

**USE OF COUNSELING TO MITIGATE PSYCHOLOGICAL MORBIDITY
AFTER STILLBIRTH AMONG WOMEN IN KITUI AND MACHAKOS
COUNTIES, KENYA**

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Q97/30765/2015

**A RESEARCH THESIS SUBMITTED IN FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF
PHILOSOPHY (REPRODUCTIVE HEALTH) IN THE SCHOOL OF PUBLIC
HEALTH AND APPLIED HUMAN SCIENCES OF KENYATTA UNIVERSITY**

NOVEMBER, 2019

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University or any other institution of higher learning or for any other award.

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DEDICATION

I wish to dedicate this thesis to my children; Carlos, Patricia and Leone for their support, encouragement, love and understanding. May it inspire them to do more with their lives.

ACKNOWLEDGEMENT

Let me acknowledge the unwavering support from my supervisors Prof. Margaret Keraka and Dr. Anthony Wanyoro. They have guided this work from concept up to thesis development at every step with critical comments and constructive criticism.

I acknowledge my colleagues in the School of Public Health and Applied Human Sciences for moral support and the great guidance in research methods and data analysis. Indeed I will always be indebted to them for the journey.

I wish to offer special appreciation to the office of the Dean, School of Public Health and Applied Human Sciences for the financial support and a friendly environment for my studies.

I extended special acknowledgement to Kenyatta University management, NACOSTI, the county government of Machakos and Kitui for granting me permission and support to conduct the study.

To my research contact persons for Makueni County Ms. Florence Mulinge, Kitui County Ms. Loise Mutua and Machakos County Ms. Mirriam for being always available during the period of pre-test and data collection. I am indeed grateful. I wish to recognize the research assistants and counselors in the study area for their commitment to the research work in the respective counties.

Lastly I appreciate the participants for consenting to the study and their valuable inputs.

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ABBREVIATIONS AND ACRONYMS

ANZSA	Australian and New Zealand Stillbirth Alliance
CDC	Centre for Disease control
CHVs	Community Health Volunteers
DSM-IV	Diagnostic and Statistical Manual IV
EPDS	Edinburgh Postnatal Depression Scale
FSB	Fresh Stillbirth
HCP's	Health Care Providers
HICs	High Income Countries
HSCL	Hopkins symptom Check List
ICD	International Classification of Diseases
IES-R	Impact of Events Scale- Revised
IUFD	Intra Uterine Fetal Death
IUGR	Intra Uterine Growth Retardation
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
LMICs	Low and Middle Income Countries
MCH	Woman Child Health
MDGs	Millennium Development Goals
MSB	Macerated Stillbirth
NACOSTI	National Council for Science, Technology and Innovation

NASCOP	National Aids & STI Control Program
NICE	National Institute for Health and Care Excellence
NPV	Negative Predictive Value
Obs-Gynae	Obstetric and Gynaecology
PPV	Positive Predictive Value
PTSD	Post Traumatic Stress Disorder
SDGs	Sustainable Development Goals
SIDS	Sudden Infant Death Syndrome
STATA	Statistical Package for Social Sciences
UK	United Kingdom
UN	United Nations
UNGA	United Nations Governments Agenda
WHO	World Health Organization

DEFINITION OF OPERATIONAL TERMS

Anxiety

It is a normal reaction to stress and can be beneficial in some situations. It can alert us to dangers and help us prepare and pay attention. Anxiety disorders differ from normal feelings of nervousness or anxiousness, and involve excessive fear or anxiety (American Psychiatric Association, 2013).

Effect size

It is the difference between groups. Absolute effect size is the difference between means or average of two groups (Sullivan & Feinn, 2012).

Grief

It is the emotional experience of the psychological, behavioral, social, and physical reactions that the bereaved person may experience as a result of the death of a loved one (Stroebe *et al.*, 2017)

Psychological Morbidity

It is any psychological state considered to be outside the realm of normal mental health well-being. The term morbidity is often used to describe illness, impairment, or degradation of health (WHO, 2014). Psychological morbidity is used to refer to depression, anxiety and post traumatic stress disorder.

Peri natal audit

It is the systematic, critical analysis of peri natal care quality, diagnostic and treatment procedures, the use of resources and the resultant outcome and quality of life for women and their babies (Pattison *et al.*, 2009).

Peri natal death

It is death of a baby from 28 weeks gestation up to one week after delivery. It entails both stillbirth and early neonatal death (WHO, 2014).

Post natal Depression

It is diagnosed as presence of major depressive disorder with ‘post natal onset’ ((American Psychiatric Association, 2013).

Post Traumatic Stress Disorder

It is a mental health condition that is triggered by a terrifying event – either experiencing it or witnessing it. Symptoms may include flashbacks, nightmares and severe anxiety and uncontrollable thoughts about the event (American Psychiatric Association, 2013).

Stillbirth

To allow comparison, the World Health Organization recommends that stillbirth is any baby born without signs of life weighing at least 1000 grams or a gestational age of at least 28 weeks (WHO, 2015).

ABSTRACT

Stillbirth is a baby born without any signs of life weighing at least 1000grams or with at least 28 weeks gestation. There is no burden affecting families is big and yet invisible in society and global arena as stillbirth. Stillbirth is a traumatizing experience for most women and a risk factor to development of psychological morbidity. The kind of care women receive during this critical period influences exhibition of psychological morbidity such as depression, anxiety and post traumatic stress disorder which can be mitigated by counseling. Supporting psychological consequences of women enable them to take care of the present and subsequent children. The main aim of this study was to determine the use of counseling in mitigating psychological morbidity after stillbirth among women in Kitui and Machakos Counties. Specifically the study aimed to determine care offered to women after stillbirth, to evaluate psychological morbidity exhibited by women after stillbirth, to determine the effect of counseling on psychological morbidity after stillbirth, determine factors that influence psychological morbidity exhibited by women who deliver stillbirth after counseling and to determine the coping strategies employed by women after stillbirth. This was a quasi experimental study (non randomized controlled trial) with an interventional (Machakos County) and control group (Kitui County). Edinburgh Postnatal Depression Scale 1, Hopkins Symptom Checklist 25 (first 10 for assessing anxiety) and Impact of Events Scale-revised measured Depression, anxiety and post traumatic stress disorder respectively. Women in the interventional group were counseled while those in the control group received routine care offered by midwives in the ward. Descriptive and inferential statistics were used to analyze the data. Fishers exact test with significant $p < 0.05$ was used to determine factors influencing psychological morbidity exhibited by women who delivered stillbirth after counseling. Student t test for unpaired and paired data determined the effect of the intervention between and within the study groups respectively. Significant variables were further subjected to multi-variable logistic analysis to measure the strength of the association and control for confounding factors. The study findings revealed that women received minimal psychological support on grief reaction, memories creation and need to ascertain the cause of death. Women who delivered stillbirth experienced depression, anxiety and post traumatic stress disorder. Counseling was found to mitigate the selected psychological morbidity in this study (all P values < 0.01). Various factors influenced psychological morbidity after stillbirth (p values: age = 0.05, education < 0.01 , occupation = 0.04, years of marriage = 0.019, partners' education = 0.017, viewing the baby = 0.04, timing of death = 0.039, informed on the cause of death < 0.0108 and myths < 0.01). Key informants expressed need for professional and psychological support since they are also affected by the stillbirth experience to avoid compromising care offered to the women. The study concluded that counseling can mitigate psychological morbidity after stillbirth and women need holistic care from health care providers, families and communities where they live. The study recommends that the county governments need to integrate counseling into care of women after stillbirth, engage stakeholders to discuss stillbirth as a public health concern to address misconceptions and offer support to health care providers to offer proper care to women to mitigate the psychological morbidity.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

WHO uses the ICD definition of stillbirth as late fetal deaths (a birth weight of at least 1000 g or a gestational age of at least 28 weeks also known as third trimester stillbirth). This is essential for international comparison. Stillbirth is of public health importance especially in developing countries. About 2.7 million stillbirths occurred globally in the year 2015 (Lawn *et al.*, 2016). Of these deaths, 98% occurred in low and middle-income countries with over two-thirds in South Asia and Sub Saharan Africa. Furthermore, 67% of stillbirths occur in rural families. Global attention for stillbirths is low considering its impact on the populations. Stillbirth remains invisible as it was not counted in the ended Millennium Development Goals (MDGs) and is neither tracked by UN or Global burden of disease, both of which count burden of disease only after a live birth. The Sustainable Development Goals (SDGs) have targets for both maternal and child mortality, but not on stillbirths. Stillbirth is a major health burden though the implications are overlooked and unappreciated in contrast to other adverse pregnancy outcomes (Heazell *et al.*, 2016).

Women assume a different level of responsibility since pregnancy is a rewarding experience and may start to plan and picture themselves holding their baby. The bonding starts before delivery. Various arrangements are done earlier including shopping for the baby, identifying sex and name for the baby. Women expect the birth of a live baby. The loss of a child who is a family member is a devastating experience and traumatic event for women, partners, families and caregivers. They continue to experience grief and loss

for many more years after the stillbirth. The grief and distress experienced by parents is documented both in qualitative and quantitative studies (Kelley & Trinidad, 2012; Mills *et al.*, 2014). This bereavement, however, has often been misunderstood, stigmatized and failed to receive adequate recognition (Frøen *et al.*, 2011; Cacciatore, 2013). The women who deliver stillbirths have not been assisted to heal and continue enjoying their reproductive rights. Essential events and care provided at this sensitive time is emphasized following investigations of parents' experiences in UK, highlighting that everyone involved had 'only one chance to get it right' (Downe *et al.*, 2013). To any woman, stillbirths are not numbers or statistics but babies who die. This is a grief ignored because of the suboptimal care reported by women of reproductive age. These are unheard souls in the backyard since most women report as not good things for people to see or even talk of (Kiguli *et al.*, 2015).

Parental mental health following stillbirth requires focused interventions and support activities to mitigate psychological morbidity. Almost all parents who have stillbirth report psychological morbidity most especially depression. In Africa where discussing death is a taboo and the dead baby is not regarded as a person, most women report disenfranchised grief to avoid been viewed as out of normality. The continuum of care ought to continue even in death since it affects subsequent reproductive life of the women involved but in Africa this is far from reality. There are various interventions done to maximize wellbeing of bereaved families but none identified in Africa (Heazell *et al.*, 2016).

1.2 Statement of the Problem

No burden affecting families is as big and yet so invisible both in larger society and on the global public health agenda as stillbirth (Lawn *et al.*, 2016). It is heartbreaking loss for women and families yet their loss is receives illegitimate treatment. Pregnancy is often a joyful experience. When the death of the unborn infant occurs, it shatters the plans and dreams of the woman. The care that bereaved families receive every year around the time of their child's death is extremely important. Around the world, people blame taboos and evil spirits or the woman is held responsible for the loss of a child. Despite the vulnerability of women to mental illnesses after stillbirth, few women receive adequate psychological support (Kersting *et al.*, 2013). As a result women and families continue to grief silently due to stigma and taboos associated with death in the African context. This could be attributed to lack of counseling sessions, the health system factors that do not empower them to act on healthy choices, or socio-cultural conditions in which they live impede healthy choices. According to KDHS, Eastern region reported some of the highest number of stillbirths. Kitui and Machakos counties are no exception with high number of stillbirths reported in 2015 (Kitui at 4.1% and Machakos at 3.1%) and the rough terrain which hinders access to basic health services (KNBS, 2015). The county health plans have not responded to the calls from *Lancet* stillbirth series to act on stigma and offer bereavement support to mitigate psychological morbidity. There are also no efforts to promote improved mental health despite the understanding that stillbirth is a risk factor. Counseling intervention has been found to mitigate psychological morbidity after stillbirth in Higher Income Countries (HICs) though no studies done in Africa. Stillbirth still is not acknowledged as of public health importance even at county level.

1.3 Justification of the Study

Among the unfinished agenda in the Millennium Development Goals is stillbirth. The emotions experienced by Kenyan women following pregnancy loss have not been adequately documented. There are no interventional studies reported in Kenya on care offered to women after stillbirth and coping strategies. The cultural perceptions eminent in the continent including: abuse, taboos and stigma influence psychological morbidity after stillbirth. Though care and support cannot remove the loss, care that is inadequate influences psychological morbidity. Women end up grieving in silence and at risk of developing psychological morbidity like anxiety, postpartum depression and post traumatic stress disorder (Bhat & Byatt, 2016). These interfere with the woman's reproductive life and their impact can affect the next pregnancies and other family members (Ayers *et al.*, 2016).

There is no universal agreeable way of supporting women after stillbirth hence need to determine the common practices in Kitui and Machakos Counties due to the uniqueness of the regions. The study was to be conducted in various health facilities in the counties, but it was found that most maternal complications are referred to the biggest level 5 hospitals. This means that most stillbirths occur in the biggest hospital in the county or on the way to the hospital hence captured in the biggest hospital. The two counties are located adjacent to each other with similar socio-economic, cultural, demographical, physical and climatic conditions. The intervention was conducted in Machakos County with Kitui County as control in order to achieve the desired sample size due to the sensitivity of the study. The study purpose was to determine the use of counseling in

mitigating psychological morbidity after stillbirth among women. The study evaluated coping strategies employed by women after stillbirth. It also determined influence of socio-cultural and health system factors on psychological morbidity after stillbirth after counseling. The results of this study will inform policy makers in the county to strengthen care after stillbirth to women of reproductive age which will mitigate psychological morbidity. This is will decrease the burden of stillbirths on the affected women and the county at large.

1.4 Research Questions

1. What is the care currently offered to mitigate psychological morbidity after stillbirth among women of reproductive age in Kitui and Machakos Counties?
2. What are the psychological morbidity exhibited by women after stillbirth in Kitui and Machakos Counties?
3. What is the effect of counseling on psychological morbidity exhibited by women after stillbirth?
4. What socio-cultural and health system factors influence psychological morbidity exhibited by women who deliver stillbirth after counseling?
5. What are of the coping strategies employed by women to cope with stillbirth?

1.5 Hypotheses (H₀)

1. H₀₀: Counseling does not mitigate psychological morbidity after stillbirth among women of reproductive age.
2. H₀₁: Socio-cultural factors do not influence psychological morbidity exhibited by women who deliver stillbirth after counseling.

3. H₀₂: Health system factors have no effect on psychological morbidity after stillbirth among women after counseling.

1.6 The Study Objectives

1.6.1 Broad Objective

The broad objective of this study was to investigate the use of counseling in mitigating psychological morbidity associated with stillbirth among women in Kitui and Machakos Counties.

1.6.2 Specific Objectives of the Study

1. To establish the care offered to mitigate psychological morbidity after stillbirth among women of reproductive age in Machakos and Kitui Counties.
2. To evaluate the psychological morbidity exhibited by women after stillbirth in Machakos and Kitui Counties.
3. To determine the effect of counseling in mitigating psychological morbidity exhibited by women after stillbirth in Machakos and Kitui Counties.
4. To determine socio-cultural and health system factors influencing psychological morbidity exhibited by women who deliver stillbirth after counseling in Machakos and Kitui Counties.
5. To evaluate the coping strategies employed by women to cope with stillbirth in Machakos and Kitui Counties.

1.7 Significance and Anticipated Output

This study generated information on the use of counseling in mitigating psychological morbidity exhibited by women after stillbirth. This will enable the county and national governments to integrate counseling in the care package after stillbirth. To the women, the care package will mitigate psychological morbidity after stillbirth.

1.8 Limitations

The scope of the study only encompassed the study area. The study laid more emphases on the women who had stillbirth and not the other family members, siblings and health workers who are also adversely affected after stillbirth. The researcher was unable to randomly sample owing to the weak sampling frame and the random assignment of stillbirths to intervention and control group was not possible. The researcher was unable to effectively control the extraneous variables hence the study respondents fell into control and interventional group depending on their county of residence. The study followed participants for two weeks of which there was opt out. This is due to the sensitivity, trauma and taboos associated with the loss hence avoiding the health facility.

Most of maternal complications were being referred to the largest hospital in the county thus most stillbirths occurred in these facilities or on the way. The study was thus done in the county referral hospitals. The intervention was given after delivery not after diagnosis of stillbirth due various entry points to the post natal ward. The study had a high dropout rate especially in the control group (29%). It is possible that the women with unresolved grief did not participate in the study thus their views were not

represented. The study had a shorter intervention period (two weeks) with no long term follow up. The intervention was conducted in the early days of grief when the symptoms were relatively severe.

1.9 Conceptual Framework

The study was on the use of counseling in mitigating psychological morbidity among women after stillbirth in Machakos and Kitui Counties. The study determined influence of socio-cultural factors and health systems factors on psychological morbidity associated with stillbirth among women after counseling.

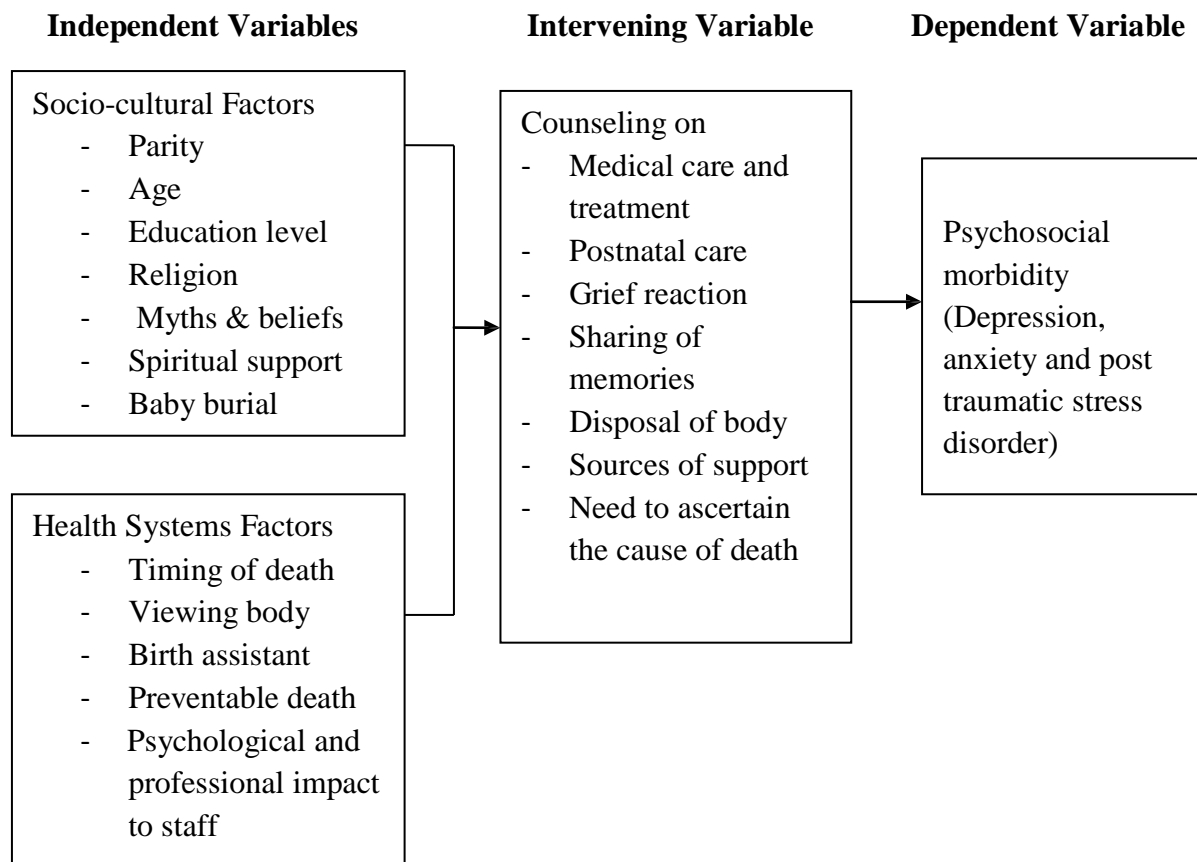


Figure 1.1 Conceptual framework (Adopted from Literature Review)

1.10 Theoretical Framework

Roy's Adaptation Model was the theoretical framework for the study of mitigating women's psychological morbidity after stillbirth. Roy's Model views the person as a human adaptive system (Roy & Andrews, 1999). The human system is a whole whose parts function together for a purpose. A stimulus (stillbirth) comes from the environment and provokes a response from the human system. The stimulus is then processed through cognator or regulator coping processes (normal or pathological response). An adaptive response develops in the human system through cognitive or regulatory processing of the stimulus (coping strategies). The system then manifests behavior as a result of the stimulus. Adaptive behaviors which promote the functioning of the human system and goals achievement are effective adaptation. Ineffective adaptation occurs when the stimulus response does not contribute to human system integrity and its goals (Roy & Andrews, 1999).

The stillborn is the stimulus affecting the human system of the woman. The death will then be processed through cognator and regulator functions and a grief response will be the result. This response may mitigate psychological morbidity (depression, anxiety and post traumatic stress disorder) depending on woman integrity, socio-cultural factors and health system factors. This cycle continues as the client processes the death and accomplishes tasks of everyday life (Roy & Andrews, 1999).

The study was underpinned by the Roy's adaption model which postulated that a person is human adaptation system with a stimulus. In this study stillbirth was the stimulus affecting the woman and a normal or abnormal response would result into psychological morbidity. The intervention of counseling would mitigate the psychological morbidity.

CHAPTER TWO: LITERATURE REVIEW

2.1 Global Estimates of Stillbirths

The global average stillbirth rate between 2000 and 2015 fell from 25 to 18 stillbirths per 1,000 births, translating to a 17 per cent drop. This decline equals two per cent annual rate, which is much slower compared to the progress made for maternal deaths rate (three per cent) and child deaths rate (4.5 per cent). According to the *Ending Preventable Stillbirths Report 2016*, Kenya is position 158 among 186 countries globally that participated in the stillbirth prevalence study. There are 27 sub-Saharan Africa countries in the top 35 (77 per cent) countries with the highest (worst) stillbirth rate. The five countries with the lowest stillbirth rates in the world are Iceland (1.3 per 1,000 births), Denmark (1.7 per 1,000 births), Netherlands and Finland (both with 1.8 stillbirths per 1,000 births) and Croatia with two stillbirths per 1,000 births. Inversely the risk of a child being born dead in Pakistan or Nigeria is almost twice that of Kenya. The two countries (Pakistan and Nigeria) have the worst stillbirth rate, at 43 per 1,000 births. The new *Global Strategy for Children's and Adolescents' Health 2016–30* also focuses on added priorities, stillbirths being one of them (UNGA, 2015).

2.2 Stillbirths in Sub Saharan Africa

About 2.6 million stillbirths occur globally very year, where two-thirds occur in south-east Asia and Africa, with 60 per cent happening among rural families. The stillbirth rate in sub-Saharan Africa is almost 10 times that of developed countries (29 versus 3 per 1,000 births). In East Africa, Kenya is second from last in war on stillbirths. The worst record in the region is Burundi, with 27 stillbirths per 1,000 births while Rwanda, with 17

stillbirths per 1,000 births has the best record, followed by Uganda (21 stillbirths per 1,000 births) and Tanzania with 22 stillbirths per 1,000 births (Frøen *et al.*, 2016). According to the ‘Lancet Ending Preventable stillbirths report 2016’, for a pregnant woman in Africa to have the same chance of having alive baby as a woman in a high-income country today, it will take 160 years.

Perinatal psychological morbidity affects 15-20% of women in the general population (NICE, 2014). Depression and anxiety are more prevalent in low and middle-income countries compared to high income countries following stillbirth (Parsons *et al.*, 2012). In low-income countries where majority of stillbirths occur, there is minimal bereavement care offered to the women. This is because of stigma, blame and shame attached to the women and lack of recognition of the stillborn babies who are often disposed or buried with no marked graves and seen as a bad omen (Frøen *et al.*, 2011).

2.3 Stillbirths in Kenya

In Kenya a stillborn child is twice more likely than in Mauritius and the Seychelles, the two countries with the lowest stillbirth rates in sub-Saharan Africa. Kenya is position 11 among countries with the most stillbirths in the world (Frøen *et al.*, 2016). The stillbirth rate in Kenya was around 26 per 1,000 births according to the ‘Lancet ending preventable stillbirth report 2016’ (Lawn *et al.*, 2016). According to KDHS, stillbirths were almost 35,000 in Kenya in 2014, a 10 per cent increase from almost 32,000 in 2000 (KNBS, 2015).

Even with this quite high prevalence rate, there are no clear evidence based interventions and guidance provided to support maternity health care providers who offer care and support to women and families experiencing stillbirth. Stillbirth has been documented as a risk factor for psychological problems yet few studies have been done on patients' satisfaction with post-stillbirth care (Navidian & Saravani, 2017).

2.4 Attributable Factors and Causes of Stillbirths

There is limited data on causes of stillbirths globally (Heazell *et al.*, 2012). Causes of stillbirth are most often inaccurately recorded or not recorded at all (Aminu *et al.*, 2014). Stillbirth cause determination has historically been challenging, as the fetus is not observed directly during death and due to unclear death pathway (Goldenberg *et al.*, 2016). Most of these causes of death are preventable (Lawn *et al.*, 2011). Healthcare providers' training is needed to improve understanding of the stillbirth causes and associated factors and their ability to conduct perinatal audit (Cockerill *et al.*, 2012). Application of the International Classification of Diseases for perinatal mortality (ICD-PM) by WHO aims to improve data on stillbirth to enhance prevention (Reinebrant *et al.*, 2018).

