with no past experience with the health service providers were 4 times more likely to experience the psychological effects of caesarean section compared to those who had much experience, OR 4.314 p= 0.046.

Majority of the respondents, 131 (60.4 %) indicated that they had been hospitalized before while 86 (39.6 %) indicated otherwise. Table 4.17 shows that there was a significant relationship between previous hospitalization and the current experience of psychological effects of caesarean section. Those who had been hospitalized before were half as much likely to experience the psychological effects of caesarean section compared to those who had never been hospitalized before, OR 0.516 p= 0.024.

Table 4.16: Respondent`s current practice on childbirth

Variable	Frequency	Percentage
Past experience with doctors,		
Nurses and midwives in their practice		
None	61	28.1
Very little	54	24.9
Little	38	17.5
Enough	56	25.8
Much	8	3.7
Hospitalized before		
Yes	131	60.4
No	86	39.6

Table 4.17: Relationship between current practice on childbirth and psychological effects of caesarean section

Variable	Experienced psychological effects after CS. Yes N (%).	No N (%).	x^2	Odds ratio	P-value
Past experience with health workers					
None	44(72.1)	17(27.9)		4.314	
Very little	36(66.7)	18(33.3)	9.704	3.333	0.046
Little	24(63.2)	14(36.8)		2.857	
Enough	27(48.2)	29(51.8)		1.552	
Much	3(37.5)	5(62.5)		1	
Hospitalized before					
Yes	73(55.7)	58(44.3)	5.082	0.516	0.024
No	61(70.9)	25(29.1)		1	

Results from the focused group discussion indicated that past experience had an impact on how a woman handles the current delivery. They also noted that those women who had delivered several times before had adequate knowledge on what was on their way hence were unlikely to be stressed. One participant said, "*wamama wamejifungua mara kadhaa huwa na uzoefu wa hii maneno so ni hard wakue stressed up na vitu ndogo ka hizi"* (women who have delivered several times are unlikely to be stressed with tiny issues of caesarean section).

CHAPTER FIVE: DISCUSSION

5.1 Introduction

Presented herein are the results and discussions of the study from which relevant conclusions and recommendations have been made. All objectives in the study have been addressed and citations made from relevant literature from other research presentations. .

5.2 Discussion

5.2.1 Psychological effects of caesarean section

The caesarean section delivery being an extremely uncomfortable procedure, it is bound to put a permanent emotional scar on those involved. Sam McCulloh (2016), in his study, emotional scars after caesarean delivery mentioned the followings as common challenging emotions: guilt, trauma, anger, resentment, shock, loss, detachment, failure and low self-esteem. In addition, (Norberg, and Pantano, 2016) in their study found that the process of delivering by the caesarean method does not stop entirely when the baby is delivered and therefore, may impact greatly on the mother if not well addressed. With regards to this, this study found that a larger percentage of the mothers, (61.8 % n= 134) had experienced psychological effects after having caesarean birth. The most commonly reported psychological effects experienced after caesarean section were anxiety (96.4 %), fear for the next pregnancy (89.9 %), post-operative trauma effects (79.8 %), post-operative stress effect (68.2 %), feeling of cowardice (59.7 %) and depression (55.0 %). Other experienced effects included disappointment with mode of delivery (48.1 %), hate for hospital delivery (37.2 %), failure to have normal birth (24.0), feeling of social stigma (14.0 %) and feeling of not giving natural birth to the baby (7.0 %). Furthermore, a significant number of the mothers (61.8 %) noted that they had experienced more than two psychological effects such

as anxiety, fear for the next pregnancy, post-operative trauma effects and post-operative stress effects. These findings were supported by (Wangui, M. 2015) whose study also realized that women who delivered through caesarean section in Kenyatta National Hospital experienced psychological effects, depression being one of them. Fisher j. et al., (2015) also found that operative interventions in childbirth carries significant psychological effects including grief reaction, post-traumatic distress and depression, anxiety among a trail of other effects.

5.2.2 Demographic factors associated with psychological effects of caesarean section

The study revealed that women who were 20 years or less were more than 3 times likely to experience psychological effects of caesarean section compared to those who were above 40 years old, (OR 3.324 p= 0.041). This could be attributed to the low experience of younger women on matters of childbirth and also for the fear of the next pregnancies as caesarean section would come with complications restricting the number of pregnancies to come. This finding contradicted that of Murray et al., (2015) that there was no difference in terms of age in prevalence of the psychological effects.

Number of living children was also found to have an impact on the psychological status of women after having caesarean section. Those with 0-1 living children were nearly 3 times more likely to experience psychological effects after caesarean section compared to those with more than 3 living children, (OR 2.720 p= 0.007). This could be due to fear for the next pregnancies as caesarean section may restrict number of next pregnancies to come. The finding also revealed that women's parity has a relationship with psychological effects of caesarean section. The primiparous were slightly 2.5 times likely to experience psychological effects after having caesarean section compared to multiparous, (OR 2.612 p= 0.001). These findings were supported by the results from the key informers; both nurses and doctors said that mothers who were young

were more likely to experience psychological effects of caesarean section compared to older women citing lack of experience and need for more children by the young mothers. In addition, a nurse reported *'that primiparous women and those women with less number of children are more likely to experience psychological effects after having caesarean section because on fear for the next pregnancy.'*

Level of education (p= 0.845), marital status (p= 0.107) and place of residence (p= 0.950) were some of the demographic factors that were not associated with psychological effects of caesarean section. However, this does not completely rule out their influence on psychological effects of caesarean section, for instance, (Bernazzani et al., 2014) realized that highly educated women healed faster and experienced less psychological effects of caesarean section compared to their counterparts who had low levels of formal education. Also Behague et al,(2012) in their study concluded that the wealthy and educated women were most likely to go for Caesarean sections and attend antenatal clinic so they were well informed and had less psychological effects.