2.4.1 Factors Attributed to Stillbirth

Various factors are attributed to stillbirth. They are maternal factors, fetal factors and access to care.

2.4.1.1 Maternal Factors

Advanced maternal age is risk factor for stillbirth reported in many developing countries (McClure *et al.*, 2011). A study in India found mothers older than 40 years and teenage

mothers less than 20 years were at a higher risk of stillbirth (Kuti *et al.*, 2017). A study in Uganda found an association between risk of stillbirth and birth intervals of <21 and <35 months. Similarly the odds of stillbirth and neonatal death are higher if the previous pregnancy ended in an adverse outcome (Kujala *et al.*, 2017).

Parity is a common reported risk factor in studies done in developing countries. A study done in a South African hospital identified primi-parity as a risk factor for stillbirth (Ntuli & Malangu, 2012). Primi-parity and grand multi-parity have been associated with stillbirth in other studies in developing countries; Uganda (Nankabirwa *et al.*, 2011). Nigeria (Kuti *et al.*, 2017) and Nepal (Lee *et al.*, 2011).

Obstetric factors are frequently associated with risk of stillbirth. History of previous stillbirth (Lee *et al.*, 2011) and mode of delivery (Olagbuji *et al.*, 2012) have been found to be associated with stillbirth. Other associated stillbirth factors reported by previous studies reviewed include consanguinity and smoking, alcohol intake and drug abuse, gestational age at birth, lack of or inadequate antenatal care, fetal sex, birth weight, multiple gestation, and maternal morbidity (Ntuli & Malangu, 2012).

2.4.1.2 Fetal Factors

In Tanzania, Chuwa *et al* (2017) reported prematurity and postdatism as a major risk factor for stillbirth. The major cause of stillbirth was reported to be asphyxia (46.6%), with infections contributing to 21% and congenital anomalies represented 8.4% of all causes (McClure *et al.*, 2017). A prior study conducted in India found 24% of pregnant

women were in consanguineous partnerships, which is a high risk for birth defects. However there are observed regional differences.

2.4.1.3 Access to Care

There is an association between lack of antenatal care and stillbirth. Kuti *et al* (2017) found that inadequate antenatal care increased stillbirth risk in a Nigerian population. Factors related to care setting and place of birth have also been reported to influence stillbirth. Delay in health care where misdiagnosis and delay in treatment were the most common reasons given for the stillbirth were the health related avoidable factors (Kuti *et al.*, 2017). Thus health care personnel need to be updated on perinatal care. A study in Ghana reported an association between low or poor maternal education and stillbirth (Der *et al.*, 2016). Inadequate access to quality intrapartum care through limited access to skilled attendant and obstetric emergency care is one of the most single attributable factors to causes of stillbirth (Heazell *et al.*, 2012).

2.4.2 Causes of Stillbirth

In 2016, World Health Organization (WHO) adopted the existing International Classification of Diseases (ICD-10) for use in perinatal mortality during the Perinatal Period (WHO, 2016). The new ICD-PM classification system uses a layered approach to categorize perinatal mortality (including stillbirth) in the first instance by time of death (antepartum, intrapartum and neonatal deaths), and can then be used to further assign a fetal cause of death and/or contributing maternal conditions. Under timing of death, antepartum and intra partum complications are the major causes of stillbirth (Afshan *et al.*, 2019).

2.4.2.1 Maternal Conditions Contributing to Death

The percentage attribution ranges from 8 to 50% of stillbirths. Maternal conditions causing stillbirth such as syphilis, hypertensive disorders in pregnancy, alcohol use in pregnancy, obesity, diabetes, and HIV (symptomatic or with low CD4 counts) were found to be the most common causes of stillbirth (Chuwa *et al.*, 2017). In Ghana, malaria, HIV, syphilis, anaemia, toxoplasmosis were reported to increase the risk of stillbirth (Der *et al.*, 2016). A study done in India found out that more than half of the stillbirths were associated with maternal factors like pregnancy-induced hypertension, ante partum hemorrhage and anemia (Avachat *et al.*, 2015). Lawn *et al.* (2016) report non-communicable diseases, nutrition and lifestyle factors, such as obesity (many of which coexist, each contribute to about 10%), and prolonged pregnancy (14.0%) to contribute to stillbirth.

2.4.2.2 Congenital Anomalies

Congenital anomalies are reported to account for 8% of stillbirths (McClure *et al.*, 2017). Similar results were reported from Nepal where 18% of 17 stillbirths were due to congenital anomalies in a study that examined medical records (Ghimire *et al.*, 2017).

2.4.2.3 Placental Conditions

Placental causes particularly placental abruption are recognized in many studies as a major cause of stillbirth. A study in Nigeria identified intra uterine growth retardation (IUGR) and placenta abruption as the two most common leading cause of death among the booked patients while obstructed labour and placenta abruption were the two most common cause of death in unbooked patients (Kuti *et al.*, 2017)

2.4.2.4 Intrapartum Causes

Most of the stillbirths are related to intrapartum complications hence access to skilled birth attendants and emergency obstetric care could avert these crises (Lawn *et al.*, 2016). A prospective cohort study of antenatal attendees in Tanzania found that, of 60 stillbirths, 15 (25%) were due to asphyxia-related causes (Chuwa *et al.*, 2017).

2.4.2.5 Umbilical Causes

Umbilical cord accidents have been strongly associated with stillbirth (Afshan *et al.*, 2019). These include cord prolapse, knots, loops and abnormal insertions into placenta. A study in Mozambique found the overall umbilical causes reported to be responsible for 14.7% of Stillbirths (Geelhoed *et al.*, 2015). In Ghana, umbilical causes accounted for 3.3% all stillbirth in a cross-sectional study (Der *et al.*, 2016). A similar study in Nigeria reported umbilical problems to account for 7% of all stillbirths (Kuti *et al.*, 2017).

2.4.2.6 Amniotic and uterine causes

Amniotic and uterine causes were the least frequently reported causes of stillbirth in studies from developing countries. Umbilical causes account for 4.6% of all stillbirths in a systematic review study of globally reported stillbirths (Reinebrant *et al.*, 2018). Uterine rupture accounted for 26.7% of deaths in a study of 263 stillbirths among 728 women with severe acute maternal morbidity in Nigeria (Kuti *et al.*, 2017).

2.4.2.7 Causes Unknown

Many studies report a large proportion of stillbirths as unclassifiable or as cause unknown. Nearly half of all stillbirths (47%) were reported as cause unknown in studies from Nepal (Ghimire *et al.*, 2017). In Nigeria, Kuti *et al* (2017) reported 38.8% of

266 stillbirths as unexplained, while in Mumbai (India) 18% of 105 stillbirths identified in a prospective study involving 467 births were classified as cause unknown (Avachat *et al.*, 2015). This has led to many stillbirths not addressed in future prevention strategies since it does not give the direction of action.

2.5 Care of Women after Stillbirth

Women do suffer immensely from stillbirth diagnosis to birth (Pullen *et al.*, 2012). Waiting for labour is even more traumatizing than the real birth (Malm *et al.*, 2011; Radestad *et al.*, 2013). Thus, the women need sensitive and compassionate care from health care providers.

The psychological morbidity after stillbirth experience could be mitigated by care from trained health care providers to help women cope with the devastating experience (Yamazaki, 2010). Despite the known vulnerability of women who have experienced stillbirth and the fact that perinatal loss causes mental illness, few of these mothers report receiving adequate psychological support (Kersting *et al.*, 2013). The health care system and the families emphasize more on the live births ignoring the trauma of a stillbirth. Most of the time women encounter neglect and lack of social support from the people around them (Navidian & Saravani, 2017). Despite stillbirth been a risk factor for psychological problems, few studies have been done to assess patients' satisfaction with post-stillbirth care (Kersting *et al.*, 2013).

2.6 Psychological Morbidity following Stillbirth among Women

Women are vulnerable to experience psychological morbidity after child birth and more so after bereavement. The psychological morbidity are usually higher in low and middle-

income countries particularly women in socially and economically disadvantaged circumstances (Fisher *et al.*, 2011). Stillbirth loss contributes greatly to post partum maladjustment and psychological morbidity (Ayers *et al.*, 2016).

Stillbirth is associated with lower quality of life, marital discord, complicated grief, major depressive disorder, anxiety disorders, and post traumatic stress disorder (Bhat & Byatt, 2016). Women who experience stillbirths are four times more likely to develop depression compared to women with a live birth (Gold *et al.*, 2015). Women with stillbirth are twice more likely to have generalized anxiety even after adjusting for socio-demographic factors compared to women with a living child (Gold *et al.*, 2015). Women generally experience increased rates of post traumatic stress disorder after stillbirth (Daugirdaite *et al.*, 2015). Women are 7 times more likely to report post traumatic stress disorder 9 months after stillbirth compared to women with live births (Bhat & Byatt, 2016).

Following childbirth, women may experience mental and physical problems such as sleep and appetite changes, feelings of guilt, stress, shame, depression, and this is more likely in cases of stillbirth (Huberty *et al.*, 2014). Post traumatic stress disorder is a common complication among women after stillbirth (James S, 2015). Most women (44%) exhibit symptoms of PTSD after experiencing stillbirth (Huberty *et al.*, 2014).

2.7 Effect of Counseling on Psychological Morbidity after Stillbirth

Despite the known psychological vulnerability of women following stillbirth and the risk of mental illness, these women receive inadequate psychological support to deal with their emotional reactions and grief (Kersting *et al.*, 2013). Regarding interventions, a

study focused on physical activity effect on depression and anxiety (Huberty *et al.*, 2014) while another study focused psychological counseling of grief (Navidian & Saravani, 2017). There is less focus on psychological health of mothers after stillbirth. Following stillbirth, most women may unreasonably blame themselves as they look for answers and explanation about their baby's death. A study by Navidian & Saravan (2017) found face to face interventions to be more effective than non face to face interventions in improving psychological wellbeing of women after stillbirth.

Comprehensive care package for women and fathers after stillbirth include: medical care and treatment, postnatal care, how to react to grief, memory creation, disposal of body, need to ascertain cause of death, counseling and psychological support (Burden *et al.*, 2016). Functioning health systems, compassionate care, and trusting relationships between women and their care providers strengthens this approach (Byrom & Dawne, 2015). Interventions for respectful and supportive care provided could be the core elements of the bereavement care package. There is need to study and agree on these interventions with stakeholders.

The stillbirth rate is a key indicator of quality of care during antenatal and childbirth. As much as most stillbirths are not given death certificates, they matter to women and their families (Heazell *et al.*, 2016; Flenady *et al.*, 2016). Bereaved families need support when death happens because evidence shows that women of stillborn babies are at greater risk of psychological morbidity compared to those who have live born babies (Heazell *et al.*, 2016).

Heazell *et al* (2016) consider the economic and social costs of stillbirths including stigma associated with stillbirth. Flenady *et al* (2016) show challenges to stillbirth prevention in high-income countries including socioeconomic disparities, the need to improve data quality and provision of bereavement care. This bereavement, however, has often been misunderstood, stigmatized and failed to receive adequate recognition (Frøen *et al.*, 2011; Cacciatore, 2013). The impact of stillbirths has been hugely under estimated. Psychological morbidity is endured for years.

Stillbirth is a devastating and traumatic event for both women and their partners. The grief and distress experienced is documented across qualitative and quantitative studies (Kelley & Trinidad, 2012; Mills *et al.*, 2014). Standard practices in caring for parents during and after stillbirths have varied over time where parents were not allowed to hold their babies where the baby was withdrawn following birth. The approach to care was criticized leading to policy change in order for parents to make contact and create memories with their stillborn babies (Cunningham, 2012). In qualitative studies, parents expressed the opportunity to see and hold their babies as invaluable though sparse quantitative data is available especially in Africa on the impact of contact with the stillborn (Downe *et al.*, 2013; Mills *et al.*, 2014). There has been confusion about the best evidence based care for parents. In the recommendations provided, clinical guidelines have differed with NICE guidelines receiving criticism for including recommendations not to encourage parents to see or hold their stillborn (Cunningham2012; Koopmans *et al.*, 2013). There is little documentation in Africa in both quantitative and qualitative studies on care of women after stillbirth.

Maternity services in many countries have accepted provision of an empathetic, sensitive, caring environment and strategies to support women, fathers and their families who have had stillbirth. Psychological support or counseling interventions or both after stillbirth is recommended to improve outcomes for parents and families. Grief recovery of the psychological effects of stillbirth is reported 5 to 18 years later (Gravensteen *et al.*, 2012).

2.8 Factors Influencing Psychological Morbidity after Stillbirth

Various factors influence psychological morbidity after stillbirth. These include: socio-cultural, economic and health system factors.

2.8.1 Socio-Cultural Factors Influence on Psychological Morbidity after Stillbirth

Women report complex changes in their body image following stillbirth. The grief that results after stillbirth loss is complex and prolonged (Burden *et al.*, 2016) partly because of un-acceptance or legitimization of the grieving process by society. Majority of the women normally conceive within a year after the loss which might lead to the negative consequences being continued to next pregnancies in spite of a positive pregnancy outcome (Blackmore *et al.*, 2011). However, the exact advance impact on families, society and healthcare services remains unknown and is most likely under-estimated.

Most prospective parents are not ready for the stillbirth outcome (Pullen *et al.*, 2012; Downe *et al.*, 2013). It is a shocking and highly emotional experience that can lead to psychological morbidity. Social disadvantage doubles the risk of stillbirth and care offered to women reflecting structural inequalities in income level, education and living conditions (Flenady *et al.*, 2016).

The estimated direct financial cost of stillbirth is 10-70% greater than the cost of a live birth which includes funeral burial or cremation costs (Heazell *et al.*, 2016). Most of these healthcare provision costs associated with stillbirth are an out-of-pocket cost for families. Income maybe lost due to time off work, reduced productivity, or reduced working hours. Where basic needs for food and shelter in a family cannot be met, the time and resources for grieving are likely to be unavailable. The close linkages between poverty, education of women and empowerment makes women more vulnerable after losing a baby. Stigma and taboos associated with stillbirth contribute to social isolation and feelings of shame. In low and middle-income settings, baby's body disposal occurs without any recognition or rituals (Heazell *et al.*, 2016).

Stillbirth is hidden from society. Disenfranchised grief is common. Many parents do not grief in public. Women of stillborn babies feel less valued, stigmatized by society and in most cases abused and violated. Recognizing the cultural perspective of loss and grief is well supported in the loss and grief literature (Butler & Neimeyer, 2012). However, cultural context of stillbirth has not been explored. Due to both cultural beliefs and societal pressures, parents in LMICs are often reluctant to discuss or view the stillborn infant thus preventing them from accessing helpful rituals (seeing, baptizing, and naming the stillborn baby) as a means of acknowledging his or her existence. Moreover, due to this fear of stigmatization, stillbirth in LMICs is likely to be underreported (Haws *et al.*, 2010). Many parents report that mourning the death of a stillborn is a taboo and not accepted culturally (Burden *et al.*, 2016). Society views stillbirth as a natural selection of those babies never meant to survive. Women who have stillbirth suffer the most because

of the stigma attached to it and perceived failure as a woman in fulfilling the basic procreation role.

Grief and depression are normal and common experiences after stillbirth. However, they persist for many years or they prevent normal functioning. There is no precise translation for the term stillbirth in African languages (Haws *et al.*, 2010), which makes it problematic when communicating between nurse and patient. This automatically leads to complications in providing culturally competent care. In countries where it exists, the term is stigmatizing in itself.

2.8.2 Health System Factors

Health-care providers play a critical use in the healing process of bereaved parents with their support, understanding and warmth during this time of stillbirth. Health care providers are unaware of how deep the psychological morbidity manifests. Parents desire supportive and sensitive care from healthcare providers on what to expect at every stage of the stillbirth experience. Communication especially of the diagnosis of stillbirth, can impact upon parents' care experience and their psychological well-being. Parents are sensitive to health care provider's communication styles and behaviour. Midwives are uniquely positioned to provide psychological support since they are with women 24 hours and they understand the importance of psychological support. They must take it as a challenge to care holistically for women who experience psychological morbidity, especially after stillbirth loss (Simpson *et al.*, 2015).

There is need for consistent information on the nature and cause of stillbirth for planning health systems and resource distribution, as well as for improving the quality of care at the service delivery point (WHO, 2016). National and regional estimates of numbers and causes of death are useful, but they do not tell the whole story (blencowe *et al.*, 2016). Examination of individual cases identifies the underlying reasons for the deaths and provides opportunities lessons learnt on what needs to be done to prevent similar deaths in the future. Majority of stillbirths, especially in the intrapartum period, and three quarters of neonatal deaths are actually preventable (Bhutta *et al.*, 2014).

Best practice guidelines recommend that all parents irrespective of background be offered a choice on whether they want to view and hold their stillborn baby (Warland & Davis, 2011). However, the evidence around the benefit of holding and seeing remains somewhat controversial, providing no directions to staff and parents. Health care professionals may think it inadvisable to insist that the woman hold her baby, however other studies have shown that even when mortified at the offer, with hindsight women appreciated that the health care professionals did insist (Kelley & Trinidad, 2012). Support and care seem to significantly impact on parents' experiences of stillbirth (Downe *et al.*, 2013). Parents need support and understanding from health care professionals about their experience of bereavement and grief. This highlights an important point on care for parents and families who have experienced stillbirth.

2.9 Coping Strategies Employed by Women after Stillbirth

Women employ various coping strategies to deal with stillbirth loss. Van and Meleis (2010) report various positive coping strategies among African Americans including

adaptive distraction (“putting it aside”), giving the meaning to loss (“there was a purpose”), active self-reliance (“heal thyself”), and finding benefits from the loss (“he’s in a good place”). Several other qualitative studies report African American women often find a spiritual solace in church affiliation and personal prayer as well as informal social support from family and friends to help cope with stillbirth loss (Gold *et al.*, 2016). Similarly, the unusual finding that bereaved pregnant women were significantly less likely to screen positive for depression and PTSD might be explained by the dual process model of bereavement which recognizes that an essential aspect of loss recovery is actively restoring prior functioning, such as planning a subsequent pregnancy, and not solely resolving grief (Stroebe & Schut, 2010). Support networks, a major ingredient of resilience, were found to be significantly associated with less depression and PTSD (Gold *et al.*, 2016).

In a past qualitative study, coping strategies included avoiding thoughts about the loss event, expressing emotion, transforming the meaning of death, seeking acceptance of the mother's grief, self-healing, living with the dead child as if it were a living family member, and believing that the child was in a good or a better place after death (Yamazaki, 2010). A study by Gourounti *et al* (2013) reported various coping strategies employed by women after loss: denial, behavioural disengagement, self-blame, self-distraction, substance abuse, acceptance, positive reforming, active coping and seeking emotional support.

2.10 Public Health Implications of Stillbirths

Every stillbirth is a tragedy and potential life lost (Aminu *et al.*, 2014). Stillbirths are mostly not recorded and viewed as of public health importance. Yet, stillbirth is a traumatizing and heartbreaking loss for most women and families including communities and health care providers (Frøen *et al.*, 2011). If all stillbirth causes are grouped together, the new estimates would have stillbirths fifth on the top causes of deaths worldwide, according to *The Lancet's* Stillbirths Series of 2016, authored by 69 experts from more than 50 organizations in 18 countries. Most of these stillbirths occur in low and middle-income countries. Besides lack of visibility, stillbirths lack accountability, coordination and leadership both in the local and international arena (Flenady *et al.*, 2016).

Almost half of stillbirths occur during labour. This has great implications on care offered to women and children during this critical period. Two thirds of these stillbirths happen in rural areas where access to quality and trained midwives and physicians including facilities for emergency and comprehensive care are minimal. Evidence based interventions to save stillbirths would lead to triple return of investments in most countries (Flenady *et al.*, 2016).

Stillbirth is gaining popularity as a public health problem (Frøen *et al.*, 2016) though there is low public awareness. If all women could deliver in health facilities equipped to offer high-quality, comprehensive emergency obstetric care, almost 700,000 stillbirths, 170,000 maternal deaths and nearly 600,000 neonatal deaths could be averted (Frøen *et al.*, 2016). Stillbirth rate is a marker of high-quality antenatal and intrapartum care (Frøen

et al., 2016) as well as a sensitive marker of a health systems' strength (IERG, 2015). Approaches used to investigate stillbirth causes are often inadequate to inform effective strategies for stillbirth prevention.

Stillbirth is a devastating event that causes intense and long term trauma and is comparable to the death of a child (Navidian & Saravani, 2017). A deep sense of attachment often develops between a woman and unborn child during pregnancy; thus, she is likely to experience profound psychological distress, including high risk of post traumatic stress disorder (PTSD) upon the baby's death (Gold *et al.*, 2014). These deleterious effects, which include; suicidal ideation, increased maternal mortality, somatization, family disorganization, social isolation, economic deprivation, mental illness, depression, anxiety and pining make stillbirth a major public health problem facing pregnant women and their families (Burden *et al.*, 2016). Stillbirth is a marginalizing experience for many women (Kersting *et al.*, 2013).

Women's grief following stillbirth is further complicated by the biological fact of death occurring within the body, cultural discomfort with death, particularly a child's death, feelings of anxiety, failure and guilt (Cacciatore, 2010). Considering the psychological impact and emotional reactions after stillbirth, psychological support services of these women are needed during this period (Navidian & Saravani, 2017). Maternal psychological morbidity after stillbirth is of public health concern due to the longer-term negative impact on subsequent pregnancies and child development (Burden *et al.*, 2016) to include impaired future woman-infant relationship. Avoidance symptoms during this time of loss may also impair a woman's ability to talk about and process the trauma,

leading to social isolation and psychological morbidity. It could also influence use of health care services hence unmanaged mental health problems in the community which is a hindrance to economic and social development.

2.11 Gaps Identified in Literature Review

There is need to improve standardization across countries and nations on the definition of stillbirth, identification of factors associated, causes of stillbirth and attribution of the causes. Precise determination of causes and contributing factors is required to reduce stillbirth rates. There is need for a unifying global system broad enough to be applied across different settings. The WHO classification of ICD-10 to deaths during perinatal period needs to be adopted by all countries for international comparison though causes differ between regions.

Raise public awareness on stillbirth and discuss psychological morbidity due to underlying stigmatization of stillbirth. Offer culturally competent and timely care. Parents and families of a stillborn should have access to and receive proper support from caregivers and their direct social network. Yet, scanty information is available on the use of counseling in mitigating psychosocial morbidity exhibited by women who deliver stillbirth in low and middle-income countries like Kenya. This study hoped to fill this gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Study Design

This was a facility based quasi experimental study (non randomized controlled study) with counseling as an intervention and routine care to the control group. It was not possible to assign the study participants into any arm of study hence they were categorized into control and interventional group based on the county of residence. This study had a small sampling frame.

3.2 Study Variables

3.2.1 Independent Variables

The independent variables were socio-cultural factors and health systems factors. Socio-cultural factors included age, marital status, level of education, body disposal, myths and rituals. Health system factors incorporated the health facility (timing of death, viewing body, birth assistant) and health care provider's knowledge and support. The counties are neighbouring each other with similar social-cultural populations, language and climatic conditions.

3.2.2 Intervening Variable

The intervening variable was counseling after stillbirth loss. The counseling encompassed seven components: medical care and treatment, postnatal care, how to react to grief, memory creation, disposal of body, sources of support and ascertaining cause of death.

3.2.3 Dependent Variable

The Dependent variable was selected psychological morbidity after stillbirth; anxiety, depression and post traumatic stress disorder.

3.3 Location of the Study

The study was carried out in level 5 hospitals of Kitui and Machakos Counties in Kenya. Kitui County is located about 160km east of Nairobi. It is one of largest counties in the country covering an area of 30,496.5 square kilometres including 6,369 km² occupied by Tsavo East National park. It covers latitudes of 1° 22'30.2916" South and longitude of 37°59'42.7668" East. It shares its borders with seven counties; Tharaka and meru to the north, Embu to the northwest, Machakos and Makueni to the west, Tana River to the east and southeast, and Taita Taveta to the south. It has 8 constituencies namely: Kitui Central, Mutito, Kitui Rural, Kitui West, Kitui South, Mwingi North, Mwingi West and Mwingi Central which refer their patients to the Kitui level 4 Hospital. The Kitui level 4 Hospital is located in Kitui town.

Machakos County stretches from latitudes 0° 45' south to 1° 31' South and longitudes 36° 45' East to 37° 45' East. It covers an area of 6,208 Square KM. Its capital town Machakos is cosmopolitan and is located 64 kilometers south east of Nairobi. The prevailing climate is semi-arid and the landscape is hilly, rising from an altitude of 1000 – 1600 meters above sea level. It has eight constituencies namely: Machakos Town, Mavoko, Masinga, Yatta, Kangundo, Kathiani, Matungulu, and Mwala. It covers an area of 6,208 km². The

county experiences erratic and unpredictable rains of less than 500mm annually, with short rains in October through to December and the long rains in late March to May.

3.4 Study Population

The study population comprised women of reproductive age residing in Kitui and Machakos Counties who had stillbirth and had delivered in Kitui level 4 or Machakos level 5 Hospital. Pregnant women form 4.8% of total population. Stillbirth prevalence is 4.1% and 3.1% in Kitui and Machakos Counties respectively.

3.5. Recruitment Criteria

3.5.1 Inclusion Criteria

The participants in this study had to be of reproductive age (15 and 49 years). The respondents had to be residing in the study area since conception and had delivered stillbirth within 24 hours within Kitui level 4 and Machakos level 5 hospitals. They had to be willing to participate in the study and be followed up for two weeks.

3.5.2 Exclusion Criteria

Women who were critically ill or with pre-existing psychological morbidity were exempted from the study. Women who did not consent were not allowed to participate in the study. Women whose stillborn baby had a live born twin were also excluded since they could be having mixed reactions. Women who failed to participate in the 3 individual counseling and group counseling sessions were excluded from the study.

3.6 Sampling Techniques

The two counties were purposely selected due to the high stillbirth prevalence. Kitui County (Kitui level 4 Hospital) was randomly selected to form the control group and Machakos County (Machakos level 5 Hospital) the intervention group. These are the biggest and referral hospital in the respective counties where most of the maternal complications are referred hence most of the stillbirths either occur on the way or in those hospitals. This was arrived at after lacking study participants in the other health facilities within the counties despite having research assistants stationed in those health facilities. They offer comprehensive emergency obstetric and neonatal care services.

The study respondents were identified purposively in the Kitui level 4 Hospital and Machakos level 5 Hospital wards by the investigator and research assistants with help of the post natal ward in charge until the desired sample size was achieved. Eight key informants were identified through purposive sampling. These comprised of labour ward, post natal ward and theatre in-charges and medical officers working in the obstetric department (one from each hospital). Two focused group discussions were conducted in the study areas (one in each hospital). They consisted of women of reproductive age who had delivered stillbirth during the period of the study which was from November 2017 to June 2018 (8 months). Two focused group discussions were also conducted for health care providers in the study areas. They comprised of midwives, clinical officers and medical officers in the obstetric departments.

3.7 Sample Size Determination

The sample size was calculated using the formula developed by Chan (2003) for comparison of 2 proportions (two-sided) at 5% level of significance and 90% power. Prevalence of psychological morbidity among women after delivering stillbirth is at 67% in earlier studies (Burden *et al.*, 2016). In this study the expected decrease with counseling of psychological morbidity was to 40%. Therefore the intervention had an effect size of 27%. The formula for the sample size was as shown;

$$N = C \times (\pi_1 (1 - \pi_1) + \pi_2 (1 - \pi_2)) / (\pi_1 - \pi_2)^2$$

Where: N=sample size required in each group, C=10.5 for 90% power and 5% significance, π_1 =first proportion= 0.67, π_2 =second proportion=0.40, $\pi_1 - \pi_2$ =size difference of clinical importance for this study= 0.27

Therefore

$$n = 10.5 \times \{0.67(1-0.67) + 0.40(1-0.40)\} / (0.67 - 0.40)^2 = 68 \text{ per group}$$

Assuming 10% dropout rate, the minimum sample was 150. Proportionate probability sampling was used to determine the number of participants in each arm.

3.8 Research Instruments

Semi structured questionnaires were used together with pre-existing tools for assessing anxiety, depression and post traumatic stress disorder as shown in appendix 2 (Edinburgh Postnatal depression scale 1, Hopkins symptoms checklist 25 and Impact of life scale-revised).

Edinburgh Postnatal Depression Scale 1 (EPDS 1): The Edinburgh Postnatal Depression Scale (EPDS) is a 10-item self-report scale designed specifically as a

screening instrument for the postnatal period for clinical and research purposes. It makes little reference to the somatic symptoms of depression that are caused by the normal physiological changes associated with childbearing. The EPDS does not need the health worker to have special knowledge of psychiatry. It was initially validated on British women by Cox *et al* (1987). Most studies show the EPDS is a valid and reliable screening scale. The initial validation of the EPDS against the Research Diagnostic Criteria of Cox *et al* (1987) suggested a threshold score of 12/13 out of 30 to identify women with major depression (sensitivity of 86%, specificity of 78% and positive predictive value of 73%). This is supported by Boyce *et al* (1993) and Webster *et al* (1994). It was validated for an African community in South Africa (Lwarie *et al.*, 1998). The EPDS was validated against the *Diagnostic and Statistical Manual (DSM-IV)* criteria for depression. The answers are scored 0, 1, 2, or 3 according to symptom severity experienced in the previous 7 days. A threshold of 11/12 on the EPDS identified 100% of women with major depression and 70.6% of women with minor depression. For major and minor depression combined, sensitivity (the proportion of women with depression correctly identified) was 80%, specificity (the proportion of well women correctly identified) 76.6%, positive predictive value-PPV (the probability that a score above the threshold value will identify a depressed woman) 52.6% and negative predictive value-NPV (the probability that a low score will identify a well woman) 92.2%. In this study, a threshold of 12/13 was used as the cut-off value for depression.

Hopkins Symptoms Checklist (HSCL-25): The HSCL-25 (Derogatis *et al.*, 1974) is a 25-item self-report instrument that has both anxiety and depression subscales. Respondents were asked to identify the degree to which they had experienced each symptom on a 4-

point scale ranging from –not at all (1) to –extremely (4). In order to classify clinical cases, the researcher used a cut-off of > 1.75 (average score) for the first 10 items for identifying anxiety. This has performed well in identifying anxiety for research with women that found 0.81 Sensitivity, 0.70 Specificity and for panic and generalized anxiety disorder, 0.67 Sensitivity and 0.73 Specificity (Sandanger *et al.*, 1998).

The Impact of Event Scale-Revised (IES-R): The IES-R is a self-report measure which asks respondents to rate 22 difficulties (such as –I felt irritable and angry) to gauge how distressing each particular area has been over the past twenty-four hours. Answers are recorded on a 5-point scale ranging from –not at all (0) to –extremely (4), and the IES-R is scored by averaging item responses. There is no agreed upon clinical cut-off for the IES-R (Weiss, 2004) although various cut off scores have been proposed and tested, and the IES-R is sometimes used to identify clinical cases (Samuelson *et al.*, 2007). We chose to use an IES-R total score cut-off of 33 (average score of 1.5). Using the 1.5 cut-off, Creamer *et al* (2003) found that the IES-R had 0.91 sensitivity, 0.82 specificity, 0.9 positive predictive power and 0.84 negative predictive power. The questions in the scoring card were adjusted to reflect post traumatic stress after experiencing stillbirth.

Key informant guides and focused group discussion guides were developed from literature review and used to collect qualitative data (appendix 3 and 4). Key informants composed of midwives, medical officers, clinical officers and ward in charges in the counties. Four focused group discussions were conducted, two in each county consisting of women of reproductive age who had stillbirth and health care providers working in the obstetric department.

3.9 Pre-test

The questionnaires and key informant guides were pre-tested in Makueni level 4 Hospital which is a neighboring county with similar characteristics. This was to observe respondents reactions, time taken by the respondents to complete the tool and availability of respondents after discharge in order to inform planning for the actual data collection. The data collection tools were administered to 10 participants which was 10% of the expected sample and 3 key informants. The tool was adjusted as necessary. The period for exit survey was moved from six weeks to two weeks since women were reluctant to come at two weeks and again at six weeks for post natal check-up. They reported associating the six weeks post natal check-up with the child health clinic.

3.10 Validity

Validity is the accuracy and meaningfulness of influences based on the data obtained from use of a tool. This was achieved by pretesting tools and training research assistants to standardize data collection procedure. The tools were approved universally by other scholars and the questionnaire was shared with the supervisors for their inputs.

3.11 Reliability

Reliability is a measure of the degree to which a research instrument would yield the same results after repeated trials (Kothari, 2010). Research assistants were recruited from the study area, of above secondary education, participated in data collection before, accustomed to the climate and understood the local language, terrain and culture. They were trained prior to data collection. The questionnaires were checked for completeness

at the end of the day and incomplete questionnaires were completed as guided to reduce errors. Data collection tools were structured in a simple and clear language to avoid ambiguities. The counselors were trained on post trauma counseling by NASCOP.

3.12 Data Collection Techniques

Data was collected using hard copies of interviewer administered questionnaires. In occasions where the respondent was not conversant with the English language, the research assistants would use the translated questionnaires in Kamba language. The study had 114 participants with 60 in the intervention group (Machakos County) and 54 in the control group (Kitui County). Face to face interviews were conducted to seek views from the key informants. Four focused group discussions were held in each county consisting of eight women who had delivered stillbirth and six health care providers.

3.13 Study Interventions

3.13.1 The Intervention Group

A baseline survey was done within 12-24 hours post-delivery. Counseling was offered to the intervention group. It comprised of 7 components: Medical care and treatment, post natal care, grief reaction, creation of memories, disposal of body, sources of support and need to ascertain the cause of death) individually and in groups. Three sessions of counseling were offered to the women following stillbirth. Two sessions consisting of individual counseling lasting 40-60 minutes were offered though there were variations on individual clients depending on need and problems. The first session was at bedside after baseline survey within 12-24 of delivering stillbirth then the second was on time of discharge from the hospital. The third session was group counseling at two weeks as the

women came for post natal checkups either in the mother child health clinic (MCH) or in the obstetric and gynaecologic clinic as advised on discharge depending on the condition.

3.13.2 The Control Group

Women in the control group were offered routine care, considered as normal postnatal care offered by the midwives in the postnatal wards till discharge. They were done baseline survey within 12-24 hours after delivering stillbirth then at two weeks to assess the care they received and the psychological morbidity exhibited.

3.13.3 Follow Up

The study participants in the study groups were followed up to two weeks after discharge. Exit interviews were conducted to both the control and interventional group during the postnatal checkups at two weeks. To account for those lost to follow-up, they were been called through their mobile phones or traced through the community leaders if out of network coverage to determine the reason for withdrawal.

3.14 Data Analysis

A database was designed in the STATA version 12 where the completed questionnaires were keyed in. Descriptive statistics generated measures of central tendency and proportions. In this study, the effect size of the intervention was determined. Mean and standard deviation of psychological morbidity, such as depression, anxiety and post traumatic stress disorder were used to compare the interventional and control groups.

Two statistical tests were used to measure the psychological morbidity. Paired *t*-test was used to compare the average improvement levels of psychological morbidity within

the interventional and control groups. The student t -test was used to compare the average improvement level of psychological morbidity such as depression, anxiety and post traumatic stress disorder between the interventional and control group. P value < 0.05 was considered statistically significant for both tests. Fishers exact and Chi square were used for comparative analysis of the study groups and to determine whether there was any association between various factors and psychological morbidity after counseling in the interventional group. A p-value of <0.05 was considered statistically significant. Statistically significant variables were further subjected to multivariate logistic regression to test the strength of the association and control for confounding factors using p values and odds ratios. Data from the interviews and focused group discussions was analyzed thematically and the summary written for the necessary explanation of the quantitative data.

3.15 Logistical and Ethical Considerations

Permission to carry out the study was sought from Kenyatta University Graduate School (appendix 6 and 7). Ethical approval was sought from Kenyatta University Biomedical Ethics and Research Committee (appendix 8). Further Permission was sought from the National Commission for Science and Technology (appendix 9), the Kitui and Machakos County commissioners (appendix 10 and 11), county ministries of education (appendix 12 and 13), county ministries of health (appendix 14 and 15) and the hospital management where the research was conducted. The study participants were explained on the study and informed voluntary consent to participate in the research sought and withdrawal at any stage of the study granted after clear explanation (appendix 1).

CHAPTER FOUR: RESULTS

4.1 Study Profile

4.1.1 Summary of the Study Profile

Figure 4.1 shows the consolidated study profile. The study period was between 24th November 2017 and 30th June 2018. Women who had delivered stillbirth were 98 and 108 in Machakos level 5 and Kitui level 4 Hospitals respectively. They were assessed for recruitment in the study out of which 38 and 44 women were excluded in Machakos County and Kitui County respectively. Among the 38 women who were excluded from the study in Machakos County: two had a live twin, four resided outside the county and had been referred from Makueni and Kajiado Counties, one developed severe complications and was admitted in ICU for more than one week, sixteen declined to participate in the study citing no need for the memories, thirteen left the county, two absconded from the ward and could not be traced.

Among the forty four who were excluded from the study in Kitui County: two had live twin, three developed complications after delivery and were referred to Kenyatta National Hospital, nine had no contacts hence were lost to follow-up, two had voluntarily terminated the pregnancies, eight left the county to stay with their husbands, four resided outside the county and had been referred from Makueni County and sixteen declined to participate in the study citing no need for the memories and disappointment with the health system. The response rate was 81.4% based on the eligible participants and actual participants.

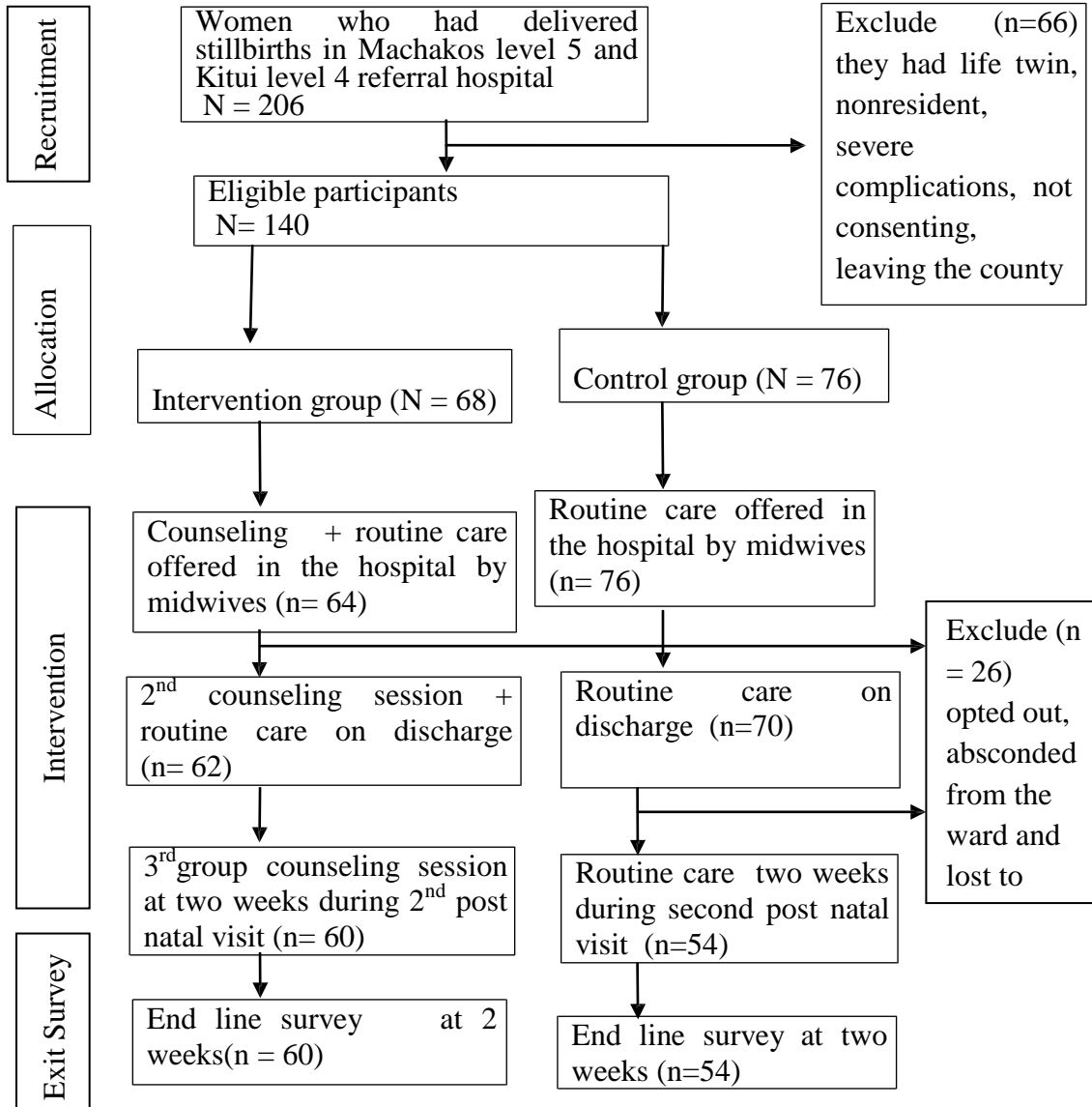


Figure 4.1 Consolidated Study Profile for the Study Participants

4.1.2 Comparative Analysis of Socio-Demographics of the Study Groups

Table 4.1 compares socio-demographic characteristics of the two study groups. There was no significant difference between study groups. The mean age of the respondents was 26.4 ± 6 with the youngest being 18 and the oldest 41 years old. Majority of the study participants (80%) had at least basic primary education while 73.3% were married with a

partner during the time of the study. The socio-demographic characteristics of the two groups show no statistical difference (p value > 0.05)

Table 4.1 Comparative analysis of the socio-demographic characteristics of the study participants

Variable	Control group N=54	Interventional group N = 60	Chi square/ Fisher's Exact
Age	Frequency (%)	Frequency (%)	Exact = 0.677
<20 yrs	6 (8.8)	4 (6.8)	
20-24 yrs	19 (33.3)	20 (33.3)	
25-29 yrs	15 (31.6)	20 (33.3)	
30-34 yrs	4 (11.4)	8 (13.3)	
>35 yrs	10 (14.9)	8 (13.3)	
Education level			χ^2 (2) = 2.424, p = 0.298
Primary	29 (53.7)	24 (20.0)	
Secondary	15 (27.8)	24 (20.0)	
Tertiary	10 (18.5)	12 (20.0)	
Religion			χ^2 (1) = 0.023, p = 0.879
Catholic	16 (29.6)	17 (28.3)	
Protestant	38 (70.4)	43 (71.7)	
Marital Status			χ^2 (1) = 0.124, p = 0.725
Married	38 (70.4)	44 (73.3)	
Single	16 (29.6)	16 (26.7)	
Years of marriage			χ^2 (4) = 2.524, p = 0.640
< 2 yrs	10 (18.5)	8 (13.3)	
2-5 yrs	9 (16.7)	16 (26.7)	
6-10 yrs	9 (16.7)	12 (20.0)	
>10 yrs	10 (18.5)	8 (13.3)	
Not married	14 (29.6)	16 (26.7)	

4.1.3 Socio-Economic Characteristics of the Study Participants

Table 4.2 shows the socio-economic characteristics of the study participants. More than half of the participants (57.9%) were housewives with the partner either formally employed (24.6%) or casual laborer (26.3%). The main source of income for the entire household was formal employment at 40.4%. Majority of the participants (62.3%) had less than 4 hectares of land of which it was acquired mainly through inheritance. There

was no statistical significant difference between occupation and main source of income in the two groups (p value > 0.05). Partner occupation and land size in hectares was statistically significant between the two groups (partner occupation = 0.013; land size in hectares <0.01).

Table 4.2 Socio-economic characteristics of the study participants

Socio-economic variable	Control group N= 54 Frequency (%)	Interventional group N= 60 Frequency (%)	Chi square/ Fisher's Exact
Occupation			
Employed	7 (13.0)	13 (21.7)	$\chi^2 (3) = 3.784,$ $p = 0.286$
Housewife	30 (55.5)	36 (60.0)	
Student	7 (13.0)	6 (10.0)	
Business	10 (18.5)	5 (8.3)	
Partner Occupation			Exact = 0.013
Employed	9 (16.7)	19 (31.7)	
Farmer	3 (5.6)	11 (18.3)	
Casual laborer	18 (33.3)	12 (20.0)	
Business	8 (14.8)	2 (3.3)	
No partner	16 (29.6)	16 (26.7)	
Main income source			$\chi^2 (3) = 1.429,$ $p = 0.699$
Employment	20 (37.0)	26 (43.3)	
Business	10 (18.5)	7 (11.7)	
Casual jobs	15 (27.8)	15 (25.0)	
Farming	9 (16.7)	12 (20.0)	
Land size in hectares			Exact <0.01
<1	2 (3.7)	8 (15.3)	
1	4 (7.4)	11 (18.3)	
1-4	31 (57.4)	40 (66.7)	
>4	17 (31.4)	1 (1.7)	

4.1.4 Obstetric Characteristics of the Study Participants

Table 4.3 shows the obstetric characteristics of the study participants. More than half of the participants had conceived two to four times (57.0%) in their reproductive period. The most recent pregnancy spacing was between two to five years (38.6%).

Majority of the participants did not have any living child (42.1%). Spontaneous vaginal delivery was the preferred mode of delivery (52.6%). Majority of the babies died during labour in the hospital (51.7%). Most of obstetric characteristics were statistically insignificant between the two groups (p values>0.05) except for gestation at birth (p value<0.01) and timing of fetal death (p value=0.035).

Table 4.3 Obstetric characteristics of the study participants

Obstetric variable	Control group N= 54 Frequency (%)	Interventional group N= 60 Frequency (%)	Chi square/Fisher's Exact
No of pregnancies			$\chi^2 (2) = 1.245,$ p = 0.5378
1	17 (31.4)	19 (31.7)	
2-4	29 (53.7)	36 (60.0)	
>4	8 (14.8)	5 (8.3)	
Previous pregnancy spacing			Exact = 0.227
First time pregnant	17 (31.4)	19 (31.7)	
<2 years	2 (3.7)	7 (11.7)	
2-5 years	25 (46.3)	19 (31.7)	
>5 years	10 (18.5)	15 (25.0)	
Number of living children			$\chi^2 (2) = 0.097,$ p = 0.953
none	22 (40.7)	26 (43.3)	
1-2	24 (44.4)	25(41.7)	
>2	8 (14.8)	9 (15.0)	
Gestation at birth			$\chi^2 (2) = 14.968,$ p < 0.01
Preterm (< 37 weeks)	41 (75.9)	24 (40)	
Term (> 37 weeks)	13 (24.1)	36 (60)	
Birth weight in Kilograms			$\chi^2 (2) = 6.3083,$ p = 0.098
2.5-4.5 (normal)	25 (46.3)	40 (66.7)	
1.5-2.4 (low birth weight)	22 (40.7)	14 (13.3)	
1-1.4 (very low birth weight)	7 (13.0)	6 (10.0)	
Mode of delivery			$\chi^2 (1) = 0.047,$ p = 0.828
Spontaneous vaginal delivery	39 (72.2)	41 (68.3)	
Emergency caesarean section	15 (27.8)	19 (31.7)	
Timing of babies death			$\chi^2 (2) = 0.678,$ p = 0.035
Before labour at home	25 (46.3)	14 (23.3)	
During labour at home	9 (16.7)	15 (25.0)	
During labour in the hospital	20 (37.0)	31 (51.7)	
Sex of the infant			$\chi^2 (1) = 0.0911,$ p = 0.763
Male	33 (61.1)	35 (58.3)	
female	21 (38.9)	25 (41.7)	

4.2 Care Offered to Women after Stillbirth

Figure 4.2 shows the care offered to participants who had delivered stillbirth before baseline survey. Majority of the women reported being counseled and offered medical care and treatment which included pain relief and treatment (88.3% and 70.4%) in the intervention and control group respectively at baseline. Post natal care (PNC) especially on breast care, uterine involution, lochia, family planning and follow ups was offered to 66.7% of participants in the interventional group compared to 59.3% in the control group. Almost the same proportion of women in the interventional and control group (10.0% and 9.3% respectively) reported being counseled on grief reaction at baseline (handling emotions, looking after their health, ways of dealing with the loss and dealing with grief). There was minimal counseling on memories creation in the two groups at baseline (16.7% in interventional and 7.4% in the control group). Majority of the women were counseled on disposal of body (95.0% in the interventional group & 75.9% in the control group) where the women could either carry the body home for disposal or be disposed by the County government at a fee.

Counseling on available support sources before baseline was done to few women (interventional group 11.7% and control group 18.5%) to help them cope with the loss which included: health care providers in the ward, partner, family, friends, relatives and the church. Counseling on need to ascertain cause of death was done to 21.7% and 16.7% of participants in the intervention and control group respectively. Key informants reported not conducting peri- natal death audits in the health facilities. Some health care providers reported only interacting with the women on discharge. A key informant from the interventional arm observed, *“Most of the women with stillbirth babies rarely have*

much post natal care needs. In fact, they are only remembered on discharge”. Some health care providers rarely dwelled on the stillbirths due to their own cultural perceptions of death. A key informant from the interventional arm reported, “We tell them to move on. This baby is dead already. They will give birth to another life one. It is not the end of the world”.