5.2.3 Socio-economic factors associated with psychological effects of caesarean section

The socio-economic determinants entail the social status and well-being of the individual. Women with higher economic status use opportunities available before, during and after the caesarean section delivery process. For instance, they are able to afford professional counselling which alleviates psychological effects. On the same note, this study realized that women`s monthly income had an effect on psychological effects of caesarean section. Those who earned Ksh 0- 10 000 and Ksh 11-20 000 were 3 times and nearly 4 times (respectively) more likely to experience psychological effects of caesarean section compared to those who earned a monthly income of more than Ksh 30 000, (OR 3.029, 3.778 p= 0.031). This finding was supported by the results from the key informers. One of the nurses said; ` *the monthly income of a woman,*

though not having a great influence, can slightly determine whether she can afford the best post caesarean section medical care hence reducing her chances of experiencing some psychological effects that are associated with caesarean section.'

The mother`s employment status (p= 0.121), mode of transport to the hospital (p= 0.551), and type of house they were living in (p= 0.660) did not have any significant influence on psychological effects of caesarean section of the mothers. These were supported by the results of Murray et al., (2015) that mothers social class has been associated with minimal to none impact on postnatal depressions because no matter the social class, if they do not take positively the caesarean section delivery, they are likely to suffer psychologically. The study found that results from the focused group discussion also had similar views. They noted that a woman`s employment status, mode of transport to the hospital and type of house she lived in had no influence on her experiencing psychological effects after caesarean section. Although these factors lack direct influence on the mother's likelihood of experiencing psychological effects after having caesarean section, they have an impact on how the mothers handle challenges after caesarean section therefore; they should not be entirely dismissed.

5.2.4 Cultural and religious factors associated with psychological effects of caesarean section

Cultural factors entail a woman`s perceptions and beliefs about a certain phenomenon and may pose a negative or positive influence on the phenomenon. The study realized that there was a significant relationship between the respondents` relatives' view of caesarean section and the mothers` likelihood of experiencing psychological effects of caesarean section. The respondents whose people viewed caesarean section as a bad thing were nearly 2 times more likely to experience psychological effects after undergoing caesarean section compared to those who were

not aware of their people`s view of caesarean section, (OR 1.550 p= < 0.001). This could be due to the fear women had of going back to their people who detested the method of delivery and would therefore possibly stigmatize them. This finding was supported by the results from the key informers; *"If a woman`s relatives have a negative view of caesarean section, she gets anxious and stressed after the surgery when she has to go back to her people who detest the type of surgery."*

The issue of cultural practices was also found to be associated with psychological effects of caesarean section. Those who had negative cultural practices towards caesarean section were almost one and half times more likely to experience psychological effects of caesarean section compared to those who did not know of the existence of these practices, (OR 1.355 p= 0.047). Ugwu Nu et al (2015) also reported in their study that some mothers refused caesarean section and others arrived late in the hospital as emergency because of cultural and religious practices or beliefs .In short, these women delayed in seeking obstetric cares.

In addition, the mothers noted that the negative cultural practices barred them from freely accessing health services and therefore, increased the psychological turmoil associated with caesarean section. These finding were supported by a study by (Gaillard, 2014) realized similar results in their study that in some cultures, it is a norm for any pregnant woman to deliver through the conventional way which is the vaginal route and any other way is strictly prohibited. As such, the women who undergo caesarean section delivery are prone to themselves as being inferior and this affects them emotionally.

Findings from the study also revealed that belonging to a social group like what's up or Face book, as indicated by the mothers, had a positive impact in alleviating the psychological effects after caesarean section. Those who belonged to a social group were nearly half as much prone to

experience psychological effects of caesarean section compared to those who did not, (OR 0.494 p= 0.013). This is because, according to these mothers, they discussed various matters including pregnancy and caesarean section and therefore are enlightened and encouraged by each other.

The following findings of the study lacked significant influence on psychological effects of caesarean section on a mother, religion (p= 0.391), having negative cultural beliefs toward caesarean section (p= 0.219), having taboos which are negative towards caesarean section (p= 0.523), having traditional practices which are not in keeping with caesarean section (p= 0.402), and belonging to a peer group (p= 0.167). However, this does not completely rule out their influence on psychological effects of caesarean section, for instance, Ugwu Nu et al (2015) reported in their study that some mothers refused caesarean section and others arrived late in the hospital as emergency because of cultural and religious practices or beliefs. In short, these women delayed seeking obstetric cares which may lead to complications that produce stress, anxieties, depressions and stigmatizations.

5.2.5 Hospital related factors associated with psychological effects of caesarean section

The hospital related factors entail the health system factors which have a bearing on the caesarean section such as the organizational structure, institutional policies, workload and prioritization of theatre cases as well as the availability of key support services. Proper hospital settings and procedures will aid in giving advice to the mothers on various key issues which will play a role in enhancing the recovery process and prevention of acquisition of psychological effects.

With regards to this, the study found that there were various hospital factors which had impacts on the psychological effects of caesarean section on the women, which include adequacy of health service providers and provision of counseling or health information. Those who reported

that the hospital had inadequate health services providers were 3 times more likely to experience psychological effects of caesarean section compared to those who perceived the health service providers as adequate, (OR 2.987 p= 0.02).

When the health service providers are adequately available to the patient, they offer a closer supervision and care and this includes psychological care. In addition, Those who had been counseled were half as much likely to experience psychological effects of caesarean section compared to those who had not received any counselling or health education, (OR 0.510 p= 0.018). This shows that counselling plays a major role in ensuring that woman is calm and assured after caesarean section hence avoiding the pain of the psychological effects. Distance from home to the hospital (p= 0.553), quality of the hospital rating (p= 0.794), quality of health service providers (p= 0.833), and availability of facilities like maternity theatre (p= 0.591), and a laboratory for caesarean section delivery (p= 0.707) were found to lack a close association with psychological effects of caesarean section but they should not be dismissed entirely. These findings were in line with the results from the focused group discussion as the participants indicated that majority of hospital related factors including distance to the hospital from the place of residence, quality of the hospital, availability of facilities like CS theatre did not have a direct influence on the mothers experiencing psychological effects of caesarean section. They noted that KNH is a referral hospital receiving patients from across the country hence distance to the hospital was not an issue. However, they recognized the great influence of pre and post caesarean delivery counselling on the psychological effects of caesarean section. One of the participants said; "*when we mothers are counseled and properly enlightened on the risks involved with, the complications and the possible outcomes of caesarean section and also how to*

tackle the uncertainties that comes after the surgery, we feel relaxed and re-assured hence avoiding the negative impact of psychological effects of caesarean section."