Key informants in the postnatal ward cited heavy workload. If a woman exhibited symptoms like withdrawal, tantrums, self-care deficit, not asking questions and hallucinations, a psychiatric nurse was involved. However the psychiatric nurse rarely came to the ward citing heavy workload. Additionally, they reported feeling inadequate to handle the situations. A key informant from the control arm reported, *“It is devastating for me to handle a woman who has stillbirth because I am equally affected. I also have feelings”.*

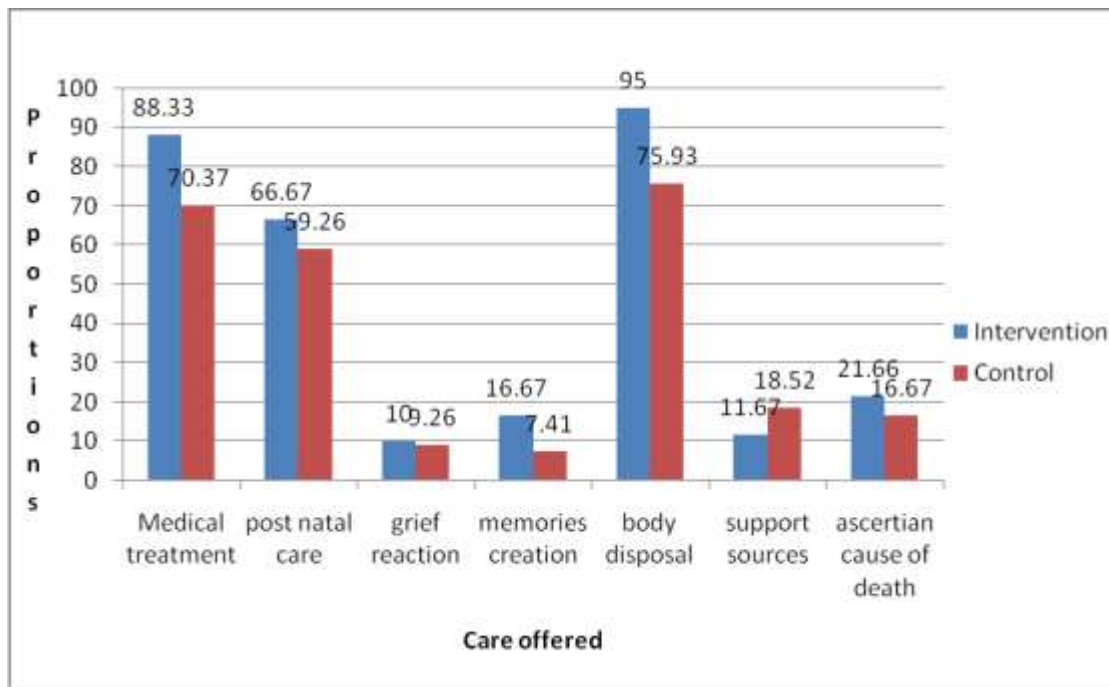


Figure 4.2 Care offered to study participants after stillbirth in both study arms

4.3 Psychological Morbidity Associated with Stillbirths

Table 4.4 shows the differences in psychological morbidity and co-morbidity associated with stillbirth from baseline to end line. The depression levels had drastically reduced by 31.7% in the interventional group compared to 12.9% in the control group. Anxiety levels reduced by 60% in interventional group compared to 16.7% in the control group. PTSD reduced by 28.4% in the interventional group compared to 13% in the control group.

Women exhibited psychological co-morbidity after delivering stillbirth in the study groups (Depression and anxiety; depression and PTSD; anxiety and PTSD; depression, anxiety and PTSD). The levels of combined depression and anxiety reduced by 15% intervention group and increased by 7.4% in the control group. The combined levels of depression and PTSD decreased in similar proportions (interventional group by 8.3% and control group by 7.4%).

Combined levels of anxiety and PTSD decreased drastically by 35% in the intervention group compared to 5.9% in the control group. Some participants reported all three psychological co-morbidity (depression, anxiety and PTSD). There was decrease in all the combined co-morbidity in similar proportions (Intervention group by 23.3% and 24% in the control group).

Table 4.4 Differences in psychological morbidity and co-morbidity associated with stillbirth among women at baseline and end line

Psychological morbidity and co-morbidity	Control group N= 54		Interventional group [N = 60	
	Baseline n (%)	End line n (%)	Baseline n (%)	End line n (%)
Depressed	39(72.2)	32 (59.3)	37 (61.7)	18 (30.0)
Not depressed	15 (27.8)	22 (40.7)	23 (38.3)	42 (70.0)
Anxious	36 (66.7)	27 (50.0)	45 (75.0)	9 (15.0)
Not anxious	18 (33.3)	27 (50.0)	15 (25.0)	51 (85.0)
PTSD	29 (53.7)	22 (40.7)	28 (46.7)	11 (18.3)
No PTSD	25 (46.3)	32 (59.3)	32 (53.3)	49 (81.7)
Both depressed& anxious	18 (33.3)	22 (40.7)	16 (26.7)	7 (11.7)
Either depressed or anxious	21 (38.9)	15 (27.8)	30 (55.0)	13 (21.7)
Neither depressed nor anxious	15 (27.8)	17 (31.5)	14 (23.3)	40 (66.6)
Total	54 (100.0)	54 (100.0)	60 (100.0)	60 (100.0)
Depressed and PTSD	15 (27.8)	11 (20.4)	11 (18.3)	6 (10.0)
Either depressed or PTSD	18 (33.3)	32 (59.3)	23 (38.3)	17 (28.3)
Neither depressed nor PTSD	21 (38.9)	11 (20.4)	26 (43.4)	37 (61.7)
Total	54 (100.0)	54 (100.0)	60 (100.0)	60 (100.0)
Anxiety and PTSD	21 (38.9)	7 (13.0)	25 (41.7)	4 (6.7)
Either anxious or PTSD	22 (40.7)	35 (64.8)	23 (38.3)	12 (20.0)
Neither anxious nor PTSD	11 (20.4)	12 (22.2)	12 (20.0)	44 (73.3)
Total	54 (100.0)	54 (100.0)	60 (100.0)	60 (100.0)
Depressed, anxious and PTSD	18 (33.3)	5 (9.3)	18 (30.0)	4 ((6.7)

4.4 Effect of Counseling in Mitigating Psychological Morbidity after Stillbirth among Women

Counseling was found to significantly mitigate psychological morbidity after stillbirth among women. The study investigated effect of counseling in mitigating psychological morbidity within and between the study groups.

4.4.1 Effect of Counseling in Mitigating Psychological Morbidity after Stillbirth within the Groups (Calculation of effect size using means)

Table 4.7 shows the differences in the mean of psychological morbidity within the study groups. There is significant difference in the mean of the depression at baseline (m=13.47) and exit (m=8.41) in the interventional group ($t(59) = 5.57$; $p \text{ value} < 0.01$).

Similarly anxiety levels show significant reduction at baseline ($m=2.04$) and exit survey ($m=0.81$) in the interventional group ($t(59) = 5.87$; $p \text{ value} < 0.01$). Post traumatic stress disorder reduced significantly from baseline ($m=34.02$) to exit survey ($m=15.38$) in the interventional group ($t(59) = 8.15$; $p \text{ values} < 0.01$).

There was no statistically significant reduction of depression from baseline ($m=14.02$) to exit ($m=12.87$) in the control group ($t(53) = 1.92$; $p \text{ value} = 0.06$). Anxiety showed no statistically significant difference from baseline ($m=1.70$) to exit ($m=1.51$) in the control group ($t(53) = 0.84$; $p \text{ value} = 0.41$). Similarly there was no statistically significant difference of post traumatic stress disorder from baseline ($m=32.85$) to exit survey ($m=29.29$) in the control group ($t(53) = 1.81$; $p \text{ value} = 0.07$).

Table 4.5 Differences in psychological morbidity after stillbirth within the groups

Group	Psychological morbidity	Assessment	Mean \pm SD	Mean diff.	95% CI	p value	t'	df
Interventional	Depression	Baseline	13.47 \pm 5	5.06	12.17 - 14.76	<0.01	5.57	59
		Exit	8.41 \pm 7.69		6.43 - 10.4			
	Anxiety	Baseline	2.04 \pm 1.53	1.23	1.64 - 2.44	<0.01	5.87	59
		Exit	0.81 \pm 0.54		0.67 - 0.95			
	PTSD	Baseline	34.02 \pm 13.26	18.64	30.59 - 37.44	<0.01	8.15	59
		Exit	15.38 \pm 11.75		12.34 - 18.42			
Control	Depression	Baseline	14.02 \pm 3.43	1.15	13.09 - 14.95	0.06	1.92	53
		Exit	12.87 \pm 5.19		11.45 - 14.29			
	Anxiety	Baseline	1.70 \pm 0.61	0.19	1.26 - 2.14	0.41	0.84	53
		Exit	1.51 \pm 0.51		1.37 - 1.65			
	PTSD	Baseline	32.85 \pm 10.35	3.66	30.02 - 35.67	0.073	1.81	53
		Exit	29.19 \pm 10.62		26.29 - 32.09			

4.4.2 Effect of Counseling in Mitigating Psychological Morbidity after Stillbirth between the Groups

Psychological morbidities were evaluated between the interventional and control groups.

The effect of the counseling intervention was assessed from baseline to exit.

4.4.2.1 Baseline Assessment of Psychological Morbidity after Stillbirth between the Groups

Table 4.5 shows the levels of depression, anxiety and post traumatic stress disorder during baseline survey between the groups. There was no significant difference in depression at baseline between the interventional (m=13.47) and control group (m=14.02) at baseline ($t(112) = -0.68$; p value=0.498). Anxiety levels showed no significant difference between interventional (m=2.04) and control group (m=1.70) at baseline ($t(112) = 1.56$; p value =0.121). Similarly there was no significant difference in post traumatic stress disorder between interventional (m=34.02) and control group (m=32.85) at baseline ($t(112) = 0.52$; p values = 0.605).

Table 4.6 Baseline assessment of psychological morbidity after stillbirth between the groups

Psychological morbidity	Group	Mean \pm SD	Mean diff.	95% CI	p value	t'	df
Depression	Intervention N=60	13.47 \pm 5.0	-0.55	12.18 - 14.76	0.498	0.68	112
	Control N=54	14.02 \pm 3.43		13.00 - 15.74			
Anxiety	Intervention N=60	2.04 \pm 1.53	0.33	1.65- 2.43	0.121	1.56	112
	Control N=54	1.70 \pm 1.6		1.26- 2.14			
PTSD	Intervention N = 60	34.02 \pm 13.26	1.17	30.59- 37.44	0.605	0.52	112
	Control N =54	32.85 \pm 10.35		30.03- 35.68			

4.4.2.2 End line Assessment of Psychological Morbidity after Stillbirth between the Groups

Table 4.6 shows the mean levels of the psychological morbidity at exit survey in both study groups. There is significant difference in depression between the interventional (m=8.41) and the control (m=12.87) at the end line survey ($t(112) = -3.59$; p value <0.01). Similarly there is significant difference between interventional (m= 0.81) and the control group (m=1.15) at end line survey ($t(112) = -7.09$; p value <0.01). There is significant difference in post traumatic stress between the interventional (m=15.38) and control group (m=29.19) at end line survey ($t(112) = -6.55$; p value <0.01).

Table 4.7 End line assessment of psychological morbidity after stillbirth between the groups

Psychological morbidity	Group	Mean \pm SD	Mean diff.	95% CI	p value	t'	df
Depression	Intervention N=60	8.41 \pm 7.69	-4.46	6.43 - 10.4	<0.01	-3.59	112
	Control N=54	12.87 \pm 5.19		11.45-14.29			
Anxiety	Intervention N=60	0.81 \pm 0.54	0.70	0.67-0.95	<0.01	-7.09	112
	Control N=54	1.51 \pm 0.51		1.37-1.65			
Post Traumatic Stress Disorder	Intervention N = 60	15.38 \pm 11.75	-13.80	12.35-18.42	<0.01	-6.55	112
	Control N =54	29.19 \pm 10.62		26.29-32.01			

4.5 Factors Influencing Psychological Morbidity after Stillbirth among Women and after Counseling

Several factors were found to significantly influence psychological morbidity after stillbirth and after counseling among women in this study. They include: socio-demographic factors, socio-cultural factors, economic factors and health system factors.

4:5.1 Influence of Socio-Demographic Factors on Psychological Morbidity after Stillbirth and after Counseling

Table 4.8 shows socio-demographic factors that influenced psychological morbidity despite counseling. Age influenced depression ($p = 0.015$), PTSD ($p = 0.032$), co-morbidity of depression and anxiety ($p = 0.028$) and co-morbidity of depression and PTSD ($p = 0.030$). Religion influenced anxiety ($p = 0.012$) and co-morbidity of anxiety and PTSD ($p = 0.014$).

Both woman and partner education influenced anxiety ($p < 0.01$ and $p = 0.017$ respectively), PTSD ($p = 0.042$ and $p = 0.028$ respectively), co-morbidity of anxiety and PTSD ($p < 0.01$ and $p = 0.017$ respectively). The years spent in the marriage influenced depression ($p = 0.034$).

Table 4.8 Influence of socio-demographic factors on psychological morbidity after stillbirth and after counseling

Variable	Psychological morbidity at End line survey (Interventional group) n= 60					
Age in years	Depression n (%)	None n (%)	Fisher's Exact	PTSD n (%)	None n (%)	Fisher's exact
< 20	0	4 (6.7)	Exact = 0.015	1 (1.6)	3 (5.0)	Exact = 0.032
20-24	11 (18.3)	9 (15.0)		5 (8.3)	15 (25.0)	
25-29	4 (6.7)	16 (26.7)		1 (1.6)	19 (31.7)	
20-34	3 (5.0)	5 (8.3)		4 (6.7)	4 (6.7)	
>35	0	8 (13.3)		0	8 (13.3)	
Age in years	Depression & Anxiety	No co-morbidity	Exact= 0.028	Depression & PTSD	No co-morbidity	Exact = 0.03
< 20	0	4 (6.7)		0	4 (6.7)	
20-24	6 (10.0)	12 (20.0)		4 (6.7)	16 (26.7)	
25-29	0	20 (33.3)		0	20 (33.3)	
20-34	1(1.6)	7 (11.6)		2 (3.3)	6 (10.0)	
>35	0	8 (13.3)		0	8 (13.3)	
Religion	Anxiety	None	Exact = 0.012	Anxiety & PTSD	No co-morbidity	Exact = 0.014
Catholic	6 (10.0)	11 (18.3)		2 (3.3)	15 (25.0)	
Protestant	3 (5.0)	40 (66.7)		2 (3.3)	41 (68.3)	
Education	Anxiety	None	Exact = 0.009	PTSD	None	Fisher's exact = 0.042
Primary	0	24 (40.0)		1 (1.6)	23 (38.3)	
Secondary	5 (8.3)	19 (31.7)		6 (10.0)	18 (30.0)	
Tertiary	4 (6.7)	8 (13.3)		4 (6.7)	8 (13.3)	
Education	Anxiety & PTSD	No co-morbidity	Exact <0.01			
Primary	0	24 (40.0)				
Secondary	2 (3.3)	22 (36.7)				
Tertiary	2 (3.3)	10 (16.7)				
Partner education	Anxiety n (%)	None n (%)	Exact = 0.082	PTSD n (%)	None n (%)	Exact = 0.038
Primary	0	19 (31.7)		0	19 (31.7)	
Secondary	4 (6.7)	17 (28.3)		6 (10.0)	15 (25.0)	
Tertiary	1 (1.6)	3 (5.0)		1 (1.6)	3 (5.0)	
N/A	4 (6.7)	12 (20.0)		4 (6.7)	12 (20.0)	
Partner education	Anxiety & PTSD	No co-morbidity	Exact = 0.017			
Primary	0	19 (31.7)				
Secondary	2 (3.3)	19 (31.7)				
Tertiary	0	4 (6.7)				
N/A	2 (3.3)	16 (26.7)				
Years of marriage	Depression n (%)	None n (%)	Exact = 0.034			
N/A	6 (10.0)	10				
<2	3 (5.0)	5 (8.3)				
2-5	8 (13.3)	8 (13.3)				
6-10	1(1.6)	11 (18.3)				
>10	0	8 (13.3)				

4.5.2 Influence of Socio-Economic Factors on Psychological Morbidity after Stillbirth among Women and after Counseling

Table 4.9 shows the socio-economic factors that significantly influenced psychological morbidity despite counseling. Woman's occupation influenced PTSD ($p = 0.042$) and co-morbidity of anxiety and PTSD ($P = 0.044$) while the land owned in hectares influenced depression ($p = 0.015$) and co-morbidity of depression and PTSD ($p = 0.036$).

Table 4.9 Influence of socio-economic factors on psychological morbidity after stillbirth and after counseling

Variable	Psychological morbidity at End line survey					
	Intervention		Fisher's Exact	Control		Fisher's Exact
Occupation	PTSD n (%)	None n (%)	Exact= 0.042	Anxiety & PTSD	No co- morbidity	Exact = 0.044
Employed	5 (8.3)	8 (13.3)		2 (3.3)	11 (18.3)	
Housewife	3(5.0)	33 (55.0)		1 (1.6)	35 (58.3)	
Student	2 (3.3)	4 (6.7)		1(.6)	7 (11.7)	
Business woman	1(1.6)	4 (6.7)		0	8 (13.3)	
Land size in hectares	Depression	none	Exact = 0.015	Depress ion & PTSD	None	Exact = 0.036
<1	4 (6.0)	15 (25.0)		2 (3.3)	17 (31.5)	
1-4	13 (21.7)	27 (45.0)		3 (5.0)	37(68.5)	
>4	1 (1.6)	0		1 (1.6)	1 (1.6)	

4.5.3 Influence of Socio-Cultural Factors on Psychological Morbidity after Stillbirth among Women and after Counseling

Table 4.10 shows various socio-cultural factors influenced psychological morbidity after stillbirth despite counseling. The number of living children influenced depression ($p = 0.022$), anxiety ($p = 0.015$) and co-morbidity of depression and anxiety ($p = 0.024$). Myths in the community associated with stillbirths influenced anxiety ($p < 0.01$), co-morbidity of depression and anxiety ($p < 0.01$), co-morbidity of anxiety and PTSD ($p = 0.034$) and all the three combined psychological morbidity ($p = 0.04$). Beliefs projected as reported by the FGDs and study participants include: No coffin should be provided, it is a misfortune to the family and the woman needs cleansing, ancestors have taken away the baby as result of sacrifices not offered, Witchcraft, born in a family with history of curses/abortion (curse can follow generations to come), taking care of woman experiencing a loss while the woman is already pregnant (needs cleansing before conceiving again), unfaithfulness in marriage (either the woman or partner) and not being a virgin.

Spiritual support from the church and the members influenced psychological morbidity despite counseling. Spiritual support influenced anxiety ($p = 0.032$), PTSD ($p = 0.044$) and co-morbidity of anxiety and depression ($p < 0.01$). Difficulties in relationships with partner influenced anxiety ($p = 0.02$), co-morbidity of depression and anxiety ($p = 0.012$) and all the three combined psychological morbidity ($p < 0.01$).

Table 4.10 Influence of socio-cultural factors on psychological morbidity after stillbirth after counseling

Variable	Psychological morbidity at End line (Interventional group) n= 60					
No. of living children	Depression n (%)	None n (%)	Exact= 0.022	Anxiety n (%)	None n (%)	Fisher's Exact
None	12 (20.0)	14 (23.3)		8 (13.3)	18 (30.0)	Exact= 0.015
1-2	6 (10.0)	19 (31.7)		1 (1.6)	24 (40.0)	
>2	0	9 (15.0)		0	9 (15.0)	
No. of living children	Depression & Anxiety	None	Exact= 0.024			
None	12 (20.0)	14 (23.3)				
1-2	6 (10.0)	19 (31.7)				
>2	0	9 (15.0)				
Myths on stillbirth?	Anxiety n (%)	None n (%)	Exact <0.01	Depression & Anxiety	No co-morbidity	Exact = 0.010
No	4 (6.7)	45 (75.0)		3 (5.0)	46 (76.7)	
Yes	5 (8.3)	6 (10.0)		4 (6.7)	7(11.6)	
Myths on stillbirth?	Anxiety & PTSD	No co-morbidity	Exact = 0.034	Depression & Anxiety & PTSD		Exact = 0.040
No	2 (3.3)	47 (78.3)		2 (3.3)	47 (78.3)	
Yes	2 (3.3)	9 (15.0)		2 (3.3)	9 (15.0)	
Offered spiritual support?	Anxiety n (%)	None n (%)	Exact = 0.032	PTSD n (%)	None n (%)	Exact = 0.044
No	7 (11.6)	19 (31.7)		8 (1.6)	18 (30.0)	
Yes	2 (3.3)	32 (53.3)		3 (5.0)	31 (51.6)	
Offered spiritual support?	Anxiety & PTSD	No co-morbidity	Exact <0.01			
No	3 (15.0)	33 (55.0)				
Yes	1 (1.6)	23 (38.3)				
Partner relationship difficulties?	Anxiety n (%)	None n (%)	Exact = 0.020	Depression & Anxiety n (%)	No co-morbidity n (%)	Exact = 0.012
No	7 (11.6)	51 (31.7)		5 (8.3)	53 (88.3)	
Yes	2 (3.3)	0		2 (3.3)	0	
Partner relationship difficulties?	Depression & Anxiety & PTSD	No co-morbidity	Exact < 0.01			
No	4 (6.7)	54 (90.0)				
Yes	0	2 (3.3)				

4.5.4 Influence of Health System Factors on Psychological Morbidity after Stillbirth among Women after Counseling

Table 4.11 shows the various significant health system factors that influenced psychological morbidity after stillbirth loss in this study despite counseling. These include: Timing of fetal death, viewing the baby's body after delivery, birth assistant during delivery, whether the death was preventable and the woman was informed on the cause of the baby's death. The time of fetal death influenced PTSD ($p = 0.022$), co-morbidity of anxiety and PTSD (0.015).

Viewing the body after delivery influenced depression ($p = 0.045$), PTSD ($p = 0.031$), co-morbidity of depression and PTSD ($p = 0.045$) and all the three co-morbidity combined ($p = 0.047$). There was no space for storing the body in the labour ward hence mortuary attendants or relatives collected the body within 6 hours in the interventional group while in the control group the body was stored in the acute room till the patients or the relatives viewed and collected. Some women too did not want to view the body. Key informant from the interventional arm retorted, *-Even telling them to view the body is like forcing them"*

The woman's perception that the death was preventable with prompt and proper interventions influenced anxiety ($p = 0.05$). Some of the study participants and FGD's felt the death was preventable by addressing these 'missed opportunities'; Firstly, early referral system to comprehensive and emergency and obstetric care facility. This they said was because of delays in getting means of transport (ambulance). This was particularly reported by participants from Mbiuni, Masii, Mwala, Masinga, Katangi, Ngoliba and Yatta parts of the interventional arm (Machakos County); Secondly, proper

care and diagnosis at initial facility including timely implementation of interventions. Women attending health facilities lamented to have reported no fetal movements but were reassured and sent back home only to come later with no fetal heart; Thirdly, women believed much was ignored at the health facility; Fourthly, been given honesty, forthcoming and step by step information on time; Fifthly, avoiding drugs given at the local dispensary before delivery to knock off false labour; Sixthly, avoiding unnecessary delay in labour ward before admission from home yet the client had fetal movements by then; ultrasound should be available and free for all pregnant women; Lastly, clear communication on when to return and danger signs in pregnancy and reducing delays in taking women to theatre when scheduled and delays in theatre. The women felt if the C/S was done earlier the baby could have been saved, *“I came at 4pm to the hospital; I was prepared by 5am the following day but taken to theater at 5pm. By then the baby was not breathing”*. (Focused group participant from the interventional arm reported). Another participant from the control arm reported *–I was in the hospital for two days, they should have done something”*.

The blame was not only on the health system but some clients felt they were also to blame on the loss of their child which affected psychological morbidity due to self blame despite counseling. The focused group discussions participants felt the deaths could have been prevented by; firstly, co-operating with the nurses. A participant from the interventional arm regretted *“I wish I had co-operated with the nurses, I had refused examination”*; secondly, giving birth in a marital union. They felt it was a taboo to have a baby out-of-wedlock. A focused group participant from the control arm commented *“I wish I was married”*; thirdly, using safe means of transport. A participant from the

interventional arm felt the use of motor bike to access the health centre was the cause of her baby's death; fourthly, prompt care seeking. A participant from the control arm reported neglecting headache and lower abdominal pains till bleeding started at home; adhering to nurse advice. A participant from the interventional arm regretted failure to take ultra sound scan as earlier advised; fifthly, not going to a public hospital. Some clients felt mismanaged in the private clinics and hospitals before being referred to the level 4 or 5 facility. This was reported by participants from both arms of the study; lastly, early and prompt ANC attendance. Some participants felt some prevention measures could have been done early in the clinic.

The birth assistant during delivery (midwife or doctor) influenced PTSD ($p = 0.042$). Informing the women on the cause of their babies death influenced anxiety ($p < 0.01$). Key informants reported not conducting the peri-natal death audits routinely in the health facilities to ascertain the cause of death. Causes of death reported by focused group discussions from both study arms included; *__kupasuka ua wa mwana*'(uterine rupture), *__Kukwia nda*' (intra-uterine fetal death), *__mwana kukelana*'(fetal malpresentation), *__kunoa*' (fetal distress), *__nzou ya mwana kusyawa mbee*' (placenta praevia), *__kuua*'(ante partum haemorrhage), poorly controlled blood pressure and diabetes. Others did not want to know the cause citing various reasons: a loss is a loss, it will not help them for they expected a living child, they had no courage it was hurting them, baby was born dead hence no need to know, felt very affected and didn't want to know. It is not uncommon for grieving women to hear platitudes such as: *"You're young, you can have more"*. A key informant from the interventional arm reported *"I advise the women to conceive immediately. They don't need to use family planning since they don't have a baby to*

forget the loss". Another key informant from the control arm reported. *-I always tell them to conceive as soon as they are ready*".