5.2.6 Maternal factors associated with psychological effects of caesarean section.

5.2.6.1 Mothers knowledge on caesarean section delivery

The study found that mothers lacked adequate knowledge on various aspects of caesarean section delivery including the caesarean section associated risk factors, possible complications, benefits, normal expected outcome, caesarean section delivery needs, the types, the associated psychological effects and its indications among other factors. The study went further and tested the association between these knowledge items and the psychological effects of caesarean section. There was a significant relationship between knowledge on caesarean section, involved risks and psychological effects. Those who lacked the awareness were almost 6 times more likely to experience psychological effects of caesarean section compared to those who had much or very much knowledge, OR 5.875 p= 0.036. Other knowledge items that were found to have a significant influence on psychological effects of caesarean section were; knowledge on the possible complications of caesarean section (OR 5.061 p= 0.044), knowledge on the benefits of caesarean section (OR 3.918 p= 0.024), knowledge on normal expected outcomes (OR 3.485 p= 0.030), and knowledge about delivering through CS (OR 2.348 p= 0.016). Of more importance was the mothers` knowledge on the possible psychological effects of caesarean section. Majority of them had no knowledge about the psychological effects of caesarean section, 82.5 % (n= 179) or had just a little knowledge, 8.5 % (n= 18). Compared to those who were knowledgeable on the psychological effects, those who lacked the knowledge were 9 times more likely to experience the psychological effects, (OR 9.435 p= 0.035). These findings were supported by the results

from the key informers and the focused group discussion as key informers said that adequate knowledge and awareness on the various aspects of caesarean section were critical in alleviating the psychological effects that come after the caesarean section procedure. One nurse said; *"women with adequate knowledge, not only on the psychological aspect of CS but also on the general aspects including the possible risks and complications, possible outcome etc. are less likely to either experience or be negatively influenced by the psychological effects of caesarean section."*

Results from the focused group discussion also echoed the same opinion that mothers who were knowledgeable about CS delivery were less likely to experience psychological effects after the operation. These findings hinted to the health service providers of the importance of patient education not only after the caesarean section surgery but both before and the period immediately after the surgery and recovery.

5.2.6.2 Mothers attitudes toward caesarean section

To gauge the mothers` attitude towards caesarean section, they were presented with a series of attitude items some directly relating to caesarean section while others inclined more on childbirth at large. They recorded an unfavorable attitude towards the items directly relating to caesarean section. For instance, majority felt that a woman would take longer to regain her health status after CS compared to after vaginal delivery (53.0 % n= 115), feared delivering through caesarean section and did not trust it (77.4 % n= 168), had little faith in doctors, nurses and midwives concerning caesarean section (81.6 % n= 177) and also felt that there are lots of uncertainties about caesarean section that nurses, doctors and midwives do not know 80.2 % n= 174).). These findings were similar to those realized by Robin M. et al., (2016) that women had unfavorable attitudes towards caesarean section as they felt that women who delivered through caesarean

section take longer time to heal compared with those who delivered through vaginal delivery and that this affects breastfeeding besides leading to them experiencing a much longer time to first interaction with the infants and less positive reactions to them after birth. However, there was no significant relationship between all these attitude items and psychological effects of caesarean section but the item which asked the respondents their attitude on whether a mother should have her own right to request for the type of delivery, P= 0.050. This lack of association of majority of these attitude items and the psychological effects of caesarean section cannot be entirely dismissed as this negative attitude towards caesarean section possibly played a role in the high prevalence of the psychological effects (61.8 % n= 134) recorded by the mothers. The focused group discussion also echoed this opinion as they noted that mothers have an unfavorable attitude towards caesarean section which stems from the wayward societal view of caesarean section and that this negative view of caesarean section predisposes them to psychological effects not only after the surgery has been performed but right from the moment the woman is advised that the only possible method of delivery to be employed is caesarean section.

5.2.6.3. Past and current practice on childbirth

Some past experience on childbirth may be very vivid to a woman that would make her learn a few things and never forget hence becoming stronger to handle more challenging preceding childbirths including caesarean section. The study sought to find the effect of these past experiences on psychological effects of caesarean section to women. Among the experiences, places of past delivery, home (p= 0.307) hospital (p= 0.166) and on the way (p= 0.662) were found not to have any association with psychological effects of caesarean section. However, there was a statistically significant relationship between previous antenatal attendance and

psychological effects of caesarean section. Those who did not strictly adhere to the scheduled antenatal visits were 2 times more likely to experience psychological effects of caesarean section compared to those who had fully attended, (OR 2.477 p= 0.020). This showed that mothers who had previously strictly adhered to the antenatal visits were in a better position to handle the psychological challenges of caesarean section as they had been educated about it. There was also an association between the previous method of delivery and the current likelihood of experiencing psychological effects of caesarean section. Those mothers who had never delivered through caesarean section were 8 times more likely to experience the psychological effects of caesarean section compared to those who had, (OR 8.286 p= 0.023). Satisfaction with the previous method of delivery and knowledge on why the method was chosen was found to have no significant relationship with current experience of psychological effects of caesarean section, (p= 0.637 and p= 0.924) respectively. These findings suggested that while past experience on child birth is critical in determining how a woman handles the psychological challenges that come with preceding deliveries especially caesarean section deliveries, patient education and counseling go a long way in reassuring her and hence preventing the psychological impact on her.