Key informants from both study arms reported that attending to a woman who experienced stillbirth could result in *loss of livelihood*' and *public humiliation*'. The key informants from both study arms highlighted the need for professional support for staff, especially in psychological care and communication skills required following stillbirth. Peer support was valuable, even though it was usually informal in both study arms.

The key informants from both study arms reported the following challenges: referrals from lower level facilities; lack of revolving funds to manage services at the level 5 hospital and functional ambulances; counseling women for induction of birth after diagnosis of stillbirth; convincing women that they will get a live baby; offering personalized counseling with the high workload; high number of stillbirths in the month of May and June 2018; women in the wards not reporting fetal movements on the fetal kick chart; follow-up of clients; conflicting management practices between the medical officers and the consultants. *-What they practice is not what they teach us* (a key informant from the control arm lamented); fear of litigation and disciplinary action. A key informant from the control arm lamented, *-I was called for debriefing only to look for a fault. Why should I do it on paper?*; unnecessary blame by the clients. *-The only baby carried to term, the cause of death was the doctor*" Reaction of a client who had lost 4 previous pregnancies in the control arm. A key informant from the control arm reported *"I advised a patient to come for elective caesarean section, unfortunately the*

labour came earlier, now she blames me for the loss"; heavy workload and many referrals due to non-functional theatres in the level 4 hospitals. A key informant from the control arm reported –*We had 2 women in labour in need of emergency C/S, one had non-reassuring fetal status, another had ruptured uterus with 3 previous scars in labour. Both babies died. Unfortunately the women now blame the system*".

Key informants from the both study arms expressed need for support and understanding. *"Health workers need somebody to talk to them but people think we are stones. They think we are not affected"*. A key informant from control arm lamented, *"The community needs to understand it was not in our making. We are not God"*. A key informant from the control arm observed, *"We are affected when we lose clients, but nobody cares about us. At times we even attend the burial"*.

Some key informants emphasized on team work. A key informant from the control arm observed –*We are told to never walk alone, but here you are always walking alone*". They also emphasized on need for junior staff mentorship. –*A lot need to be done to the junior staff to understand obstetric emergencies. A junior staff refers a patient having a pulsating cold prolapse. No intervention all way over 100kms. They want to sit in front with the driver instead of being at the back with the patient. They don't even have patient's history on arrival yet they are referring*". A key informant from the control arm observed.

Table 4.11 Influence of health system factors on psychological morbidity after stillbirth and after counseling

Variable	Psychological morbidity at End line survey (Interventional group) n= 60					
Timing of fetal death	PTSD n (%)	None n (%)	Fisher's Exact=	Anxiety & PTSD n (%)	No co- morbidity n (%)	Fisher's Exact
Before labour at home	5 (8.3)	9 (15.0)	Exact = 0.022	8 (13.3)	18 (30.0)	Exact= 0.015
During labour at home	0	15 (25.0)		1 (1.6)	24 (40.0)	
During labour in the hospital	6 (10.0)	25 (41.7)		0	9 (15.0)	
Viewed body of baby	Depression	None	Exact =0.045	PTSD	None	Exact = 0.031
No	5 (8.3)	3 (5.0)		4 (6.7)	4 (6.7)	
Yes	13 (21.7)	39 (65.0)		7 (11.7)	45(75.0)	
Viewed body of baby	Depression & PTSD	No co-morbidity	Exact = 0.016	Depression, Anxiety & PTSD	No co-morbidity	Exact = 0.047
Yes	3 (5.6)	5 (8.3)		2 (3.3)	6 (10.0)	
No	3 (5.6)	49 (81.7)		4 (6.7)	50(83.3)	
Preventable death?	Anxiety	None	Exact = 0.050			
No	9 (15.0)	34 (56.7)				
Yes	0	17 (28.3)				
Birth assistant	PTSD	None	Exact = 0.042			
Nurse	2 (3.3)	28 (46.7)				
Doctor	9 (15.0)	21 (35.0)				
Informed the cause of death?	Anxiety	None	Exact < 0.01			
No	8 (13.3)	19 (31.7)				
Yes	1 (1.6)	32 (53.3)				

4.6 Multiple-Variable Regression Analysis

Table 4.12 shows the outcomes of the multiple regression analysis. Number of years spent in marriage and viewing the body was associated with reduced levels of depression. Women who were married for 6-10 years were 11.92 times more likely to exhibit reduced depression levels compared to those who had been married for less than 2 years (OR 11.92; CI 1.38 – 51.65, $p < 0.024$). Women who viewed the body were 13.7 times more likely to exhibit reduced depression levels compared to those who had not viewed the body after delivery (OR 13.70; CI 1.15 – 63.76, $p < 0.039$).

Women belonging to the Protestant church were 4.11 times more likely report reduced anxiety compared to those belonging to the Catholic Church. Women who felt that the death of their baby was preventable with proper intervention were 11.21 times more likely to report reduced anxiety (OR 11.21; CI 1.20 – 55.00, $p < 0.034$). Women who viewed the body were 8.84 times more likely to report reduced PTSD, 4.18 times more likely to report reduced co-morbidity of depression and PTSD and 8.76 times more likely report reduction of all the three co-morbidity compared to women who had not viewed the body of the baby after birth (OR 8.84, CI 1.27 – 61.26, $p < 0.027$; OR 4.18, CI 1.03 – 16.90, $p < 0.045$; OR 8.76, CI 1.73 – 44.41) respectively.

Table 4.12 Multi- variable regression analysis

Independent Variable	Dependent variable	OR	95% CI	Standard error	p-value
Years of marriage	Depression				
<2 years (ref)					
2-5 years		3.06	0.65 – 14.31	2.41	0.155
6-10 years		11.92	1.38 – 51.65	13.09	0.024*
>10years		4.13	0.25 – 37.18	5.88	0.32
Viewed body	Anxiety				
No (ref)					
Yes		13.70	1.15 – 63.76	17.34	0.039*
Religion	Anxiety				
Catholic (ref)					
Protestant		4.11	1.16 – 14.50	2.64	0.028*
A preventable death					
No (ref)	Anxiety				
Yes		11.21	1.20 – 55.00	12.80	0.034*
Viewed body	PTSD				
No (ref)					
Yes		8.84	1.31 – 61.78	8.83	0.027*
Yes	Depression & PTSD	4.18	1.03 – 16.90	3.0	0.045*
Yes	Depression anxiety & PTSD	8.76	1.73 – 44.41	7.25	0.009*
NB * means the p value is statistically significant					

4.7 Coping Strategies Employed by the Study Participants after Stillbirth

Figure 4.3 shows the responses from the study participants on their coping strategies. When asked what helped them the most to cope, 25% from the intervention group reported counseling compared to 6% from the control group, 7% reported the spouse from the intervention group compared to 8% from the control group, 8% (interventional group) and 12% (control group) reported support from mother, family and friends while 7% (interventional group) and 13% (control group) reported prayers and reading the bible. Key informants reported similar findings. A key informant from the interventional group reported, *-The nurse on duty talks to them. Their spouse, family and church pastor visits them in the ward.*||

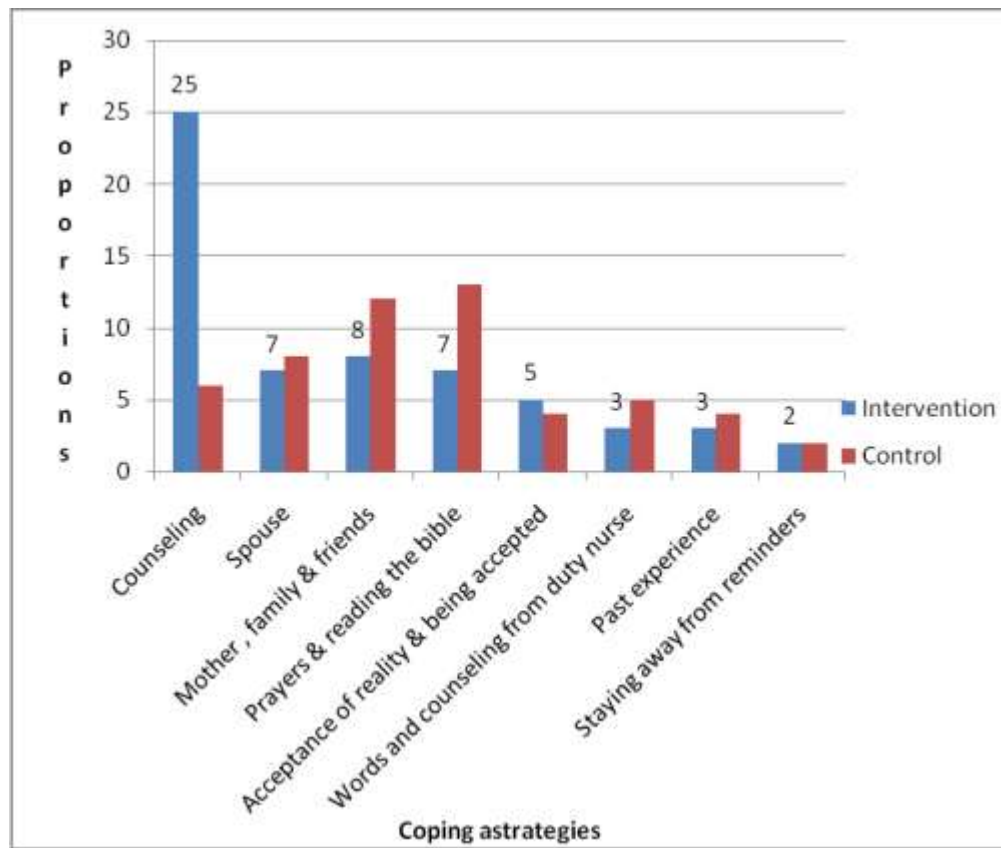


Figure 4.3 Coping strategies employed by participants after stillbirth

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Socio-Demographic and Cultural Characteristics of the Study Respondents

Majority of the women had basic primary education although there were variations in advancement to secondary and tertiary level. Literacy levels in women influence use of maternity services and access to quality health care (Cacciatore *et al.*, 2014). This agrees with the study findings were majority of the women sought skilled delivery at the hospitals. Majority of the women were in marital union. Similar finding was reported in Kenya Demographic and Health Survey where at least 70% of the women had been in a union (KNBS, 2015).

Household empowerment is crucial in determining timely use of health care. This indicates that women had no control over their husbands' earning and this could lead to delay in deciding to seek care or even access to care for timely intervention to mitigate psychological morbidity after stillbirth. Women earnings and control over their husbands' earnings are strong indicators for access and use of health care for women as reported in KDHS. Land ownership is a source of pride and independence from the larger family which might influence the decisions made in the individual households (KNBS, 2015). This might influence psychological morbidity since this study found that land owned in hectares influenced depression and co-morbidity of depression (figure 4.9).

Presence of myths and beliefs influence psychological morbidity after stillbirth. In this community stillbirth baby is known as __kavuno in the interventional group or __kutambaika in the control group meaning __unwanted creature. Women reported belief

that they needed to make peace with the ancestors since it is a bad omen. A similar study in Uganda found out that women weep in silence since stillbirths are not acknowledged in the society due to the beliefs surrounding the loss (Kiguli *et al.*, 2015).

Most babies died during labour in the hospital in the interventional group whereas most babies died at home before labour in the control group (p value=0.035). Similarly most babies were preterm in the control group compared to the interventional group where most babies were term (p<0.01). This agrees with a study in Nigeria which found that most babies died during labour in the hospital among un booked patients and the deaths were avoidable (Kuti *et al.*, 2017). The same study reported more antepartum deaths among the booked patients similar to what was reported in the control group. A similar study in Ghana reported most stillbirths occurred during labour thus fresh stillbirths (Der *et al.*, 2016). The findings in the control group agree with another study that found macerated stillbirth to be the common type (Okeudo *et al.*, 2013). Majority of the stillbirths in the interventional group were term for gestation compared to control group where most of the stillbirths were preterm. This finding of the control group agrees with the findings in Ghana where most of the stillbirths had a mean of 34.8 weeks gestations thus preterm (Der *et al.*, 2016).

5.1.2 Care Offered to Women after Stillbirth

Women reported feeling pain and being ashamed to report due to their personal stigma. Memories creation was least reported by the study participants which was also reported similarly elsewhere (O'connell *et al.*, 2016). Memories creation is part of processing emotions (Crawley *et al.*, 2013). The focus is on memory sharing not memory creation.

Women need encouragement to share and express their feelings as this is part of the grieving process, to come to terms with the loss and integrate the birth experience in her memory (Chung & Reed, 2017; Gold *et al.*, 2015). The findings of this study concur with this report.

Most women requested follow-up and even home visits by the care providers to help them cope with the community stigma and psychological morbidity. This was not a common practice in the study area though it was reported in another study as a best practice (O'connell *et al.*, 2016). Previous studies have reported that the care women and their families receive following stillbirth is inadequate and does not meet their emotional needs thus leaving them in distress (Kersting *et al.*, 2013). In this study, routine care and treatment does not take into account the psychological problems and emotions reactions associated with stillbirth. Despite the known psychological vulnerability of these women after stillbirth and the fact that stillbirth causes mental illnesses, very few of this women receive the much needed psychological support.

5.1.3 Psychological Morbidity after Stillbirth among Women

Delivering a stillbirth involves physical, cognitive and emotional trauma. These processes are likely to exacerbate the woman's risk for depression threefold, post-traumatic stress disorder (PTSD) and other adverse psychological outcomes (Gold *et al.*, 2014). The study participants reported psychological morbidity such as depression, anxiety and post traumatic stress disorder at different thresholds during baseline survey and exit survey. There was decrease in psychological morbidity in both control and intervention groups. This has also been reported elsewhere that psychological distress can decrease with time

despite intervention (Navidian & Saravani, 2017). The fact that the control group was interviewed is also therapeutic and can decrease the threshold of the psychological morbidity. Considering that this study was conducted within 24 hours after stillbirth when the severity of the psychological morbidity was intense, it is also possible that the severity decreased with time. The symptoms may decrease with time but may not entirely disappear. In both groups a similar proportion of women reported depression at baseline survey. These findings were similar to the study results on women with stillbirths by Clauss *et al* (2009), who during pre-assessment, found out that most of the women in both the control and experimental groups had mild depression (control group 32, 71.1%; experimental group 35, 77.8%).

Most women report psychological morbidity after stillbirth. In the *Listening to Parents study*, 68% of women reported four or more symptoms at 10 days, falling to 35% of women at 9 months (Redshaw *et al.*, 2014). This is three times greater than following a live birth, where 8-13% of women report depression around 9 months postnatal (Evans *et al.*, 2012; Redshaw & Henderson, 2015). At baseline, 103 (90.3%) women reported at least one psychological morbidity. This psychological morbidity is endured for at least four years post-loss in about half of cases. If these figures are extrapolated to the 2.7 million women who experienced stillbirth in the year 2015, an estimated 2.43 million women would be living with at least a psychological morbidity after stillbirth (depression, anxiety or PTSD).

Anxiety levels were quite high in both control and intervention groups at baseline (66.7% and 75% respectively). A similar study in Asia found scores of anxiety at 82.2% for

experimental group and 57.1% for the control group at baseline (Simpson *et al.*, 2015). During exit survey the levels of anxiety had significantly decreased in the interventional group compared to the control group. This indicates that the counseling intervention mitigated anxiety though anxiety levels reduce with time despite counseling (Navidian & Saravani, 2017). Women who do not receive follow-up after stillbirth to allow for discussion reported higher risk for anxiety in another study (Bhat & Byatt, 2016).

Stillbirth is a high risk factor for psychiatric morbidity, including PTSD and the impact is long-lasting (Ayers *et al.*, 2016). Post traumatic stress disorder was reported at 53.7% in the control group and 46.7% in the interventional group at baseline survey. A study by Cacciatore *et al* (2014) found PTSD prevalence following stillbirth was at 42.3%. This study's estimate of PTSD (53.5% in the control arm and 46.7% in the interventional arm) is not a 12-month incidence proportion, as it is a two-week follow-up assessment. However, it suggests that, in this sample, incidence in the population is not lower than what this study has found.

Post Traumatic Stress Disorder had reduced by 28.4% in the interventional group after counseling. This study suggests that stillbirth lead to traumatic stress both short and long-term. Counseling can help mitigate PTSD. Even in high-income countries where professional psychological support is available, incidence of depression, anxiety and posttraumatic stress disorder (PTSD) is about 20% in women of stillborn babies (Frøen *et al.*, 2011).

Depression may exist as a sole diagnosis, but co-morbidity with other mental disorders, such as anxiety disorders is common (Howard *et al.*, 2014). Depression co-occurred with anxiety and declined at exit survey in the interventional group while it increased in the control group. This could be attributed to difficulties in relations with the partner ($p = 0.012$) back home after discharge from the hospital. Some women reported experiencing difficulties in relationships due to the loss where they were blamed and stigmatized by the family community.

Participants in the study groups reported co-morbidity of depression and PTSD at baseline survey. A study by cacciatore *et al* (2014) reported co-morbidity of the same. Post natal depression is a risk for PTSD (Gravensteen *et al.*, 2013; Ayers *et al.*, 2016) hence co-morbidity. At exit survey, 10% of the women in the interventional study and 20.4% in the control group reported the co-morbidity. This indicates that despite counseling there are other coping mechanisms participants apply to deal with the loss and they are quite significant (figure 4.3). Similar coping mechanisms were reported elsewhere (Van & Meleis, 2010).

Co-morbidity of anxiety and PTSD was reported by the study participants at baseline. During exit survey the co-morbidity reduced by 35% in interventional study and 5.9% in the control study. This implies that counseling helps women mitigate co-morbidity of anxiety and post traumatic stress disorder. Co-morbidity of anxiety and PTSD was also reported by Ayers *et al* (2016). The recovery process following stillbirth of a child usually lasts for one or two years, but it can last longer or it may never be complete at all. The results of this study echoed literature that women after stillbirth experience

psychiatric co-morbidity (Chung & Reed, 2017). PTSD co-exists with other psychological problems since PTSD is not a discrete psychological syndrome.

5.1.4 Effect of Counseling in Mitigating Psychological Morbidity after Stillbirth among Women

The mean score for depression in baseline survey was 13.47, as compared to 4.27 at exit survey in the interventional group. The mean score difference was highly statistically significant ($p < 0.01$). Comparatively, mean score in the control group at baseline survey was 14.02 and by exit survey, it was 12.72. Moreover, the decrease in the mean score was not statistically significant ($p = 0.176$). This finding supports that of randomized trial which reported women with psychological intervention were less likely to be depressed (Simpson *et al.*, 2015).

In the interventional group, the mean score for anxiety at baseline was 2.04. This reduced to 0.81 during exit survey. The reduction was statistically significant ($p \text{ value} < 0.01$). Similarly, the mean score for anxiety in the control group reduced from 1.701 to 1.51, between baseline and exit survey, and this was not statistically significant ($p = 0.405$). During this study majority of the women sought out about possible risks and recurrence in next pregnancy. A similar finding was reported by Sutan and Miskam (2012).

The interventional group had a mean score of 34.02 compared to control group at 32.85 at baseline survey for PTSD. During exit survey the interventional group had a mean score of 15.38 and control group with mean score of 21.92. The difference in the mean score of the interventional group was statistically significant ($p \text{ value} < 0.01$) compared to the control group ($P \text{ value} = 0.0726$). This indicates that counseling helps mitigate PTSD

though the symptoms decrease with time even without intervention. The association between perceived professional support and lower PTSD and depression scores supports earlier research emphasizing the need for supportive professional guidance after stillbirth (Navidian and Saravan, 2017). A similar study showed that counseling mitigates psychological morbidity (Burden *et al.*, 2016). Empathic and supportive behaviour in all encounters between bereaved parents and care providers can mitigate psychological morbidity, both immediately after the stillbirth of a baby and in the longer term. Counseling is recommended to both women and couples in another study (Bhat & Byatt, 2016).

5.1.5 Factors Influencing Psychological Morbidity after Stillbirth among Women after Counseling

Age influenced depression and PTSD even after counseling which has been reported in similar studies (Ayers *et al.*, 2016; Chung & Reed, 2017). The younger and older women have different perception of trauma. The young woman has little experience on how to move on with limited social network. The older woman might be planning to conceive her last child. Hence the negative outcome of stillbirth is traumatizing for the woman. Young parents, who may not have experienced other major traumas in life, and may lack the problem-solving abilities of older parents, are at risk for complicated, unresolved, or psychological morbidity (Ayers *et al.*, 2016)

Education influenced anxiety, PTSD and co-morbidity of anxiety and PTSD. Education has been reported to influence PTSD in other studies (Ayers *et al.*, 2016). Education influences reasoning ability, understanding and ability to comprehend information. When

the partner is also educated they are able to support each other positively and mitigate psychological morbidity. Moreover, the close linkages between poverty, education of women and empowerment implies that women who have lost a baby are more vulnerable (Ayers *et al.*, 2016).

Religiosity (religious attendance, strength of religious faith, use of prayer, or self-rated religiosity) is essential in mitigating anxiety and PTSD after stillbirth (Cowchock *et al.*, 2011). Various church and church members visited their faithful, consoled with them, gave them hope and encouragement in this study. Spiritual support is necessary for women experiencing stillbirth. Faith is a source of both comfort and strength. Stillbirth loss may prompt spiritual crises. Spiritual support was found to influence anxiety ($p = 0.03$), PTSD ($p = 0.044$) and co-morbidity of anxiety and PTSD ($p < 0.01$) in this study. The need to address loss more holistically implies a need for theories that incorporate the spiritual dimension of grief.

Under the most extreme conditions, where a family cannot meet basic needs for food and shelter, the time and resources to grieve are likely to be unavailable (Flenady *et al.*, 2016). Moreover, Stigma associated with stillbirth is prevalent across the economic spectrum and contributes to social isolation and feelings of shame to further undermine the support available to grieving women (Flenady *et al.*, 2016). Socio-economic status was reported to influence PTSD even after counseling in another study (Ayers *et al.*, 2016).

Occupation and land size significantly influenced depression, co-morbidity of depression and post traumatic stress disorder and co-morbidity of anxiety and post traumatic stress

disorder. This agrees with another study that the highest risk for psychological morbidity lies within the poorest families (Flenady *et al.*, 2016). The available data show that the direct financial cost of stillbirth is 10–70% greater than the cost of a live birth (Ogwulu *et al.*, 2015). Funeral and burial expenses were usually paid by parents in this study. Parents can lose income from time taken off work, reduced working hours, or reduced productivity. This study findings concurs with a previous study finding on unemployment influencing psychological morbidity after stillbirth (Burden *et al.*, 2016)

Stillbirth loss is a risk factor for relationship break-down (Gold *et al.*, 2010). Gold *et al* (2010) found that stillbirth increased the risk of parental separation by 40% (adjusted Hazard Ratio (aHR) 1.40; 95% confidence interval (CI) 1.10 to 1.79). Similarly, Shreffler *et al* (2012) found that women who had experienced stillbirth had a significantly increased risk of divorce post-loss (Odds ratio (OR) 1.70; $P < 0.05$). In this study, women reported that their partners were sad, depressed, weak, bitter, terrified, sorrowful and afraid about the stillbirth. Some partners blamed the women and this influenced psychological morbidity. A similar study has reported women being stigmatized, isolated and abused by their partners thus manifesting psychological morbidity (Burden *et al.*, 2016). At extreme, it can lead to marital separation further aggravating suffering for the bereaved woman. A FGD participant from the interventional arm regretted, “*My husband blames me for the loss of my baby; he says it was because of working hard*”.

Involving care givers helps mitigate psychological morbidity. Family was the most frequent source of support for women following stillbirth in this study; although this was not always universally positive. While family and friends were often essential for

effective support (Frøen *et al.*, 2010), some respondents in this study reported that family members had unrealistic, unhelpful expectations of recovery following stillbirth. The need for support between women and the greater family could lead to relationship difficulties which influenced anxiety and co-morbidity of depression and anxiety. In the *Listening to parents study*, 12% of women reported difficulties in their relationship with family members which influenced their psychological morbidity (Redshaw *et al.*, 2014).

Women experience profound loss that is long-lasting following stillbirth and are often very vulnerable. The experience for many women is very traumatizing. The short hospital stay suggests that other community based interventions are needed to mitigate psychological morbidity. Professional support to enable parents to share their experiences with others, and social support from family and local social networks were both associated with lower levels of depression and better mental health.

A survey of 2,490 healthcare professionals across 135 countries showed that in low and middle-income settings, disposal of the baby's body occurs without any recognition or ritual, such as naming, funeral rites, or the baby being held or dressed by the woman (Flenady *et al.*, 2016). In this study, women reported that no coffin provided; the baby was wrapped with a lessa and put in a carton with little recognition for descent sent off then handed over to the woman for burial. A FGD participant from the control arm reported been told, "*Mama enda utafute box, kuja na lessa*" translated to "*Woman, go look for a box and a lessa*" These were for wrapping the baby. Some women from both study arms reported burial preparations were done while they were still in the hospital.