The study also found that a close association of previous hospitalization and psychological effects of caesarean section existed. Those mothers who had been hospitalized before were half as much likely to experience the psychological effects of caesarean section compared to those who had never been hospitalized before, (OR 0.516 p= 0.024). In addition, there was also a statistically significant relationship between the mothers` past experience with health service providers in their practice and the respondent`s current experience of psychological effects of caesarean section. Those with no past experience with the health service providers were 4 times

more likely to experience the psychological effects of caesarean section compared to those who had much experience, (OR 4.314 p= 0.046). These findings were supported by the results from both the key informers and the focused group discussion. They both recognized the influence of past delivery experiences on the psychological impact of caesarean section. A participant from the focused group discussion said, "*wamama wamejifungua mara kadhaa huwa na uzoefu wa hii maneno so ni hard wakue stressed up na vitu ndogo ka hizi"* (women who have delivered several times are unlikely to be stressed with tiny issues of caesarean section).

5.3 Conclusion

The study concludes that;

Majority of mothers experience the psychological effects as a result of the caesarean section delivery, in addition, some experience a more than one of the effects. Demographic characteristics such as younger age, fewer numbers of living children as well as low parity of the mother are associated with psychological effects of caesarean section.

The socio-economic factor; low monthly income of the mother is associated with psychological effects of caesarean section.

Cultural factors such as the relatives` negative view of caesarean section, cultural practices negative towards caesarean section and failure of the mother to belong to a social group are associated with psychological effects of caesarean section.

The hospital related factors such as inadequate health service providers and failure of counseling the mother before and after the caesarean section delivery are associated with psychological effects of caesarean section.

Maternal factors such as inadequate knowledge on caesarean section, poor attitudes towards caesarean section, non-adherence to antenatal visit schedule, first-time caesarean section delivery, lack of history of previous hospitalization as well as the mother`s lack of experience with health care providers in their area of work are associated with psychological effects of caesarean section.

Based on the study findings which found a statistical significant psychological effect caused by caesarean section on mothers, the study hypothesis, "the **Null Hypothesis**" ('there is no significant psychological effect caused by caesarean section on mothers') is rejected.

5.4 Recommendations

The study proposes that;

1. The department of reproductive unit in the hospital to strive to reduce the prevalence of psychological effects of caesarean section (from 61.8 %) among the mothers by revising or amending the policy on the protocol on management of women who undergo caesarean section.
2. The hospital management to ensure midwives, obstetricians and psychologists counsel mothers on the possible caesarean section associated psychological effects prior and after the surgery.
3. Nurses and other health care workers in the unit to advice mothers to observe strict adherence to the antenatal visit schedule as the hospital is where they are extensively enlightened on issues of caesarean section.
4. Nurses and other healthcare workers in the unit to educate mothers on various aspects of caesarean section including the possible outcome and the associated psychological

effects, to boost their pool of knowledge concerning caesarean section and improve their attitude towards it.

5. The ministry of health to initiate a campaign against negative cultural practices and taboos towards caesarean section mainly through the use of social media.
6. The government, through the ministry of health and the hospital management to avail adequate health service providers to be availed who will be accessible to the patient at all times throughout the patient`s hospital stay.

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TIME FRAME (Ghant chart)

Duration in months / Activity	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	July 2018	Aug 2018
Problem Identification	■							
Proposal Writing		■						
Seeking consent from Ethical committees			■					
Recruitment and training of research assistants				■				
Pre-testing and administration of tools					■			
Data cleaning and analysis						■		
Report writing and presentation							■	
Compilation of final report and dissemination								■

BUDGET

Item	**Unit cost**	**Quantity**	**Cost**	**Total cost**
HUMAN RESOURCE				
Training of research assistants	1O00	2*2*1,000	4,000	
Research assistants allowance(2) lunch and transport	500	2x2x500*20days	40,000	
Principal investigator researcher(1)	1,000	2x2x1,000*20 days	20,000	
(a)Pre-testing of questionnaire				
Research assistants(2)	500	2x2x500	2,000	
Principal researcher(1)	1,000	2x2x1,000	2,000	
(a)Data collection				
Research assistants(2)	500	2x5x4x500	20,000	
Principal researcher(1)	1,000	1x5x4x1,000	20,000	
Sub-total				108,000
MATERIALS AND SUPPLIES				
Biro pens(1 dozen)	180	180x1	180	
Pencils(1 dozen)	60	60x1	60	
Rubbers(3)	10	10x3	30	
Folders(3)	100	100x3	300	
Field books	65	65x3	195	
Stapler and staples	600	600	600	
Sub-total				1,365
PROPOSAL AND THESIS				
Proposal typing and printing (50 pgs.)	35	50x35	1750	
Photocopying final report (5 copies)	3	250 x3	750	
Total				
Contingency				11,187
Grand TOTAL				123,052

APPENDICES

Appendix 1: Participant Information Sheet and Information Sheet Consent Form

Investigator: Rebecca Paye Vanahor Tel.: 0713104623

School of Nursing Sciences,

University of Nairobi

P.O. Box 19676, Nairobi.

Introduction: I am a student at the School of Nursing Sciences, University of Nairobi pursuing a Master of Science Degree in Nursing (midwifery and obstetric nursing). I am conducting a study titled: **Psychological effects of caesarean section on mother delivered in Kenyatta national hospital**

The purpose of this information is to give you details pertaining to the study that will enable you make an informed decision regarding participation. You are free to ask questions to clarify any of the aspects we will discuss in this information and consent form. I will also ask you questions regarding the study before you sign the consent form to ascertain your comprehension of the information provided.

Background and objective: The purpose of this study is to determine the psychological effects of caesarean section on mothers who have delivered through C- section at obstetric wards in KNH. Patients may have different views on the psychological effects of caesarean section care. The findings from this study could be used to help understand the impact of psychological effects of caesarean section on mothers from their own perspectives.

Participation: Participation in the study will entail answering questions which will be filled by the interviewers in the semi-structured questionnaire. You will not be subjected to any invasive procedure.

Benefits: There is no direct monetary benefit in participating in this study. However, the results of the study will be useful in facilitating the understanding of the psychological effects of caesarean section on mothers.

Risks: There are no economic or physical risks to participating in the study. However, you will take some time off your schedule to respond to questions from the researcher administered questionnaire. Also during the interview, some questions will require you to disclose some personal information that might trigger some negative feelings and possible anxiety. If this happens, the researcher or research assistants will refer you to the hospital counselor. The researcher will also endeavor to spend approximately 10- 20 minutes with you for the purpose of data collection.

Confidentiality: Confidentiality will be maintained and the information you provide will only be used for the intended purpose of the study. In addition, your name will not be required on any forms or used during publication of the final report thus ensuring your anonymity. All materials used during the study will be under lock and key and only the personnel involved in this study will have access to them. Electronic files will be saved on password and fire-wall protected computers.

Voluntary participation: Participation in this study is voluntary. Refusal to take part will not attract any penalty. You retain the right to withdraw from the study without any consequences. You are free not to answer any question during the interview.

Compensation: There is no compensation for participating in the study.

Conflict of interest: The researcher and the supervisors confirm that there is no conflict of interest amongst them.

For any Clarification, please contact

Rebecca Paye Vanahor
Researcher
Mobile Number: 0713104623
Email: repvanahor4969@gmail.com

Or

The supervisors

1. Dr. Blasio Osogo Omuga
   Mobile Number: 0722256080
   Email: mitenga@yahoo.com
   Dr. Waithira Mirie
   Mobile Number: 0727142385
   Email: mirie@uonbi.ac.ke

Or

The Secretary,
University of Nairobi- Kenyatta National Hospital Ethics and Research Committee
P.O BOX 19676 Code 00202
Tel: (254-020)-2726300 Ext 44355
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.facebook.com/uonknh.erc

Twitter:@UONKNH_ERC

Appendix 2: Informed consent form

If you Consent to Participate in the study please sign below:

I hereby consent to participate in this study. I have been informed of the nature of the study being undertaken and potential risks explained to me. I also understand that my participation in the study is voluntary and the decision to participate or not to participate will not affect my patient status in this facility in any way whatsoever. I may also choose to discontinue my involvement in the study at any stage without any explanation or consequences. I have also been reassured that my personal details and the information I will give will be kept confidential. I confirm that all my concerns about my participation in the study have been adequately addressed by the investigator and the investigator has asked me questions to ascertain my comprehension of the information provided.

Participants Signature (or thumbprint)……Date……

I confirm that I have clearly explained to the participant the nature of the study and the contents of this consent form in detail and the participant has decided to participate voluntarily without any coercion or undue pressure.

Investigator Signature……Date……...

For any Clarification, please contact

Rebecca Paye Vanahor

Researcher

Mobile Number: 0712458866

Email: repvanahor4969@gmail.com

Or

The supervisors

1. Dr. Blasio Osogo Omuga

   Mobile number: 0722256080

2. Dr. Waithira Mirie

   Mobile Number: 0727142385

   Email: mirie@uonbi.ac.ke

Or

The Secretary,

University of Nairobi- Kenyatta National Hospital Ethics and Research Committee

P.O BOX 19676 Code 00202

Tel: (254-020)-2726300 Ext 44355

Email: uonknh_erc@uonbi.ac.ke

Appendix 3: Study Questionnaire

Questionnaire for the study on **"Psychological effects of caesarean section on mothers at postnatal wards in Kenyatta national hospital"**

Serial number……. Date of interview…….

Instructions: Thank you for your willingness to respond to the following questions and participate in the study. The session will take 20 – 30 minutes. You will be interviewed by the research assistants who will fill the questionnaire for you. Your responses will be recorded just the way you put them. You are encouraged to be as accurate in your responses as possible. All gathered information will be kept confidential and will only be used for the purposes of this study.

Thank you.

SECTION I: PSYCHOLOGICAL EFFECTS OF CAESARIAN SECTION

For psychological effects of caesarean, please respond to the following questions most appropriately.

1.1 Have you ever experienced any psychological effects after caesarean section?

Yes [ ] No [ ]

1.2 If yes, which of the following effects have you experienced after caesarean section?

a) Anxiety [ ]
b) Depression [ ]
c) Disappointment with mode of delivery [ ]
d) Failure to have normal birth [ ]
e) Fair of social stigma [ ]

f) Fear for next pregnancy [ ]

g) Feeling of cowardice [ ]

h) Feeling of not suffering enough for her baby [ ]

i) Hate for hospital of delivery [ ]

j) Post operation depression [ ]

k) Post-operative stress effect [ ]

l) Post-operative trauma effects [ ]

1.3 Are there any other psychological effects experienced after caesarean section?

Yes [ ] No [ ]

If yes please specify

……

……

……

SECTION II: DEMOGRAPHIC DATA

For demographic data, please respond to the following questions most appropriately

2.1 What is your age (in completed years)? .....

2.2 What is your highest level of education (completed level)?

a) Primary level [ ] b) Secondary level [ ] c) College/university level [ ] d) Have no formal education [ ]

2.3 What is your marital status?

a) Single [ ] b) Married [ ] c) separated [ ]d) Widowed [ ] e) Divorced [ ]

2.4 How many live children do you have? (Indicate numbers)…….

2.5 How many children have you ever delivered in total? (Indicate numbers)……

2.6 Where do you stay? .....

2.7 How many people do you live within the house?

SECTION III: SOCIO- CULTURAL FACTORS

For socio- cultural data, please respond to the following questions as most appropriate

3.1 What is your religion?

a) Muslims [ ] 2) Christian [ ] 3) Protestant [ ] d) Hindu [ ] d) Traditional African [ ]

e) Others (specify)……..