“I could not properly bury my child because I lacked the financial means and was still in hospital; that hurts because I have no grave.”(Key informant participant from the interventional arm retorted). Similar findings were reported on impact of ambiguities of burial arrangement on psychological morbidity (Burden *et al.*, 2016).

Cultural perceptions of stillbirth influenced psychological morbidity. In this community stillbirth is known as *__kavuno‘* in the interventional arm or *__kutambaika‘* in the control arm. This translated means *__unwanted thing‘*. Myths influenced anxiety ($p < 0.01$), co-morbidity of depression and anxiety ($p < 0.01$), anxiety and PTSD ($p < 0.034$) and all the three co-morbidity ($p = 0.040$) as shown in table 4.10. Stillbirth remains hidden from society. Disenfranchised grief is common, whereby parents‘ grief after the death of their child is not legitimized or accepted by health professionals, their family, or society. In a survey undertaken for Lancet 2016 Series, around half of 3,503 bereaved parents felt their community believed that –parents should try to forget their stillborn baby and have another child. Women whose babies have been stillborn especially feel stigmatized, socially isolated, and less valued by society and are subject to abuse and violence (Flenady *et al.*, 2016). Stigma and taboo exacerbate trauma for families, and fatalism impedes progress in stillbirth prevention (Flenady *et al.*, 2016; Heazel *et al.*, 2016).

The number of living children significantly influenced depression, anxiety and co-morbidity of depression and anxiety despite counseling. Having a living child was a coping strategy for some women. This agrees with similar findings in a systematic review on parent’s experiences following stillbirth on having a living child as a protective factor against psychological morbidity (Bhat & Byatt, 2016; Burden *et al.*, 2016).

Timing of fetal death influenced PTSD and co-morbidity of anxiety and PTSD. Majority of the deaths occurred in the hospital and were preventable deaths. The *lancet* stillbirth series reported similar findings (Lawn & Kenney, 2011). A study in Ghana reported most stillbirths were fresh as they occurred during labour in the hospital (Der *et al.*, 2016). Women whose fetal death occurred while at home either had themselves to blame or the health care providers. The woman may harbor feelings of guilt and blame herself, feeling her baby has died because of something that she might have done or not, whereas family members may place the blame on the health-care professionals. This influenced psychological morbidity even after counseling.

Viewing the body influenced depression, PTSD, co-morbidity of depression and PTSD and all the combined co-morbidity. This finding is similar to studies done on parents' experiences with hospital care after stillbirth, which stated that the parents appreciated the time and the contact they had with their stillborn babies (Simpson *et al.*, 2015; Kingdon *et al.*, 2015). Currently, most 'best practice guidelines' recommend all parents be offered an option about whether they would like to see and hold their stillborn baby and that parents be supported (Erlandsson *et al.*, 2013). However, the evidence around the benefit of holding and seeing remains somewhat controversial, providing no simple directions to guide staff and parents. Staff support and attitudes in influencing parental decision-making about seeing and holding a deceased baby is well documented (Ryninks *et al.*, 2014). Key informant from interventional group reported, "*We allow them to view the body, if they decline a relative has to come and view. After all this is a minor thing, they can give birth to another live one. They don't need to dwell on that. Some of them are to blame for the loss. They stay at home despite not feeling fetal movements*". Similar

findings have been reported in the ending preventable stillbirth series (Flenady *et al.*, 2016).

The assistant during delivery influenced PTSD ($p = 0.042$). This was either a doctor or a midwife. This could be attributed to the information and explanations provided to the cause of the death, counseling and encouragement and the perception that they actually did their best to save the baby. Support during birth is a protective factor against PTSD (Furuta *et al.*, 2014; Ayers *et al.*, 2016). When bereaved women perceive HCPs as less supportive and ignorant they suffer from PTSD (Elmir, *et al.*, 2010). Stillbirth mostly takes place in hospitals, where labor and delivery services focus on birth and not well prepared to address death.

Comprehensive investigation into stillbirths guides high-quality peri natal mortality audit and is an essential aspect of quality patient care (Flenady *et al.*, 2011). Ascertaining the cause of death is quite a challenge. This is because of the sudden nature and complexity in which the death occurs and the difficulty in determining a clear causation (Dudley *et al.*, 2010). Reviewing the value of stillbirth investigations has been extensive (Flenady *et al.*, 2010; Heazell *et al.*, 2012). Women want to understand the cause of their baby's death (Peters *et al.*, 2015) as this may ease guilty feelings and self-blame which influences psychological morbidity (Flenady *et al.*, 2010). Absence of clear stillbirth causes is inadequate to inform future effective prevention strategies and makes counseling of grieving parents impossible. All stillbirths were not investigated as reported by key informants and ascertained by lack of records. This is despite the findings in a systematic review showed that audits conducted at health facilities by health care

providers has the potential of improving the quality of care and preventing future burden of stillbirth (Heazell *et al.*, 2012). This could result to erroneous data on causation and most of the stillbirths being referred to as ‘unexplained’ as reported elsewhere (ANZSA, 2013). Moreover, peri natal postmortem consent is a difficult conversation for both the parents and health professionals partly due to emotional distress, workload, negative publicity, religion and cultural issues (Heazell *et al.*, 2012).

Another pregnancy is not protective against psychological morbidity although 50 to 80 per cent of women who experience stillbirth are told to conceive again (Nynas *et al.*, 2015). There is evidence from research that previous stillbirth loss could be a risk factor for depression and anxiety in subsequent pregnancies (Blackmore *et al.*, 2011; Giannandrea *et al.*, 2013). Distress before next pregnancy should be addressed. Untreated depression or anxiety could affect the outcomes of the next pregnancy, birth and infant (Bhat & Byatt, 2016). Subsequent successful pregnancy does not obviate the risk of continuing psychopathology. Women were told to conceive immediately.

The consequences of stillbirth were not exclusively negative. Some participants reported becoming closer with their husbands and similar findings have been reported in other studies (Avelin *et al.*, 2013). Parental pride was reported by some parents after viewing their babies. Others reported a realization that human being is due to social support. The integration of the death and loss into the woman’s continuing life represents a profound struggle and a transformation. Previous studies found that stillbirth can motivate women to lobby for healthcare improvement for them and other women (Burden *et al.*, 2016).

Women appreciated the calls from the health care providers to find out on their progress while at home and this has also being reported elsewhere (Aiyelaagbe *et al.*, 2017; Bhat & Byatt, 2016). They felt someone cared and were not isolated and forgotten. Women need hospital contacts in case of any concern while at home.

The professional impact of stillbirth was characterized by fear of litigation and disciplinary action. Key informants expressed similar concerns. Key informants reported need for training of maternity staff on offering support to women after stillbirth. They felt inadequate to handle themselves and the women too. A Similar study reported the inadequacy on maternity staff (Kelley & Trinidad, 2012). Psychological impact of stillbirth on health providers is mostly reported as somatic, including trauma, diminished emotional availability, stress, and affective states such as guilt, anger, blame, anxiety and sadness (Kelley & Trinidad, 2012,; Nuzum *et al.*, 2014).

5.1.6 Coping Strategies Employed by Women after Stillbirth

Women employ various coping strategies after stillbirth. In this study, women reported various coping strategies (figure 4.3). Similar findings of coping strategies have being reported in Ugandan study (Kiguli *et al.*, 2015). Bereaved women were found to find comfort at time of grief from existing siblings and partners (Burden *et al.*, 2016). In a similar study, participants reported seeking help from counselors to cope with the loss (Cacciatore *et al.*, 2014). Care of women after stillbirth entails holistic support from both the partner, family, society and health care providers (Van & Meleis, 2010).

5.2 Conclusions

The routine care and treatment offered to women after stillbirth do not take care of the emotional and psychological reactions after loss.

Stillbirth is a risk factor for psychological morbidity that include; depression, anxiety, post traumatic stress disorder and co-morbidity and therefore women need support and care to mitigate the effect of the stillbirth loss.

Women employ various coping strategies after stillbirth and there they need to be guided on positive coping strategies.

Counseling can mitigate psychological morbidity among women after stillbirth. Various socio-cultural and health system factors influence psychological morbidity after stillbirth loss even after counseling.

Caring for families during still birth imposes a lot of personal and professional burden to the staff. They too need support. The obstetrician or midwife caring for the woman after stillbirth loss may be going through his or her own grieving process over the loss of the baby, and this may make it difficult to offer the support that the grieving family needs.

Holistic approach is needed when dealing with stillbirths. On-going support is essential from the partner, family, community, the church and the health care providers to mitigate influence of socio-cultural and health system factors. The social environment is critical.

The study findings rejected the hypotheses that: Counseling influenced psychological morbidity after stillbirth, socio-cultural factors and health system factors influence psychological morbidity after stillbirth loss despite counseling. This implies that

counseling should be adopted and integrated to care of women after stillbirth and socio-cultural environment need to be addressed.

5.3 Recommendations for Programme and Policy

1. The county health management team should ensure that the care of women after stillbirth includes all the seven components of care.
2. The county health management team should ensure that counseling is integrated into care of women after stillbirth to mitigate psychological morbidity.
3. The county health management team should put interventions in place to demystify myths and beliefs about stillbirths.
4. The county health management team should advocate for holistic support of women after stillbirth from the family, community and health care providers to mitigate psychological morbidity.
5. The county health management team should offer professional and psychological support to health care providers working in the obstetric department. This will enable them develop their own skills to offer care and cope with their own emotional reactions.
6. The county health management team should evaluate the health system factors in the referral hospitals which could be compromising care offered to women after stillbirth.

5.4 Recommendations for Further Study

1. There is need for a study on psychological morbidity on partner, siblings and other family members following stillbirth since this study focused only on women.
2. There is need for studies on effect of stillbirth on subsequent pregnancies.

REFERENCES

- Afshan K., Narjis G. & Qayyum M. (2019).** Risk factors and causes of stillbirths among pregnant women in Pakistan. *Afri Health Sci.* 2019; 19(1). 1507-1516. <https://dx.doi.org/10.4314/ahs.v19i1.24> accessed 4th October 2019
- Aiyelaagbe E., Scott R.E., Holmes V., Lane E. & Heazell A.E. (2017).** Assessing the quality of bereavement care after peri natal death: development and piloting of a questionnaire to assess parents' experiences, *Journal of Obstetrics and Gynaecology*, 37:7, 931-936, DOI: 10.1080/01443615.2017.1316710 accessed 3rd September 2018
- American Psychiatric Association. (2013).** Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC: American Psychiatric Association.
- Aminu M., Unkels R., Mdegela M., Utz B., Adaji S., Den Broke N. (2014).** Causes of and factors associated with stillbirth in low-and middle-income countries: a systematic literature review. *An International Journal of Obstetrics & Gynaecology*. 2014 Sep 18; 121: 141±153.
- ANZSA (2013).** Investigating the causes of stillbirth; a prospective cohort study examining use and effectiveness of a comprehensive investigation protocol. The Australian and New Zealand Stillbirth Alliance (ANZSA) Research Consortium. Version 2.1
- Avachat S.S., Phalke D.B. & Phalke V.D. (2015).** Risk factors associated with stillbirths in the rural area of Western Maharashtra, India. *Arch Med Health Sci*;3:56-9.
- Avelin P., Rådestad I. & Säflund K., Wredling R. & Erlandsson K. (2013).** Parental grief and relationships after the loss of a stillborn baby. *Midwifery*; 29: 668–73.
- Ayers S., Bond R., Bertullies S. & Wijma K. (2016).** The aetiology of post-traumatic stress following childbirth: a meta-analysis and theoretical framework. *Psychological Medicine*; 46, 1121–1134. © Cambridge University Press
doi:10.1017/S0033291715002706 accessed November 2017
- Bhat A. & Byatt N. (2016).** Infertility and Peri natal Loss: When the Bough Breaks. *Curr Psychiatry Rep*; 18(3): 31. doi:10.1007/s11920-016-0663-8.
- Bhutta Z.A., Das J.K., Bahl R., Lawn J.E., Salam R.A., Paul V.K., Sankar J.M, Blencowe H., Rizvi A., Chou V.B, Walker N. (2014).** For The Lancet Newborn Interventions Review Group and The Lancet Every Newborn Study Group. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? *Lancet*; 384(9940):347–70. doi:10.1016/S0140–6736(14)60792–3 accessed 10th February 2016
- Blackmore E.R., Côté-Arsenault D., Tang W., Glover V., Evans J. & Golding J. (2011).** Previous prenatal loss as a predictor of perinatal depression and anxiety. *Br J Psychiatry*; 198:373–8.

Blencowe H, Cousens S, Jassir FB, Say L, Chou D, Mathers C Hogan D. Shiekh S., Qureshi, Z.U You Q.& Joy E Lawn J.E, (2016). For the Lancet steering group. National, regional and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis. *Lancet Glob Health*; 4(2):e98–e108. doi:10.1016/S2214–109X(15)00275–2 accessed 4th June 2019

Boyce P., Stubbs J. & Todd A. (1993). The Edinburgh Postnatal Depression Scale: Validation for an Australian sample. *Aust. New Zealand J. Psychiatry* 27, 472–476.

Burden C., Bradley S., Storey C., Ellis A., Alexander E. P., Heazell A., Downe S., Cacciatore J. and Siassakos D. (2016). From grief, guilt pain and stigma to hope and pride – a systematic review and meta analysis of mixed-method research of the psychosocial impact of stillbirth. *BMC Pregnancy and Childbirth*;16:9 DOI 10.1186/s12884-016-0800-8 accessed July 2018.

Butler R.J. & Neimeyer R.A. (2012). Constructions of death and loss: a personal and professional evolution. Reflections in Personal Construct Theory. Chichester, West Sussex, UK: John Wiley & Sons Ltd.

Byrom S. & Downe S. (2015). The roar behind the silence: why kindness, compassion and respect matter in maternity care. London: Pinter & Martin Ltd.

Cacciatore J. (2013). Psychological effects of stillbirth. *Seminars in Fetal and Neonatal Medicine*, 18(2), 76-82. doi: <http://dx.doi.org/10.1016/j.siny.2012.09.001> accessed January 2016

Cacciatore J. (2010). The unique experiences of women and their families after the death of a baby. *Soc Work Health Care*; 49:134–48.

Cacciatore J., Lacasse, J.R., Lietz C.A. & McPherson J. (2014). A parent’s TEARS: Primary results from the Traumatic Experiences and Resiliency Study (TEARS). *Omega: The Journal of Death and Dying*, 68(3), 183-205. doi:10.2190/OM.68.3.a accessed 4th February 2016

Chan Y.H. (2003). Randomised Controlled Trials (RCTs) – Sample Size: The Magic Number? *Singapore Med J Vol 44(4): 172-174.*

Chung M.C. & Reed J. (2017). Posttraumatic Stress Disorder Following Stillbirth: Trauma Characteristics, Locus of Control, Posttraumatic Cognitions *Psychiatry Q* 88:307–321 doi 10.1007/s11126-016-9446-y accessed 4th September 2018

Chuwa FS, Mwanamsangu AH, Brown BG, Msuya SE, Senkoro EE, Mnali OP, Mazuguni F. & Mahande M.J. (2017). Maternal and fetal risk factors for stillbirth in

Northern Tanzania: A registry-based retrospective cohort study. PLoS ONE 12(8): e0182250. <https://doi.org/10.1371/journal.pone.0182250> accessed 3rd August 2019

Clauss D.K. (2009). Psychological Distress following Miscarriage and Stillbirth An examination of Grief, Depression and Anxiety in Relation to Gestational Length, Women's Attributions, Perception of Care and Provision of Information (Doctoral dissertation, Drexel University). Available from: <http://idea.library.drexel.edu/handle/1860/3070> accessed 5th August 2018

Cockerill R., Whitworth M.K. & Heazell A.E. (2012). Do medical certificates of stillbirth provide accurate and useful information regarding the cause of death? *Paediatr Perinat Epidemiol*;26:117–23.

Cowchock F.S., Ellestad S.E., Meador K.G., Koenig H.G., Hooten E.G. & Swamy G.K. (2011). Religiosity is an Important Part of Coping with Grief in Pregnancy after a Traumatic Second Trimester *J Relig Health* 50:901-910 DOI 10.1007/s10943-011-9528-y accessed 8th August 2018

Cox J.L., Holden J.M. & Sagovsky R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*; 150: 782-786.

Crawley R., Lomax S. & Ayers S. (2013). Recovering from stillbirth: the effects of making and sharing memories on maternal mental health, *Journal of Reproductive and Infant Psychology*, 31:2, 195-207, DOI: 10.1080/02646838.2013.795216 accessed 5th August 2018

Creamer M., Bell R. & Failla S. (2003). Psychometric properties of the Impact of Event Scale—Revised. *Behaviour Research and Therapy* Volume 41, Issue 12, Pages 1489-1496 <https://doi.org/10.1016/j.brat.2003.07.010> accessed 2nd January 2016

Cunningham K.A. (2012). Holding a stillborn baby: does the existing evidence help us provide guidance? *The Medical journal of Australia*, 196(9), 558.

Daugirdaite V., Van den Akker O. & Purewal S. (2015). Posttraumatic stress and posttraumatic stress disorder after termination of pregnancy and reproductive loss: a systematic review. *J Pregnancy*; 2015:646345. (PubMed: 25734016) accessed 2nd August 2018

Der E.M., Sutta F., Azongo T.B & Kubio C. (2016). Stillbirths at the West Gonja hospital in northern Ghana. *Journal of Medical and Biomedical Sciences* (2016) 5(1): 1-7

Derogatis L.R., Lipman R.S., Rickels K., Uhlenluth E.H. & Covi L (1974). The Hopkins Symptoms Checklist (HSCL): A self report symptom inventory. *Behavioral Science*, 19;1-15.

American Psychiatric Association (2013). Diagnostic and statistical manual of mental disorders fifth edition (DSM-5®)

Downe S., Schmidt E., Kingdon C. & Heazell A.E.P (2013). Bereaved parents' experience of stillbirth in UK hospitals: a qualitative interview study. *BMJ open*, 3(2).

Elmir R., Schmied V., Wilkes L. & Jackson D. (2010). Women's perceptions and experiences of a traumatic birth: A meta-ethnography. *Journal of Advanced Nursing*, 66(10), 2

Erlandsson K., Warland J., Cacciatore J. & Rådestad I. (2013). Seeing and holding a stillborn baby: women's feelings in relation to how their babies were presented to them after birth—findings from an online questionnaire. *Midwifery*;29: 246–50.

Evans J., Melotti R., Heron J., Ramchandani P., Wiles N. & Murray L. (2012). The timing of maternal depressive symptoms and child cognitive development: a longitudinal study. *Journal of child psychology and psychiatry, and allied disciplines*; 53(6): 632-40.

Fisher J., Cabral de Mello M., Patel V., Rahman A., Tran T., Holton S. & Holmes W. (2011). Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. *Bulletin of the World Health Organization* 90, 139G–149G.

Flenady V., Middleton P., Smith G.C., Duke W., Erwich J.J., Khong T.Y., Neilson J., Ezzati M., Koopmans L., Ellwood D., Fretts R. & Frøen J.F. (2011). For The Lancet's Stillbirths Series steering committee. Stillbirths: the way forward in high-income countries *Lancet*; 377: 1703–17 DOI:10.1016/S0140-6736(11)60064-0 accessed 2nd January 2016

Flenady V., Silver R.M., Smith, G.C., Boyle F.M., Lawn J.E., Blencowe H., Heazell A.E., Storey M., & Goldenberg R.L. (2016). Lancet ending preventable stillbirths study group & lancet stillbirths in high-income countries investigator group. Stillbirths: recall to action in high-income countries. *Lancet*; 387(10019), 691-702. [https://doi.org/10.1016/S0140-6736\(15\)01020-X](https://doi.org/10.1016/S0140-6736(15)01020-X) accessed 19th January 2019

Frøen J.F., Cacciatore J., McClure E.M., Kuti O., Jokhio A.H. & Islam M. (2011). Stillbirths: why they matter. *Lancet*;377(9774):1353–66.

Frøen J.F., Friberg I.K, Lawn J.E., Bhutta Z.A., Pattinson R.C., Flenady V. & Goldenberg R.L (2016). Lancet ending preventable stillbirths' series study group. Stillbirths: Progress and unfinished business. *Lancet* 387(10018) DOI: 10.1016/S0140-6736(15)00818-1 accessed 20th January 2016

Furuta M., Sandall J., Cooper D. & Bick D. (2014). The relationship between severe maternal morbidity and psychological health symptoms at 6–8 weeks postpartum: a

prospective cohort study in one English maternity unit. *BMC Pregnancy and Childbirth* 14, 133.

Geelhoed D., Stokx J., Mariano X., Lázaro C.M., Roelens K. (2015). Risk factors for stillbirths in Tete, Mozambique *International Journal of Gynecology and Obstetrics* 130 (2015) 148–152.

Ghimire PR, Agho KE, Renzaho A, Christou A, Nisha MK, Dibley M. & Raynes-Greenow C. (2017). Socio-economic predictors of stillbirths in Nepal (2001-2011). *PLoS ONE* 12(7): e0181332. <https://doi.org/10.1371/journal.pone.0181332> accessed 4th August 2019

Giannandrea SAM, Cerulli C., Anson E. & Chaudron L.H. (2013). Increased risk for postpartum psychiatric disorders among women with past pregnancy loss. *J Women's Health*; 22(9):760–768.

Gold K.J., Leon I., Boggs M.E. & Sen A. (2015). Depression and posttraumatic stress symptoms after perinatal loss in a population-based sample. *J Women's Health* Volume 00, Number 0 doi: [10.1089/jwh.2015.5284](https://doi.org/10.1089/jwh.2015.5284) accessed 13th October 2019

Gold, K.J., Sen A. & Hayward R.A. (2010). Marriage and cohabitation outcomes after pregnancy loss. *Pediatrics*;125(5):e1202–e1207 accessed 7th August 2018

Goldenberg RL, Saleem S, Pasha O, Harrison MS, McClure EM. (2016). Reducing stillbirths in low-income countries. *Acta Obstet Gynecol Scand* 95:135–43.

Gourounti K., Anagnostopoulos F. & Lykeridou K. (2013). Coping strategies as psychological risk factor for antenatal anxiety, worries, and depression among Greek women. *Arch Womens Mental Health*; 16 (5):353-61. doi: 10.1007/s00737-013-0338-y accessed 3rd July 2019

Gravensteen I.K., Helgadottir L.B., Jacobsen E.M., Radestad I., Sandset P.M. & Ekeberg O. (2013). Women's experiences in relation to stillbirth and risk factors for long-term post traumatic stress symptoms: a retrospective study. *BMJ Open*; <http://dx.doi.org/10.1136/bmjopen> accessed 7th August 2018

Gravensteen I.K., Helgadottir L.B., Jacobsen E.M., Sandset P.M. & Ekeberg Ø. (2012). Long-term impact of intrauterine fetal death on quality of life and depression: a case-control study. *BMC Pregnancy and Childbirth*; 12:43.

Haws RA, Mashasi I, Mrisho M, Schellenberg JA, Darmstadt GL & Winch PJ (2010). –These are not good things for other people to know!: how rural Tanzanian women's experiences of pregnancy loss and early neonatal death may impact survey data quality. *Social Science Medicine*;71:1764–72.

Heazell A.E., McLaughlin M.J., Schmidt E.B., Cox P., Flenady V., Khong T.Y. & Downe S. (2012). A difficult conversation? The views and experiences of parents and professionals on the consent process for perinatal postmortem after stillbirth. *BJOG: An International Journal of Obstetrics & Gynaecology* 119:10.

Heazell, A.E., Siassakos, D., Blencowe, H., Burden, C., Bhutta, Z. A., Cacciatore, J., Dang, N. & Flenady V (2016). Lancet ending preventable stillbirth series study group & Lancet ending preventable stillbirths investigator group. Stillbirths: economic and psychosocial consequences. *Lancet*.

Howard L.M., Molyneaux E., Dennis C.L., Rochat T., Stein A. & Milgrom J. (2014). Non-psychotic mental disorders in the peri natal period. *Lancet*; 384(9956):1775–88.

Huberty J., Leiferman J. A., Gold, K. J., Rowedder, L., Cacciatore, J., & McClain, D. B. (2014). Physical activity and depressive symptoms after stillbirth: informing future interventions. *BMC Pregnancy and Childbirth*, 14(1),

IERG (2015). Every woman, every child, every adolescent: achievements and prospects: the final report of the independent Expert Review Group on Information and Accountability for Women's and Children's health. Geneva, Switzerland: World Health Organization.

James S. (2015). Women's experiences of symptoms of posttraumatic stress disorder (PTSD) after traumatic childbirth: a review and critical appraisal. *Archives of Women's Mental Health*, 18(6), 761–771.

Kelley M.C. & Trinidad S.B. (2012). Silent loss and the clinical encounter: Parents' and physicians' experiences of stillbirth—a qualitative analysis. *BMC pregnancy and childbirth*, 12(1), 137.