3.2 What is your ethnicity? (State)…… ……..

3.3 What is the view of your people towards caesarean section?

a) Good [ ] b) bad [ ] c) I don't know [ ]

If bad, why? (Specify)……

3.4 Do you have cultural beliefs, taboos and practices that are negative towards caesarean section?

a) Cultural beliefs Yes [ ] b) No [ ] c) I don't know [ ]

If yes, in which way? (Specify) ……..

b) Taboos Yes [ ] b) No [ ] c) I don't know [ ]

If yes, in which way? (Specify) ……..

c) Cultural practices Yes [ ] b) No [ ] c) I don't know [ ]

If yes, in which way? (Specify) ……..

3.5 Do you have traditional practices that are not in keeping with caesarean section?

a) Yes [ ] b) No [ ] c) I don't know [ ]

If yes, which ones? (Specify) ……..

3.5 Do you belong to any social or peer group?

[ ] social group Yes ----- No------ If yes, which one? (Specify)……

[ ] peer group Yes------ No------If yes, which one? (Specify)……

3.6 If yes to 2.6 how the social has or peer group influenced your attitude towards caesarean section?

(Specify)……..

SECTIONIV: ECONOMIC FACTORS

For economic data, please respond to the following questions as most appropriate

4.1. What is your occupation?

a) Self-employed [ ] b) In formal employment [ ] c) Not-employed [ ]

d) Student [ ] e) others (specify)……

4.2 How much is your average monthly earnings in Ksh? (State) …….

4.3 What type of transport do you use to come to hospital?

(a) Public [ ] (b) Private [ ] (c) Foot [ ]

4.4 What type of house do you stay in?

(a) Permanent [ ] (b) Thatched [ ] (c) Mabati [ ] others (specify) ----------

SECTION V: HEALTH FACTORS

For health data, please respond to the following questions as most appropriate

5.1How far is the hospital from your home? (In approximate No of km)……

5.2 How do you, in your opinion, rate the quality of your hospital?

a) Good [ ] b) bad [ ] c) I don't know [ ] d) others (specify)……..

5.3 Are there enough health service providers in your hospital to take care of you?

a) Yes [ ] b) No [ ] c) I don't know [ ]

4What quality of health service providers are in your hospital?

a) Good [ ] b) bad [ ] c) I don't know [ ] d) others (specify)……..

a) Was there everything available that you needed in your hospital for your caesarean delivery? Yes [ ] b) No [ ] c) I don't know [ ]

5.5 Was there a maternity theatre in your hospital for caesarean delivery care?

a) Yes [ ]b) No [ ] c) I don't know [ ]

5.6 Was there enough equipment in your hospital for caesarean delivery?

a) Yes [ ] b) No [ ] c) I don't know [ ]

5.7 Was there a laboratory in your hospital for caesarean delivery care?

a) Yes [ ] b) No [ ] c) I don't know [ ]

5.8 Were you given counseling or health education in your care? Yes [ ] No [ ]

SECTION VI: KNOWLEDGE

For knowledge data, please respond to the following questions as most appropriate

6.1 During birth preparedness were you informed about caesarean section delivery?

Yes [ ] b) No [ ] c) I don't know [ ]

If yes, what advise were you given? (Specify)……..

If yes, who gave you the information? (Indicate more than 1 if applicable)

a) Doctors [ ] b) Nurses [ ] c) Midwives [ ] d) relatives [ ] (specify the relative)……

e) Friends [ ] f) Traditional medicine man [ ] g) Traditional birth attendant [ ]

d) Other [ ] (specify)……

6.2 Are you aware of the availability of free maternity services at the time when labour started?

Yes [ ] b) No [ ]

If yes, who gave you the information? (Specify)……..

6.3Which was your preferred place of birth before you came?

State why? .....

6.4 How much do you know about the following with respect to caesarean delivery?

a) risks or dangers involved

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

b) possible complications

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

c) benefits of caesarean delivery

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

d) normal expected outcome of caesarean delivery

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.5 What do you know about caesarean delivery care needs?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.6 What do you know about delivering through caesarean section?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.7 What do you know about the psychological effects of caesarean section?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.8 What do you know about complications of caesarean section?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.9 What do you know about the type of Caesarean section?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.10 Which was your preferred way of delivery before giving birth?

a) Normal delivery [ ] b) Caesarian section [ ] c) I don't know [ ] others (specify)……

State why? .....

6.11What do you know about the gestational age at caesarean section?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.12. What do you know about the indication for caesarean section (Specify)……

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify……

6.13. What do you know about the gestational age at caesarean section?

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

6.14 What do you know about the indication for caesarean section (Specify)……

Nothing [ ], little [ ] enough [ ] much [ ] very much [ ]

If you have knowledge, what do you know (specify)…….

SECTION VII: ATTITUDE

Indicate the level of agreement concerning caesarean section delivery

Statement	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Nurses can't advise me on preferred mode of delivery					
A mother should have her own right to request for the type of delivery					
Vaginal birth is natural and the most acceptable type of delivery.					
Woman will regain her health status sooner after vaginal delivery than caesarean delivery					
Children born by caesarean section are more healthier than those born through vaginal delivery					
I can't decide on type of delivery alone without my relatives					
I fear caesarean section and don't trust it					
The health workers should decide on the best type of delivery and advice accordingly					
I have very little faith in doctor, nurses and midwives, concerning caesarean section.					
There are a lot of uncertainties about c/s that nurses, doctors and midwives don't know					

Section VIII: Practice

For practice data, please respond to the following questions as most appropriate

8.1 If you delivered in the past, where was your place(s) of delivery? (Indicate more than 1 if applicable)

a) Home b) hospital c) on the way d) others (state).....

8.2 Did you attend all scheduled Antenatal visits?

a) Yes [ ] b) No [ ]

If no, why did you not? .....

8.3 Which delivery method did you have?

a) Normal delivery [ ] b) Caesarean section [ ] c) I don't know [ ] others (specify)……

8.4 How satisfied were you with the delivery method you had?

Not satisfied [ ] little satisfied [ ] satisfied [ ] very satisfied [ ] extremely satisfied [ ]

8.5 Did you understand why you delivered with the method of delivery you had?

a) Yes [ ] b) No [ ]

If yes, what was the reason? .....

Normal labor [ ] b) Fetal distress [ ] c) Obstructed labor [ ] e) others [ ] (specify)……

8.6 How much past experience have you had with nurses, doctors and midwives in their practice?

a) None [ ] b) very little [ ] c) little [ ] (d) enough [ ] (e) much [ ] (f) very much [ ]

8.7 Have you ever been hospitalized in the past?

a) Yes[ ] b) no [ ]

If yes, what was its effect on your experience?

Not satisfied [ ] little satisfied [ ] satisfied [ ] very satisfied [ ] extremely satisfied [ ]

8.8 Now that you have had a caesarean delivery, if you had a caesarean delivery again what would you do?

a) Nothing [ ] b) only slightly disturbing [ ] c) bad [ ] (d) very bad [ ] (e) extremely bad [ ] (f) others (specify)……

9. Others

8.1 According to you which other measures may be undertaken so as to prevent/manage the psychological effects of caesarian section?……

……

……

……

Appendix 4: Key Informant Interviews guide

Dear participant,

You are hereby invited to participate in a Key Informant Interview for a study on **psychological effects of caesarean section on mothers at postnatal ward in Kenyatta national hospital**

You have been chosen purposively due to the expected level of information and knowledge you have on the study topic. The details of the research are as per the information sheet for participants. Requirements for informed consent are as specified in the informed consent form which you will be expected to fill for proof of consent to participate. Be honest, free and active in your participation in responding to the questions given for due response. Participation will be guided by use of Key Informant Interviews Guide shown below. There will be an observer, moderator and note taker for your Key Informant Interview information. Recordings will also be made by use of tape recorders to store information as presented. All information gathered will be held under strict confidentiality and will be used only for purposes of the research.

1. What is the psychological effect of caesarean section on mothers attended to at Kenyatta national hospital?

2. What are the factors that influence psychological effects of caesarean section on mothers attended to at Kenyatta national hospital?

3. What is the relationship of mothers' knowledge to the psychological effects of caesarean section on mothers attended to at Kenyatta national hospital?

4. What is the relationship of mothers' attitude to the psychological effects of caesarean section on mothers attended to at Kenyatta national hospital?

5. How does mothers past experience and practice relate to the psychological effects of caesarean section on mothers attended to at Kenyatta national hospital?

Thank you very much for your participation.

Appendix 5: Focused Group Discussion Guide

Dear participant,

You are invited to participate in a focused group discussion for a study on **'psychological effects of caesarean sections on mothers sections at postnatal ward in Kenyatta national hospital'**

You will be one of the members of a focused discussion group made up of 8 to 12 participants. The details of the research are as per the information sheet for participant. Requirements for informed consent are as specified in the informed consent form which you will be expected to fill for proof of consent to participate. Be honest, free and active in your participation in responding to the questions given for due response. Participation will be guided by use of Focused Group Discussion Guide shown below. There will be an observer, moderator and note taker for your focused group discussion. Recordings will also be made by use of tape recorders to store information as presented. All information gathered will be held under strict confidentiality and will be used only for purposes of the research. What are the characteristics that determine psychological effects of caesarean sections on mothers delivered by caesarean sections in obstetric ward at Kenyatta national hospital?

1. What are the socio cultural factors that influence psychological effects of caesarean sections on mothers delivered by caesarean sections in obstetric ward at Kenyatta national hospital?
2. What are the factors that influence psychological effects of caesarean sections on mothers delivered by caesarean sections in postnatal ward at Kenyatta national hospital?

3. What are the hospital related factors that influence psychological effects of caesarean sections on mothers delivered by caesarean sections in postnatal ward at Kenyatta national hospital?
4. What are the knowledge, attitude and practice issues that determine psychological effects of caesarean sections on mothers attended to at Kenyatta national hospital?

Thank you very much for your participation.

Appendix 6: Letter to Ethics and Research Committee

Rebecca Paye Vanahor
University of Nairobi
College of Health Sciences
School of Nursing Sciences
P.O. Box, 19676-00200
KNH - Nairobi
Tel.: 0713104623

To: The Secretary
Ethical and research committee
K.N.H./University of Nairobi
P.O. box 20723
Nairobi.

Dear Sir,

RE: PERMISSION TO CONDUCT A STUDY AT KENYATTA NATIONAL AND TEACHING HOSPITAL.

I'm a second year student at the University of Nairobi, School of Nursing Sciences.

I hereby request for your permission to carry out a research on **psychological effects of caesarean sections on mothers at postnatal ward in Kenyatta national hospital.** This is a requirement in partial fulfillment of the award for Master's Degree of Science in Nursing (Midwifery/Obstetric Nursing).The research shall take a period of 4 months. Find attached is the introductory letter from the University. I look forward to a positive reply from you.

Thanks in advance.
Yours faithfully

Rebecca Paye Vanahor.

Appendix 7: letter to KNH deputy director of clinical services

Rebecca Paye Vanahor
University of Nairobi
College of Health Sciences
School of Nursing Sciences
P.O. Box, 19676-00200
KNH - Nairobi
Tel.: 0713104623

To: **KNH deputy director of clinical services**
KENYATTA NATIONAL TEACHING AND REFERRAL HOSPITAL
P.O. Box 20723 – 00202
KNH –Nairobi

Dear Sir/ Madam,

RE: PERMISSION TO CONDUCT A STUDY AT KENYATTA NATIONAL TEACHING AND REFERRAL HOSPITAL

I'm a second year student at the University of Nairobi, School of Nursing Sciences. I hereby request for your permission to carry out a research on **psychological effects of caesarean sections on mothers sections at postnatal ward in Kenyatta national hospital.**

This is a requirement in partial fulfillment for the award of Master's Degree of Science in Nursing (Midwifery/Obstetric Nursing).The research shall take a period of 4 months. Find attached is the introductory letter from the University. I do look forward for a positive reply from you.