Kersting A., Dölemeyer R., Steinig J., Walter F., Kroker K., Baust K., & Wagner B. (2013). Brief internet-based intervention reduces posttraumatic stress and prolonged grief in parents after the loss of a child during pregnancy: a randomized controlled trial. *Psychotherapy and Psychosomatics*, 82(6), 372–381

Kiguli J, Namusoko S, Kerber J, Peterson S & Waiswa P (2015). Weeping in silence: community experiences of stillbirths in rural eastern Uganda, *Global Health Action*, 8:1, 24011, doi: 10.3402/gha.v8.24011 accessed August 2018

Kingdon C, Givens JL, O'Donnell E & Turner M. (2015). Seeing and holding baby: systematic review of clinical management and parental outcomes after stillbirth. *Birth* 42:206–218.

KNBS (2015). *Kenya health and demographic survey 2014*. Nairobi, Kenya: KNBS

Koopmans L., Wilson, T., Cacciatore J., & Flenady V (2013). Support for women, fathers and families after perinatal death. *Cochrane database of systematic reviews (Online)*, 6, CD000452.

Kothari C.R., (2010). Research Methodology: Methods and Technique, New Delhi: New Age International Publishers

Kujala S., Waiswa P., Kadobera D., Akuze J., Pariyo G. & Hanson C. (2017). Trends and risk factors of stillbirths and neonatal deaths in Eastern Uganda (1982–2011): a cross-sectional, population based Study. *Tropical Medicine and International Health* volume 22 no 1 pp 63–73: doi:10.1111/tmi.12807 accessed 3rd October 2019

Kuti O., Awowole I. & Okunola T. (2017). Audit of stillbirths in a Nigerian teaching hospital. *Trop J Obstet Gynaecol*; 34:188-94.

Lawn JE, Blencowe H, Waiswa PS, Flenady V, Frøen F & Qureshi Z (2016). Stillbirths: data for accelerating progress for 2030. For The Lancet Ending Preventable Stillbirth Series study group, The Lancet press. Laing IA. Clinical aspects of neonatal death and autopsy. *Semin Neonatal*; 9: 247–54.

Lawn J.E. & Kinney M. (2011). Stillbirth: an executive summary for the Lancet's series. *Lancet*, 1–8.

Lee AC, Mullany LC, Tielsch JM, Katz J, Khatry SK. & Leclercq SC. (2011). Community-based stillbirth rates and risk factors in rural Sarlahi, Nepal. *Int J Gynaecol Obstet* 2011;113:199–204.

Lwarie TA, Hofmeyr CJ, Jager M & Berk M (1998). Validation of the Edinburgh Postnatal depression Scale on a cohort of South African Women. *South African Medical Journal*; 88: 1340 – 1344.

Malm MC, Radestad I, Erlandsson K & Lindgren H. (2011). Waiting in no-man's-land – women's experiences before the induction of labour after their baby has died in utero. *Sex Reprod Health*; 2(2):51–5.

McClure E.M., Garces A., Saleem S., Moore J.L., Bose C.L., Esamai F., Goudar S.S., Chomba E., Mwenechanya M., Pasha O., Tshefu A., Patel A., Dhaded S.M., Tenge C., Marete I., Bauserman M., Sunder S., Kodkany B.S., Carlo W.A., Derman R.J., Hibberd P.L., Liechty E.A., Hambidge K.M., Krebs N.F., Koso-Thomas M., Miodovnik M., Wallace D.D. & Goldenberg R.L. (2018). Global Network for Women's and Children's Health Research: probable causes of stillbirth in low- and middle-income countries using a prospectively defined classification system. *BJOG*; 125:131–138.

Mills T.A., Ricklesford C., Cooke A., Heazell A.E.P., Whitworth M., & Lavender T. (2014). Parents' experiences and expectations of care in pregnancy after stillbirth or

neonatal death: a metanalysis. *BJOG: An International Journal of Obstetrics & Gynaecology*.

Nankabirwa V, Turnwine JK, Tylleskær T, Nankunda J. & Sommerfelt H.(2011). Perinatal mortality in eastern Uganda: a community based prospective cohort study. *PLoS ONE* 2011;6:e19674.

Navidian A., Saravani Z. & Shakiba M. (2017). Impact of Psychological Grief counseling on the Severity of Post-Traumatic Stress Symptoms in Mothers after Stillbirths, *Issues in Mental Health Nursing*, DOI: 10.1080/01612840.2017.1315623 accessed 2nd July 2018

NICE (2014). Antenatal and postnatal mental health: clinical management and service guidance. London: NICE;

Ntuli S.T. & Malangu N. (2012). An investigation of the stillbirths at a tertiary hospital in Limpopo province of South Africa. *Glob J Health Sci* 2012;4:141–7.

Nynas J, Narang P, Kolikonda MK & Lippmann S (2015). Depression and anxiety following early pregnancy loss: recommendations for primary care providers. *The Primary Care Companion for CNS Disorders*; 17(1)

Nuzum D, Meaney S & O'Donoghue K (2014). The impact of stillbirth on consultant obstetrician gynaecologists: a qualitative study. *BJOG*; 121: 1020–28.

O'Connell O, Meaney S & O'Donoghue K. (2016). Caring for parents at the time of stillbirth: How can we do better? *Women Birth*; <http://dx.doi.org/10.1016/j.wombi.2016.01.003> accessed 3rd August 2018

Ogwulu C, Louise J. Jackson¹, Alexander E.P. Heazell & Tracy E. R (2015). Exploring the intangible economic costs of stillbirth. *BMC Pregnancy and Childbirth*; 15:188 DOI 10.1186/s12884-015-0617-x accessed 2nd August 2018

Olagbuji B.N., Ezeanochie M.C., Igbaruma S., Okoigi S.O & Ande A.B. (2012). Stillbirth in cases of severe acute maternal morbidity. *Int J Gynaecol Obstet* 119:53–6.

Okeudo C., Ezem B. & Ojiyi E. (2013). Stillbirth Rate in a Teaching Hospital in South. East-ern Nigeria: A Silent Tragedy. *Annals of medical and health sciences research* 2: 176-179.

Parsons CE, Young KS, Rochat TJ, Kringelbach ML & Stein A (2012). Postnatal depression and its effects on child development: a review of evidence from low and middle-income countries. *Br Med Bull*; 101(1):57–79.

Peters M.D.J., Lisy K., Riitano D., Jordan Z. & Aromataris E. (2015). Caring for families experiencing stillbirth: Evidence-based guidance for maternity care providers;

Elsevier Women and Birth; 28: 272–278 <http://dx.doi.org/10.1016/j.wombi.2015.07.003> accessed 4th August 2018

Pullen S., Golden M.A. & Cacciatore J. (2012). I'll never forget those cold words as long as I live“: parent perceptions of death notification for stillbirth. *J Soc Work End Life Palliat Care*; 8 (4):339–55.

Radestad I., Malm M.C., Lindgren H., Pettersson K. & Larsson L.L. (2013). Being alone in silence – women's experiences upon confirmation of their baby's death in utero. *Midwifery*; 30(March (3)):e91–5.<http://dx.doi.org/10.1016/j.midw.10.021> accessed January 2016.

Redshaw M & Henderson J. (2015). Safely delivered: a national survey of women's experience of maternity care. Oxford: National Perinatal Epidemiology Unit.

Redshaw M, Rowe R. & Henderson J. (2014). Listening to parents: After stillbirth or the death of their baby after birth. Oxford: Policy Research Unit in Maternal Health and Care, National Perinatal Epidemiology Unit.

Reinebrant HE, Leisher SH, Coory M, Henry S, Wojcieszek AM, Gardener G, Lourie R, Ellwood D, Teoh Z, Allanson E, Blencowe H, Draper ES, Erwich JJ, Frøen JF, Gardosi J, Gold K, Gordijn S, Gordon A, Heazell AEP, Khong TY, Korteweg F, Lawn JE, McClure EM, Oats J, Pattinson R, Pettersson K, Siassakos D, Silver RM, Smith G, Tuncalp O, Flenady V (2018). Making stillbirths visible: a systematic review of globally reported causes of stillbirth *BJOG*;125: 212–224.

Roy C. & Andrews H. A. (1999). The Roy Adaptation Model (2nd edition). Connecticut: Appleton & Lange.

Ryninks K, Roberts-Collins C, McKenzie-McHarg K & Horsch A. (2014). Women's experience of their contact with their stillborn infant: an interpretative phenomenological analysis. *BMC Pregnancy Childbirth*;14:203.

Samuelson K.A.M., Lundberg D., & Fridlund B. (2007). Stressful memories and psychological distress in adult mechanically ventilated intensive care patients- a 2-month follow-up study. *Acta Anaesthesiologica Scandinavica*, 51, 671-678.

Sandanger I, Moum T, Ingebrigtsen G, Dalgard O.S, Sorensen T & Bruusgard D. (1998). Concordance between symptom screening and diagnostic procedure: *Social Psychiatry and Psychiatric Epidemiology*, 33, 345-354

Shreffler K., Hill T. & Cacciatore J. (2012). The impact of infertility, miscarriage, stillbirth and child death on marital dissolution. *Journal of Divorce and Remarriage*; 53(2): 91–107.

- Simpson C., Lee P. & Lionel J. (2015).** The Effect of Bereavement Counseling On Women with Psychological Problems Associated with Late Pregnancy Loss. *Journal of Asian Midwives*; 2 (2):5–20
- Stroebe M. & Schut H. (2010).** The dual process model of coping with bereavement: A decade on. *Omega* 2010;61:273–289.
- Stroebe M., Boemer K. & Schut H. (2017).** Encyclopedia of Personality and Individual Differences, Springer International Publishing AG, V. Zeigler-Hill, T.K. Shackelford (eds.), DOI 10.1007/978-3-319-28099-8_520-1 accessed 16th October 2019
- Sullivan, G. M., & Feinn R. (2012).** Using Effect Size—or Why the P Value Is Not Enough. *Journal of Graduate Medical Education*, 4(3), 279-282.
- Sutan R & Miskam HM. (2012).** Psychosocial impact of perinatal loss among Muslim women. *BMC Women's Health*; 18:12-15. doi 10.1186/1472-6874-12-15. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22708998> accessed 5th August 2018
- Tuncalp P, Were WM, MacLennan C, Oladapo OT, Bahl R, Daelmans B & Temmerman M. (2015).** Quality of care for pregnant women and newborns—the WHO vision. *BJOG*; 122: 1045–49.
- UNGA (2015).** UNGA resolution A/69/L.85: draft outcome document of the United Nations summit for the adoption of the post-2015 development agenda. New York: United Nations General Assembly.
- Van P & Meleis A (2010).** Factors related to dimensions of grief intensity among African-American women after pregnancy loss. *J Natl Black Nurses Assoc*; 21:1–8.
- Warland J. & Davis D.L. (2011).** Caring for families experiencing stillbirth: A unified position statement on contact with the baby. An international collaboration. Miss Foundation
- Webster ML, Thompson JMD & Mitchell EA. (1994).** Postnatal depression in a community cohort. *Aust NZ J Psychiatry*; 28: 42 - 49.
- Weiss D.S. (2004).** The Impact of Event Scale-Revised. In J.P. Wilson & T.M. Keane (Eds.), *Assessing Psychological Trauma and PTSD* (2nd ed., pp. 168-189). New York: Guilford.
- Weiten W. & Lloyd M.A (2008).** *Psychology Applied to Modern Life (9th ed.)*. Wadsworth Cengage Learning. ISBN 0-495-55339-5. Accessed 16th Aug 2016.
- WHO (2014).** Neonatal and peri natal country, regional and global estimates mortality, 2013. http://whqlibdoc.who.int/publications/2007/9789241596145_eng.pdf. Accessed 10th August 2015.

WHO (2015). International Classification of Diseases 10th revision (ICD-10).
<http://www.who.int/classifications/icd/en/> (accessed 16th October, 2019)

WHO (2016). The WHO application of ICD-10 to deaths during the perinatal period: ICD-PM. Geneva: [<http://www.who.int/reproductivehealth/publications/monitoring/icd-10-perinatal-deaths/en/>] accessed 19th October 2019

Yamazaki A. (2010). Living with stillborn babies as family members: Japanese women who experienced intrauterine fetal death after 28 weeks gestation. *Health Care Women Int*; 31(10):921–37

APPENDICES

Appendix 1: Consent Form

My name is Caroline Mumbe Kanini. I am a PhD student from Kenyatta University. I am conducting a study on –Use of Counseling in Mitigating psychological Morbidity after Stillbirth among Women in Kitui and Machakos Counties, Kenya. The information will be used by the county and Ministry of Health.

Procedures to be Followed

Participation in this study will require that you fill in a questionnaire. You have the right to refuse participation in this study. Please remember that participation in this study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time.

Risks

There are no risks whatsoever for participating in this study.

Benefits

If you participate in this study you will help the Ministry of Health to know how to address the care of women after stillbirth using counseling in Kitui and Machakos Counties, Kenya.

Confidentiality

You will fill the questionnaire on your own and your name will not be recorded on the questionnaire. The questionnaire will also be kept safe under lock and key in Kenyatta University. The information will not be available to any other person apart from the researcher. Any information gathered will be kept private and confidential.

Contact Information

If you have any questions you may contact Ms. Caroline Kanini on 0722299493, Prof. M. Keraka on 0721817521 Or Dr. A. Wanyoro on 0722747903 or the Kenyatta University Ethical Review Committee Secretariat on kuerc@ku.ac.ke.

Participant’s Statement

The above information on my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study will be entirely voluntary. I understand that my records will be kept private and that I can stop participation at any time.

Name of the participant

Signature

Date

Investigators Statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the benefits involved.

Name of the interviewer: _____

Interviewer signature

Date

Appendix 2: Research Questionnaire

Interviewer's name ----- Date of first interview -----/----/---

Time interview started-----Time interview ended-----

Full Names (Three) -----

Family name -----

Phone Number

Location ----- Nearest primary school-----

A) Socio- Demographic Data

{Interview all women of reproductive age within that health facility who have had stillbirth with no life twin and have given consent. Inform them that they will be followed up in the subsequent visits. Each should fill a separate questionnaire}

1. What is your age?-----What is the date of birth of the respondent -----/----/---
2. What is the highest level of school attended?
 - a. Primary ()
 - b. Secondary ()
 - c. College/University ()
 - d. Student ()
3. What religion do you belong to? 1 catholic (), 2 protestant (),
3 = Muslim (), 4. Others-----
4. What is your marital status? a. married () b. Widowed ()
c. Divorced/Separated/Deserted () d. Single ()
5. Type of union (a) Monogamy () b) Polygamy () (c) Inheritance ()
6. If married what was the date of marriage -----/----/----- How many years of marriage? -----

1. Is your husband usual resident or works away from home?
 - a. Usual resident () b. Works away from home () c. Not married ()
2. What is the highest level of education for your partner?
 - a. Primary () b. Secondary ()
 - c. College/University () d. Student ()

B. Socio-Economic Data

3. What is your occupation? a. Formally Employed () b. Peasant farmer ()
 - c. Housewife () d. Unemployed () e. Student () f. Business lady ()
4. What is the occupation of your partner?
 - a. Employed () b. Peasant farmer () c. Casual laborer ()
 - d. Unemployed () e. Student ()
5. Which is the main source of water? -----
6. Type of housing ----- Permanent () Semi-permanent Temporary ()
7. Human waste disposal----- a. VIP latrine () b. Latrine () c. No latrine ()
8. What is the size of land in hectares-----
9. What is the source? a. Inheritance () b. purchase () c. Donation ()
10. How much is the household income per month in KShs? -----
11. What is the main source of income? -----

C. Reproductive Health Data

12. How many pregnancies have you had?
13. Enumerate outcome of the pregnancies (by year, sex, born alive or dead, alive now or dead and weight at birth)

S/no	Year	Sex	Born alive/dead	weight	Alive now/dead
1					

- 14. How many pregnancies have you lost? -----
- 15. What was the gestation of the previous pregnancy at time of loss
(in weeks): LMP -----
- 16. Number of Ante Natal Care clinics attended in this previous pregnancy -----
- 17. Was the pregnancy planned or unplanned? -----
- 18. Type of birth ---- a. Spontaneous Vaginal () b. Induced vaginal ()
c. Emergency C/S
- 19. When did the baby die? a. Before labour began at home b. During labour at
home () c. During labour in the hospital ()
- 20. What made you to go and seek car at the health facility? -----

D. **Cultural Factors**

- 21. How do you define stillbirth in your community? -----
- 22. Any spiritual support offered? -----
- 23. Were you allowed to a) View the baby?
 - b) Perform farewell rituals on the baby? -----
 - c) Creation of memories (see/hold/ dress/ take photos)? ---
 - d) Time to mourn the baby? -----
 - e) Accord the baby descent burial? -----
- 24. How did your partner respond to the loss?
- 25. Are there any myths, taboos/ beliefs associated with stillbirth in your
community? a. Yes () b. No (). Enumerate them
.....

26. Do you think the death could have been averted? -----

If yes How? -----

27. How did the following react after you had stillbirth?

- a) Husband-----
- b) Woman in-law-----
- c) Co-wife-----
- d) Elder siblings-----
- e) Neighbors -----

28. How did your community treat

- a. Your stillborn baby? i. Mock burial () ii. Buried separately ()
- b. You after the stillbirth?

29. Any Burial/ Ritual practices for stillbirth in the community? -----

E. Health System Factors

30. Where did you deliver?

31. How far is it from home in Kms ? -----

32. Did you have a birth companion during delivery? a) Yes () b) No ()

33. Who assisted you during delivery? Nurse () Doctor () Casual () Relative ()

34. Were you informed on the cause of death? Yes (), No (), Can't remember ()

If yes, what was it?

If no, did you inquire?

35. Any maternal complications during this previous pregnancy? -----

- a. Ante partum.....
- b. Intrapartum
- c. No Complications -----

36. Do you feel your loss was acknowledged? a. No () b. Yes ()
How???.

37. Do you feel your baby was acknowledged? a. No () b. Yes ()
How???.

45. How long did you stay in the hospital? days

46. What negative psychological symptoms did you experience?

- a. Depression () b. Isolation () c. Anxiety () d. Suicidal tendencies ()

47. Who helped you the most/ supported you the most to deal with the loss of your child? a. Spouse () b. Family () c. Health provider () d. Professional bodies/ support groups () e. Church ()

48. Did you experience any difficulties in relationship with the following?

- a. Your partner () b. Family members () c. Other siblings ()

49. How long did it take to clear??

50. Perceived relationship quality a) Improved () b) Deteriorated ()

51. Were the following services offered to you after experiencing stillbirth?

- | | | |
|---|------------|-----------|
| a. Medical care and treatment | a. Yes () | b. No () |
| b. Postnatal care | a. Yes () | b. No () |
| c. Grief reaction | a. Yes () | b. No () |
| d. Creation of memories | a. Yes () | b. No () |
| e. Disposal of the body | a. Yes () | b. No () |
| f. Sources of support | a. Yes () | b. No () |
| g. Need to ascertain the cause of death | a. Yes () | b. No () |

50. What do you feel has most helped you deal with the death of your child? -----

51. What regrets, if any, do you have related to your child's death and the events before or after? -----

52. Has your child's death changed you and if so, in what ways? -----
.....

53. Open:

Please share any other information you believe will be helpful in this research.

.....

E. Edinburgh Postnatal Depression Scale 1 (EPDS)

As you have been pregnant and have recently had a stillborn baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST FEW HOURS**, not just how you feel today.

Here is an example, already completed.

1. I have felt happy:

Yes, all the time

Yes, most of the time: This would mean: -I have felt happy most of the time during the past week. **Please complete the other questions in the same way.**

No, not very often

No, not at all

In the past 7 days:

1. I have been able to laugh and see the funny side of things

As much as I always could

Not quite so much now

Definitely not so much now

Not at all as usual

2. I have looked forward with enjoyment to things

As much as I ever did

Rather less than I used to

Definitely less than I used to

Hardly at all

*3. I have blamed myself unnecessarily when things went wrong

Yes, most of the time

Yes, some of the time

Not very often

No, never

4. I have been anxious or worried for no good reason

- No, not at all
- Hardly ever
- Yes, sometimes
- Yes, very often

*5. I have felt scared or panicky for no very good reason

- Yes, quite a lot
- Yes, sometimes
- No, not much
- No, not at all

*6. Things have been getting on top of me

- Yes, most of the time
- I haven't been able to cope at all
- Yes, sometimes I haven't been coping as well
- No, I have been coping as well as ever

*7. I have been so unhappy that I have had difficulty sleeping

- Yes, most of the time
- Yes, sometimes
- Not very often
- No, not at all

*8. I have felt sad or miserable

- Yes, most of the time
- Yes, quite often
- Not very often
- No, not at all

*9. I have been so unhappy that I have been crying

- Yes, most of the time
- Yes, quite often
- Only occasionally
- No, never

*10. The thought of harming myself has occurred to me

- Yes, quite often
- Sometimes
- Hardly ever
- Never

G. HOPKINS SYMPTOM CHECKLIST 25 (THE FIRST 10 FOR ASSESSING SYMPTOMS OF ANXIETY)

Listed below are some symptoms or problems that people sometimes have after stillbirth. Decide how much the symptoms have distressed you in the last one week including today.

No	Anxiety Symptoms	Not at all	A little	Quite a bit	Extremely
1	suddenly scared for no reason				
2	Feeling fearful				
3	faintness, dizziness, or weakness				
4	nervousness or shakiness inside				
5	heart pounding or racing				
6	trembling				
7	feeling tense or keyed up				
8	headaches				
9	spells of terror or panic				
10	restlessness, can't sit still				

H. IMPACT OF EVENTS SCALE-Revised (IES-R FOR ASSESSING POST TRAUMATIC STRESS DISORDER)

INSTRUCTIONS:

Below is a list of difficulties people sometimes have after stressful life events including stillbirth. Please read each item, and then indicate how distressing each difficulty has been for you DURING THE PAST FEW HOURS with respect to Stillbirth that occurred. How much have you been distressed or bothered by these difficulties?

No	Difficulties Experienced	Not at all	A little bit	Moderately	Quite a bit	Extremely
1	Any reminder brought back					

	feelings about it					
2	I had trouble staying asleep					
3	Other things kept making me think about it					
4	I felt irritable and angry					
5	I avoided letting myself get upset when I thought about it or was reminded of it					
6	I thought about it when I didn't mean to					
7	I felt as if it hadn't happened or wasn't real					
8	I stayed away from reminders of it					
9	Pictures about it popped into my mind.					
10	I was jumpy and easily startled.					
11	I tried not to think about it.					
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them.					
13	My feelings about it were kind of numb.					
14	I found myself acting/feeling like I was back at that time.					
15	I had trouble falling asleep.					
16	I had waves of strong feelings about it.					
17	I tried to remove it from my memory.					
18	I had trouble concentrating.					
19	Reminders of it caused me to have physical reactions, e.g sweating, trouble breathing, nausea, or a pounding heart.					
20	I had dreams about it.					
21	I felt watchful and on-guard.					
22	I tried not to talk about it					

Total IES-R Score: -----

Thank the respondent for her participation. (Check the questionnaire for completeness and accuracy. Store the completed questionnaire in a separate envelope).

Consent Form (Kamba Version)

Nitawa Caroline Mumbe Kanini. Ni mumanyiw'a wa PhD kuma sukulu wakisomo kya yuulu wa Kenyatta. Niika isomo yuulu wa vata wa utao kusia mauwau ma akili itina wa kusyaa nai kwa aka nthini wa county sya kitui na Masaku. Uvoo ula nikwata ukatumika ni county na muvea wa uima was mwii na ndua.

Nzia ila Ngwithia Ndyatia

Uithukuma isesoni yii nukwithia uyendekana ususye ithangu ya makulyo. Wina uthasyo wa kulea kutumika isesoni yii. Lilikana kana kutumika isesoni yii ni kwa ngenda yaku. Wina uthasyo was ukulya mokulyo makonanitye na isomo yii ivinda yonthe. No ueme usungia mokulyo onthe kana ona kma isesoni yii ivinda o yonthe.

Mothuku Kumana na Kwithiwa Isesoni yii

Vai mothuku makonanitwe na kwithiwa isesoni yii.

Moseo Kumana na Iseso yii

Kwa kwiyumya isesoni yii ukethiwa watetheesya muvea was uiiti kumanya undu mekumana na nzia sya kutetheesya aka itina wa kusyaa nai kwa kuneenania namo nthini wa ndua ya Kitui na Masaku, Kenya.

Kimbithi

Ukaususya ithangu yila winewa we mwene. ndwiandika syitwa yaku ithanguni yiu . ithangu yila yususye yikaiwa nesa thiipingie sukuluni wa kisomo kya iulu wa Kinyatta. Ithangu yiu yiikanenganwa kwi mundu ungi ateo nye na uvoo ula wiumana na ithangu yiu ukaiwa kimbithini.

Kwa moukulyo nena na umwe wa aa:

Ms. Caroline Kanini kwa namba ii, 0722299493, Prof. M. Keraka namba 0721817521 kana Dr. A. Wanyoo namba 0722747903 kana Kenyatta University Ethical Review Committee Secretariat kwa kuerc@ku.ac.ke.

Uneeni wa Musesi

Ninaelewa ni uvo iulu wakwa kwithiwa nikonanitwe na kisomo kii. Nininengiwe ivuso ya ukulya maswali na vau nasungiika. Kwakwa kwithiwa in isesoni yii in kwa kwuyumya. Ninieleilwe kana uvo ulu ninengane ukaiwa kimbithini na kana nonieke ivinda oyontho.

Isyitwa ya musesi

Saii matuku

Uneeni wa Mukunikili

Nye ninamuelesya mwiyumya kwa kithyomo kila ekuelawa nzia ila syiutumika kisomoni kii na mauseo makyoo.

Isyitwa ya mwiyumya: _____

Saii matuku

Research Questionnaire (Kamba Version)

Moukulyo ma Kisomo

Isyitwa ----- matuku ma ukunikili ma mbee-----/-----/-

Saa sya kuambiiya moukulyo----- saa sya umina-----

Masyitwa (onthe) -----

Isyitwa yamusyi -----

Utui ----- sukulu ula wi vakuvi-----

Namba ya simu -----Isyitwa ya mutui -----

A) Socio- Demographic Data

{Makulyo kwa aka onthe ma yiika ila yiusyaa nthini was location isu ala masyaite nai. Makaatiwa mavindani matie. Kila umwe aile ususya ithangu yake yi mwanya)

1. Wina myaka yiana?----- matuku ma kusyawa ma ula eusungia mokulyo--
---/---/---
2. Usometa wavika va?
3. Uthaithaa na dini iku? a). catoleki (), b. protestant (), c. Muisilamu (),
d) angi-----
4. Hali yaku ya mutwaano in yiku? a. nimutwae ()b.in ndiwa ()
c. Nitwataanisye() d. ndyaatwawa ()
5. Utwaitwe mutwaano wiku (a) kiveti kimwe () b) iveti mbingu ()
(c) wa utiiwa ()
6. Ethia wi mutwae, watwiwe indii? ----/----/---- Utwaitwe myaka yanata?

7. Muimiu ekalaa kuu kana athukumaa Vaasa na musyi? a)Ekalaa kuu

b) athukumaa Vaasa na musyi c) N/A----

8. Muimiu asomete avika va? -----

B) **Maundu maukonania na usvai**

9. Withiite wi muto mala manata? Elesya onthe (kwa mwaka na mwana ula wasyie etha ai mwitu kana mwanake)

S/no	Year	Sex	Born alive/dead	weight	Currently Alive/dead
1					

10. Ivu ya mwisu yaina ukuu wiana uisyaa (kwa syumwa.....:) nthakame ya mwei ya mwisu -----

11. Waendie kliniki kya aka aito keanata ivinda ya uto wa mwisu? -----

12. Ivu isu ya mwisu niwaivangiite kana ndwai na muvango? -----

13. Wasyaie

14. kwa nzia yiva? ----- a) kawaita b) nekiiwe ndawa ya kuambisya woo
c)kudemwa katai muvango d) kudemwa kwai muvang.

15. Mwana etiwe indii? a) woo utanambia () b) ndiumwa in musyi () c)
ndiumwa in sivalilil

C) Nzia ya Umanthi

16. Uthukumaa wia mwau? a: kuandikwa () b.muimi munini ()

c. kivetu musyi () d. Ndimuandike () e.mumanyiw'a ()

17. Muimiu athukumaa wia mwau? a: Wa kuandikwa

b. Muimi munini c.kivalua d. Timuandike e. Mumanyiw'a

18. Ukwati was nyumbi yenu kwa mwai wianata? -----

19. Ukwati ula munene nyumba kwenyu in mwau? -----

20. Kiwu kya nyumba kwenu kaingi mutavaa va? -----

21. Nyumba yenu in ya uko mwau? ----- a) Permanent () b) Semi-permanent

() c) Temporary ()

22. Kyoo in kya uko mwau----- a) kya kiwu () b) kya yiima () c) tui kyoo()

23. Muunda wenu in wa heka syiana-----

24. Umo wa w'o ni mwau? a) utiwa. () b) kuthoowa() c)

kwailwa ()

D)

Mwiikalile

25. Kusyaa nai kwenu kwiawa in kwika ata? -----

26. Ve utethyo wa kiveva mundu muka unasyaa nai unengawe ? -----

27. Niwitikilaw'a: a) kwika kithio kya kutiiania na mwanae? -----

b) Kumesya kililikano na mwana? -----

c) Ivinda ya kimwiia mwanae? -----

d) Kumuthika kwa nzia ila yaile? -----

28. Munyanyau osie undu wa kukwu kya mwana ata? -----

29. Ve syithio kana miikio ikonanitye na kusyaa nai nduani yenu? A) Yii--b) ekai----- ethia syivo iwete -----

30. Nusyuania kikwu kya mwana in kyai kitonya usiiwa?-----a) Yii-- b)ekai--
Ethia niw'o àta?

31. Anda aa mailye at a itina kuvuna?

- a) Muimiu.....
- b) Inya muimiu.....
- c) Muuwe waku
- d) Akuuu na ainau

E) Health System Factors

32. Wasyaie va?

33. Kuma musyi uthi sivitàli va uasa wiàna ata?

34. Waina mutethesya wa ivinda ya usyaa? a)yii-() b) ekai ()

35. Watetheisywe nuu ivinda ya usyaa? a) Nurse () b) Doctor () c)mundu wa uthambyal () c) mundu tutianie()

36. Niwaeleisywe kila kyatumie mwana aikwa? a)yii (), b) ekai (),

c) ndyamba ulilikana () Ethiwa niwaeleisywe nikyua kyatumie?

.....
Ethia ndweelesywa niwakulilye?

37. Ivinda ya uito wa mviso niwethiwe na thiina on a umwe?

a) Wi muito (kwambatwa ni nthakame, kuuwa, uwau wa sukali, kana thina ungi.).....

b) Ivinda ya usyaa (kuuwa, kwambatwa in nthakame, uwau wa sukali kana thina ungi.)

c) Ndyaina thina -----

38. Utethyo u wakwatie wailye ata?

39. Wewie wasyo waku tawatambuliekie? a) Yii () b) ekai ()

- Ethia ni yii watambulikie ata?
40. Niwewie mwana waku tawatambulikie? a) Yii () b) ekai ()
- Ethia ni yii, atambulikie ata?
41. Nuu ULA waunengie utetyo? a) Nurse, b) Doctor, c) Bereavement midwife
42. Wekalile sivitali mithenya yiana ata?
43. Ni undu wiva utaile wewie kilikoni kyaku?
a) Depression () b) kutiwa nyoka () c) kuuya () d) kusuania kwiyuwa ()
44. Wakwatie utetyo kuma kwi? a) Munyanyau () b) Andu ma musyi ()
c) ndakitali () d) Professional bodies () e) Ikundi sya utetyo ()
f) kanisa ()
45. Niwethiiwe na thina utianioni waku na Andu aa?
a) Munyanyau () b) Andu ma musyi () c) Syana ingi syaku ()
- Thinà usu wekalili ivinda yianata utathela?
46. Utiano Itina wau a) niwailile () b) Niwathukie ()
47. Utethyo ula wakwatie sivitali wailye ata?
48. Ni kyau wiwaa kiutethetye muno itina wa kikwu kya mwana waku?
.....
.....
51. Ve wililo wiwaa ukonanitye na kikwu kya mwana waku na maundu ala maatii?
.....
.....
52. Niwethiie na ualyuku ona umwe Itina was kikwu kya mwana waku? Ethia wivo, in kwa nzia myau?
53. Vatonyeka nengane uvoo ungi ula we ukuikiia kana no withie wa utethyo isesoni yii

E. Edinburgh Postnatal Depression Scale 1 (EPDS)

Undu withite wa maito na o mutuki unasyaa nai no twende kumanya undu ukwiw'a. Vatonyeka nyuva usungio ula uthengeanite na undu withite uyiw'a mithenya muonza mithelu na ti o undu ukwiw'a umunthi.

Ngelekanyo yusuitwe.

1. Nithitwe na utanu

- Yii. ivinda yonthe
- Yii: kaingi. Ii yonanya kana nithitwe na utanu mavinda maingi kyumwani kithelu.
- Ekai, ti kaingi.
- Ekai, Ndina Itanu.

Vatonyeka sungia mokyulyo angi uyatiia nzia isu.

Mithenyani muonza mithelu.

1. Nithitwe ndonya utheka na kwona ngali ya uthekya ya undu.

- Ota vau tene.
- Ti muno kwa oyu.
- Ti muno.
- Tita vau tene.

2. Nithute nina mea ma kutania maundu.

- Ota vau tene
- Ti muno ta vau tene
- Ti ta tene
- Ndina mea on a vanini

*3. Nithitwe ndyilaumu mwene maundu mathi nai.

- Yii kaingi.
- Yii, o kwa imwe
- Ti kaingi
- Ekai. On a imwe

4. Nithitwe ndiuya na kumaka vate kitumi.

Ekai. Ona imwe.

Ekai ndyithitwe

Yii, o kwa imwe

Yii, kaingi

*5. Nithite ndiwa wia na kutelema vate kitumi kyailu.

Yii mala maingi

Yii mavinda amwe

Ekai ti muno

Tiw'o on a imwe

*6. Maundu methite mainduania

Yii, kwa mavinda maingi

Ndyithite ndikwatianisya ona vanini.

Yii, mavinda amwe nithite ndeukwatianisya Mesa.

Ekai, nithite ndikwatianisya nesa.

*7. Nithite ndena utanu kuvikia kuemwa in ukoma.

Yii, mavinda ala maingi

Yii, o kwa imwe

Ekai ti kaingi

Ekai, tiw'o oa vanini.

*8. Nithite ndyiwa kyeve na thina.

Yii, mavinda maingi.

Yii, o muno

Ti kaingi

Tiw'o on a vanini

*9. Nithite ndena utanu kuvikia kuiya

Yii, mavinda maingi

Yii, o muno

Okwaimwe

Tiw'o ona vanini

*10. Kisuanio kya kwiyuwaa in kimbukiite.

Yii, kaingi

- Kwa imwe
 Ti kila vandu
 Ekai ona vanini.

F. HOPKINS SYMPTOM CHECKLIST 25 (THE FIRST 10 FOR ASSESSING SYMPTOMS OF ANXIETY)

Maandikitwe vaa nthi in mawonanio kana mathina methaa anduni kwa mavinda. Amua ni kiasi kyanata kya mo kithite kiikunyamasya kyumwani kimwe kithelu kuvikia umunthi.

Namba	Mawonanio ma kuuya	Ekai	Ovanini	o muno	Muno vyu
1	kutelema ndakika vate kitumi				
2	kwiw'a wia				
3	Kwiw'a nthuua, kuvaluka kana wonzu.				
4	Kulilia kana kutetema nthini.				
5	Ngoo kukuna muno kana kusemba				
6	Kulilia				
7	feeling tense or keyed up				
8	Syalya sya mutwe				
9	Mavinda ma itelema				
10	restlessness, can't sit still				

G. IMPACT OF EVENTS SCALE-Revised (IES-R FOR ASSESSING POST TRAUMATIC STRESS DISORDER)

MAWELESYO: Itheo ve maumu ala mavinda amwe andu methiawa namo itina wa wa ukomana na mawumu thayuni.. Vatonyeka soma kila umwe na uyonania undu withite wina kimako kwaku nthini wa mithenya muonza mithelu wikonana naku kwitha wasyaie nai. Maumu aa methite maikumakya kana kunyamasya muno wana ata?

	Wumu thayuni	Ekai	O vanini	Ti muno	O muno	Muno Vyu
1	Undu wonthe wandililikany'a waetaa mavindiisya makan kau					
2	Nithite na thina waikala too					
3	syindu ingi syitumwa ndisuaania ou.					
4	Nithite ndiwa kyua na mithato.					
5	Nithite ndiisyyia na uthata yila new'a nangilye kana ngililikanua ou.					
6	Ninzuania ou ila ndavangie.					
7	Niwaa ou ta utaithiwa kana ta ute wa w'o.					
8	Ninathukiaa ililkanyo sya undu usu.					
9	Visa sya undu usu syikalaa iyuka akilini yakwa.					
10	New'aa ngitelema laisi.					
11	Natatie ndikasuanie undu usu.					
12	Ninesi kana naina mawoo maingi yiulu wa undu usu no dyalungana namo.					
13	Naimuandu ndyaina mesilya					
14	Niyithia ngika maundu kana ndyiw'a ta no ivindani yiu.					
15	Naina thina wa uthi too					
16	Nana nzeve ngito ya mesilya					
17	Natatie kumya undu usu kililikanoni kyakwa.					
18	Nai na thina was ukwatiiya undu.					
19	Kililikano kya undu usu kyatumaa nditha na mathina ma mwii ta kuutiania. Kuveva na thina, kwimbwa in ngoo kana ngoo kukuna muno					
20	Ninaotaa na undu usu.					
21	I felt watchful and on-guard.					
22	Ninatataa ndikanene uvoo usu.					

Total IES-R Score: -----

H. COMPONENTS OF COUNSEING AFTER STILLBIRTH (Adopted from counseling parents after stillbirth by Grunebauma and Chernenak, 2016)

Itina wa kusyaa nai, niwataiwe ni dakitali uilu was maundu aa?

a) Uiiti.	Yii.	Ekai
b) Usuvio itina was kusyaa.	Yii	Ekai
c) Grief reaction	Yii	Ekai
d) Kusovya ililikano	Yii	Ekai
e) kuveta mwii	Yii	Ekai
f) Kundu kwa utethyo	Yii	Ekai
g) Vata wa kuikiithya kitumi kya kikwu	Yii	Ekai

Tungia ULA wiyumitye muvea nundu was kwiyumya. Sisya ithangu kana niyususye vyu na nes. Ikia ithangu vaasyani yi kivathukanio na ala angi . mutungie muvea nundu wa kwiyumya.

Appendix 3: Key Informant Interview Guide

Identification -----

1. Name of Facility-----
2. Number of health workers in this facility and their cadres-----

3. What is the care offered to women following stillbirth to enable them cope with the loss in this facility?
 - a. Following diagnosis of stillbirth
 - b. During labour
 - c. After delivery
 - d. On discharge
 - e. Follow ups/ return visits
4. Any laid down protocol??

5. How do you inform other staff in the unit on how to communicate to those women? -----
6. How do you assess for possible negative psychological reactions?
7. What are the personal and professional benefits of stillbirths to staff
 - a. Psychological impact
 - b. Professional impact
 - c. Positive effects
 - d. Need for support?
8. Which courses have you been trained in order to handle trauma after stillbirth?
9. Is there a formal mechanism to review all perinatal deaths in this institution where births occur? And if so how often?
10. Any challenges experienced in the care of women after stillbirth?
11. Kindly share any information which can help this study?

Appendix 4: Focused Group Discussion Guide

1. Where do most women deliver in this community?
2. Tell me about stillbirths in this community.
3. Share your experience with your pregnancy and stillbirth baby.
4. How do you handle the foetus following death in the womb?
5. How do you support women after stillbirth?
6. Which support systems exist in this community to support women following stillbirth?
7. How would you like to be supported suppose it was you?
8. Are there are cultural practice, taboos and abuse associated with stillbirths?
9. Kindly share any information that will be useful in this study

Appendix 5: Counseling Sessions

First session (Individual session)

Familiarity, story of mother's grief, the loss experience, grief reaction and understanding grief, post natal care, need to ascertain the cause of death, disposal of body, sharing of memories, sources of support.

Second session (Individual session)

Identifying feelings, reviewing negative thoughts and challenging them, events triggering unpleasant emotions, emotional discharge, helping mothers heal with spiritual words, sources of support,

Third session (Group session)

Familiarity, group rules, story of grief, the loss experience, previous experience, ascertaining cause of death, sharing findings from the patient files on identified gaps, emotional discharge, Demystifying myths, finding meaning in the loss, helping mother heal with spiritual words. Need to move on and prepare for the future.

Appendix 6: Research Approval

 KENYATTA UNIVERSITY GRADUATE SCHOOL	
E-mail: kubps@yahoo.com dean-graduate@ku.ac.ke Website: www.ku.ac.ke	P.O. Box 43844, 00100 NAIROBI, KENYA Tel. 810901 Ext. 57530
Internal Memo	
FROM: Dean, Graduate School	DATE: 12 th November, 2016
TO: Ms. Caroline M. Kanini C/o Department of Population & Reproductive Health KENYATTA UNIVERSITY	REF: Q97/30765/15
SUBJECT: APPROVAL OF RESEARCH PROPOSAL	
<p>This is to inform you that the Graduate School Board at its meeting 10th November, 2016 approved your Ph.D. Research Proposal entitled "Role of Counselling in Enhancing Coping after a Stillbirth among Women in Kitui and Machakos Counties, Kenya." Subject to seeking Ethical Clearance with the Director, Kenyatta University Ethics Review Committee.</p> <p>You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.</p> <p>As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.</p> <p>By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.</p> <p>Thank you,</p> <p style="text-align: center;">  RUBEN MURIUKI FOR: DEAN, GRADUATE SCHOOL </p> <p>c.c. Chairman, Department of Population Reproductive Health Registrar (Academic) Att: Mr. Likam</p> <p>Supervisors:</p> <ol style="list-style-type: none"> 1. Prof. Margaret Keraka C/o Department of Population Reproductive Health KENYATTA UNIVERSITY 2. Dr. Anthony Wanyoro C/o Department of Obstetrics & Gynaecology KENYATTA UNIVERSITY <p>RM/cao</p>	

Appendix 7: Research Authorization Request

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: Q97/30765/15

Date: 12th November, 2016

The Director General,
National Commission for Science, Technology & Innovation,
P.O. Box 30623-00100,
NAIROBI

Dear Sir/Madam,


RE: RESEARCH AUTHORIZATION FOR MS. CAROLINE M. KANINI REG. NO. Q97/30765/15

I write to introduce Ms. Kanini who is a Postgraduate Student of this University. The student is registered for a Ph.D. degree programme in the **Department of Population & Reproductive Health in the School of Public Health.**

Ms. Kanini intends to conduct research for Ph.D. thesis entitled **"Role of Counselling in Enhancing Coping after a Stillbirth among Women in Kitui and Machakos Counties, Kenya."**

Any assistance given will be highly appreciated.

Yours faithfully,


MRS/LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

RM/cao

Appendix 8: Ethical Review Approval



**KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE**

Fax: 8711242/8711575
 Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
 Website: www.ku.ac.ke

P. O. Box 43844,
 Nairobi, 00100
 Tel: 8710901/12

Our Ref: KU/ERC/APPROVAL/VOL.1 (45)

Date: 20th April 2017

Caroline Mumbe Kanini
 Kenyatta University,
 P.O Box 43844,
 Nairobi

Dear Caroline Mumbe Kanini

APPLICATION NUMBER PKU/658/1738 TITLE "Role of Counseling in Enhancing Coping after a Stillbirth among Women in Kitui and Machakos Counties, Kenya"

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic application Number **PKU/658/Role of Counseling in Enhancing Coping after a Stillbirth among Women in Kitui and Machakos Counties, Kenya** Received on 28th March 2017 and Approved on 11th April 2017

2. APPLICANT

Caroline Mumbe Kanini

3. SITE

Kitui and Machakos Counties, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (Section 7.2.1.3) and the Kenyatta University Review Committee Guidelines **AND APPROVED** that the research may proceed for a period of **ONE** year from 20th April, 2017.

ADVICE/CONDITIONS

- i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
- ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
- iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
- iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.
 If you accept the decision reached and advice and conditions given please sign in the space
 Provided below and return to KU-ERC a copy of the letter.

[Handwritten signature]
DR. TITUS KAHIGA
 CHAIRMAN ETHICS REVIEW COMMITTEE



I Caroline Kanini accept the advice given and will fulfill the conditions therein.

Signature [Handwritten Signature] Dated this day of 28th April 2017.

cc:
 DVC: Research Innovation and Outreach

Appendix 9: Authorization from NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/17/73613/17243**

Date: **12th July, 2017**

Caroline Mumbe Kanini
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Role of counseling in enhancing coping after a stillbirth among women in Kitui and Machakos Counties, Kenya,"* I am pleased to inform you that you have been authorized to undertake research in **Kitui and Machakos Counties** for the period ending **12th July, 2018.**

You are advised to report to **the County Commissioners and the County Directors of Education, Kitui and Machakos Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**GODEFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Kitui County.

The County Director of Education
Kitui County.

The County Commissioner
Machakos County.

The County Director of Education
Machakos County

Appendix 10: Kitui County Commissioner's Authorization



THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

E-mail; cckitui@gmail.com
When calling or telephoning

OFFICE OF THE
COUNTY COMMISSIONER
KITUI COUNTY
P.O. BOX 1 - 90200
KITUI

.....
When replying please quote

K.C.603/I/220

21st November 2017

Caroline Mumbe Kanini
Kenya University
P.O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to a letter Ref. No. NACOSTI/P/17/73613/17243 dated 12th July 2017 from the National Commission for Science Technology and Innovation on the above subject matter.

You are hereby authorised to carry out research on ***“Role of counselling in enhancing coping after a stillbirth among women in Kitui County”*** for a period ending 12th July, 2018.

M.G. MAUKI
FOR: COUNTY COMMISSIONER
KITUI COUNTY

Appendix 11: Machakos County Commissioner's Research Authorization



THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telephone: 21009 and 21983 - 90100
Email Address: countycommasaku@gmail.com
Fax No. 044-21999

OFFICE OF THE
County Commissioner
P.O. Box 1 - 90100
MACHAKOS.

When replying please quote

REF NO: CC/ST/ADM 5/9 VOL II/146

20th November, 2017

TO: WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION -CAROLINE MUMBE KANINI

The National Commission for Science, Technology and Innovation has authorized the above researcher to carry out research on "**Role of Counseling in enhancing coping after a stillbirth among women**" in Machakos County for a period ending **12th July, 2018**.

Please be notified and accord her necessary assistance.

George Opiyo Juma
For: County Commissioner
MACHAKOS

COUNTY COMMISSIONER
MACHAKOS
P.O. Box 1 MACHAKOS

Appendix 12: Kitui County Director of education Authorization

MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY
State Department for Basic Education

Telegrams "EDUCATION"
 Kitui
 Telephone: Kitui 22759
 Fax :04444-22103
 E-Mail :
cde.kitui@gmail.com



COUNTY EDUCATION OFFICE
 KITUI COUNTY
 P.O BOX 1557-90200
KITUI

When replying please quote;

Ref. No: KTIC/ED/RES/22/247

Date: 21st November, 2017

Caroline Mumbe Kanini
 Kenyatta University
 P.O.BOX 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to conduct a research on "**Role of counseling in enhancing coping after a still birth among women in Kitui and Machakos Counties, Kenya,**" I am pleased to inform you that your request is hereby granted for the period ending 12th July, 2018.

You are advised to liaise with the respective Sub County Directors of Education before embarking on the exercise. In addition, on completion of the research, you are expected to give this office a copy of the research findings/feedback.

Murerwa S.K (Mrs)
County Director of Education
KITUI

COUNTY DIRECTOR OF EDUCATION
 KITUI
 P. O. Box 1557, KITUI.



Appendix 13: Machakos Country Director of education Authorization

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EDUCATION

Telegram: **"SCHOOLING"** Machakos
Telephone: Machakos ()
Fax: Machakos
Email - ce@machakos@yahoo.com
When replying please quote



OFFICE OF THE
COUNTY DIRECTOR OF
EDUCATION
P.O. BOX 2066-90100,
MACHAKOS

MKS/ED/CDE/U/1/VOL.2/187

20/11/ 2017

Caroline Mumbe Kanini
Kenyatta University
P.O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION.

Reference is made to the letter from National Commission for Science, Technology and Innovation Ref: **NACOSTI/P/17/73613/17243** dated **12th July, 2017.**

You are hereby authorized to carry out your research on, **"Role of counseling in enhancing coping after a stillbirth among women in Kitui and Machakos Counties, Kenya," for a period ending 12th July, 2018.**



Samwel Boto
County Director of Education
Machakos

Appendix 14: Kitui County Director of Health & Sanitation Authorization



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uthuru Highway
P.O. Box 30623-00100
NAIROBI, KENYA

Ref. No. **NACOSTI/P/17/73613/17243**

Caroline Mumbe Kanini
Kenyatta University
P.O. Box 43844-00100
NAIROBI.



RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Role of counseling in enhancing coping after a stillbirth among women in Kitui and Machakos Counties, Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **Kitui and Machakos Counties** for the period ending **12th July, 2018**.

You are advised to report to **the County Commissioners and the County Directors of Education, Kitui and Machakos Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Kitui County.

Appendix 15: Machakos County Director Health Services Authorization

REPUBLIC OF KENYA



GOVERNMENT OF MACHAKOS COUNTY
DEPARTMENT OF HEALTH & EMERGENCY SERVICES

Telephone: - (0145) 20594, 20847,
20234, 21685
Fax: 0145-20594

Office of The
County Director Health Services
P.O. BOX 646,
MACHAKOS
21st November 2017

Ref: MOH/MKS/C4.VI/96

Caroline Mumbi Kanini

RE: RESEARCH AUTHORIZATION

Reference is made to the availed documents in relation to the above subject.

You are hereby allowed to carry out your research on "Role of Counseling in enhancing coping after a stillbirth among women." in Machakos County for the period ending 12th July, 2018.

You are required to furnish this office with a copy of your study report at the end of the research period.




Dr. R. M. Muthama
Ag. County Director Health Services
MACHAKOS COUNTY

C.C
Chief Officer
Ministry Health & Emergency Services
MACHAKOS