Thanks in advance.

Yours faithfully,

Rebecca Paye Vanahor

Appendix 8: Letter to Ministry of Education, Science and Technology

Rebecca Paye Vanahor
University of Nairobi
College of Health Sciences
School of Nursing Sciences
P.O. Box, 19676-00200
KNH - Nairobi
Tel.: 0713104623

To: The Ministry of Education
National Commission for science technology and innovation
Tel: 2219420, 2241349, 310571/2218655
Nairobi

Dear Sir/ Madam

RE: PERMISSION TO CONDUCT A STUDY AT KENYATTA NATIONAL TEACHING AND REFERRAL HOSPITAL

I'm a second year student at the University of Nairobi, School of Nursing Sciences. I hereby request for your permission to carry out a research **PSYCHOLOGICAL EFFECTS OF CAESARIAN SECTION ON MOTHERS AT postnatal WARDS IN KENYATTA NATIONAL HOSPITAL.**

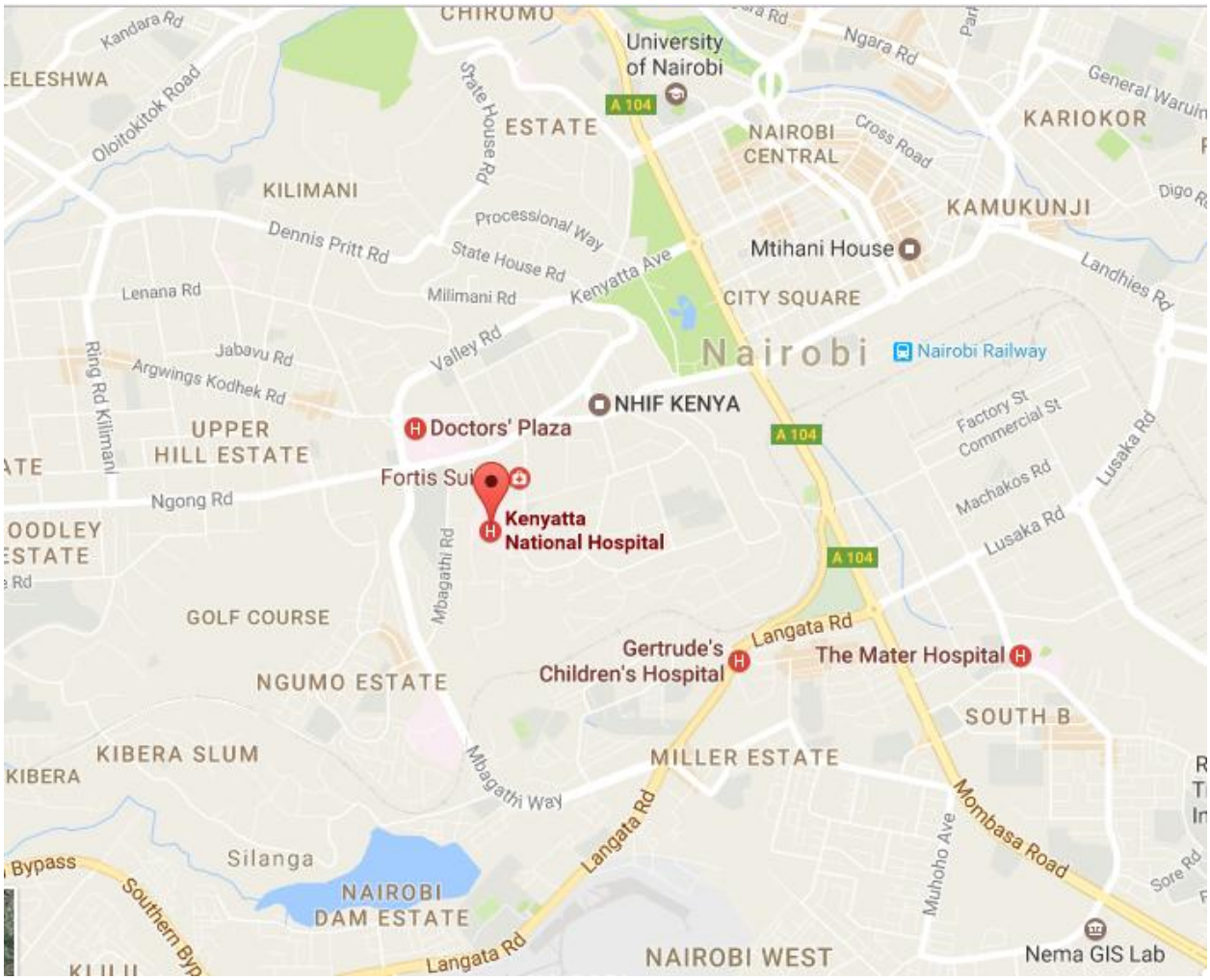
This is a requirement in partial fulfillment of the award of Master's Degree of Science in Nursing (Midwifery/Obstetric Nursing).The research shall take a period of 4 months .Find attached is the introductory letter from the University. I look forward to a positive reply from you.

Thanks in advance.

Yours faithfully,

Rebecca Paye Vanahor

Appendix 9: Location directional Map of Kenyatta National Hospital



Source: Google maps, (2017)

Appendix 10: Glossary

Caesarian Section – the use of the use of abdominal surgery to deliver one or more babies

Helplessness - feelings of powerlessness among mothers who are delivered through CS

Sense of loss - birth didn‘t turn out like expected, loss of the experience of participating in the birth experience, not being there when the baby enters the world

Mortality Intimidation – rising fear about death for both mother and baby due to CS

Post-Traumatic Stress Disorder - postnatal depression, anxiety, fear, lack of confidence among mothers who undergo CS