

**EFFECTIVENESS OF MIDWIFE LED DEBRIEFING ON POSTPARTUM
DEPRESSION IN WESTERN, KENYA**

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Sciences in Partial Fulfillment for the Requirements of the Conferment of the
Degree of Doctor of Philosophy in Nursing of Masinde Muliro University of
Science and Technology**

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DECLARATION

This thesis is my original work prepared with no other than the indicated sources support and has not been presented elsewhere for a degree or any other award.

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CERTIFICATION

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DEDICATION

I dedicate this work to my beloved husband Fredrick, my son Kenneth, my daughters (Faith, Purity and Winnie) and my grandson Hawi, for their immense encouragement and loving support during the entire course.

ABSTRACT

Childbirth is a stressful event in women's lives and could influence emotions which may lead to mental ill health like depression in the postnatal period if not resolved. Depression is a common mental disorder with serious consequences especially during the postpartum period. Many African countries have not explored interventions to reduce or prevent postpartum depression, though the prevalence of postpartum depression has been the focus and there is evidence that it exists among postpartum women. Postpartum midwife-led debriefing has not been explored in low-Middle Income Countries including Kenya. Therefore, this study aimed to investigate the effectiveness of midwife led debriefing on Postpartum Depression in Western region, Kenya. Specifically, to examine the effectiveness of approaches used in midwife-led debriefing, to assess factors influencing Midwife led debriefing, to determine the outcome of midwife led debriefing on postpartum depression and to develop Midwife led debriefing protocol on Prevention of postpartum depression. The study was a quasi-experimental design with pre and post-test assessments. Systematic random sampling was used to identify and allocate participants to both intervention and control groups of the study. The target population were the women of child bearing age. The study participants were women who gave birth during the study period, of which a sample of 212 participated in the study. The 165 participants were allocated to the intervention group while 47 participants being in the control group. Data was collected using standard questionnaire. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 26. Chi-square was used to test association between dependent and independent variables, odds ratio was used to determine the strength between variables that were more likely to influence the debriefing outcome. Logistic regression model was used to assess the influence of time-based outcome variables, social cultural and demographic characteristics of women on midwife-led debriefing. Following midwife-led debriefing, depression levels were found to have decreased according to the study's significant findings on group approach, parity, and social support ($p=0.02$; $p=0.004$; $p=0.001$). Additionally, it showed that debriefing lead by a midwife significantly reduced the risk of postpartum depression (t-statistic=14.672, p-value=0.003 < 0.05). The Odds ratio (OR= 5.41) indicated association between the intervention of midwife led debriefing and the outcome being reduced signs and symptoms of depression as compared with the standard care. In conclusion, at the 5% significance level, the null hypothesis was rejected ($p=0.003$), suggesting that postpartum depression might potentially be prevented using midwife-led debriefing. The coefficient of $B=0.871$ shows a proportional shift in postpartum depression prevention of 0.871 units for every unit increase in midwife-led debriefing. Women's postpartum depression scores could be significantly lowered by midwife-led debriefing following delivery. A proposed protocol from this was recommended for early identification of symptoms of postpartum depression and to improve the quality of life for both the mother and the child.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANC	:	Antenatal Care
CISD	:	Critique Incident Stress Debriefing
EPDS	:	Edinburg Postpartum Depression Scale
HADS	:	Hospital Assessment Depression Scale
HIV	:	Human Immunodeficiency Virus
KCTRH	:	Kakamega County Teaching and Referral Hospital
NACOSTI	:	National Council of Science, Technology and Innovation
PNC	:	Postnatal Care
PPD	:	Postpartum Depression
SAPS	:	Southern African Police Services
SPSS	:	Statistical Package of Social Sciences
WHO	:	World Health Organization

OPERATIONALIZATION OF KEY TERMS

Approaches: These are strategies used or plan that can be used to achieve a goal for example use of individual or group approach as a strategy in debriefing

Critical event: This is any event which has the potential to overwhelm one's usual coping mechanisms resulting in psychological distress and an impairment of normal adaptive functioning and for this case it is labour and delivery.

Delivery: This describes the birth of a baby by a woman.

Effectiveness: The extent to which it measures the beneficial effect under normal clinical settings, and from the midwife led debriefing intervention, Edinburgh Postpartum Depression Scale (EPDS) score will be ≤ 12 .

Intervention: A procedure of health care that has the potential to change the course of events of a health care condition, and for this study midwife led debriefing was the intervention.

Midwife led Debriefing: This includes a variety of post birth discussions that provide women an opportunity to talk about their birth experiences and their fears and this includes: pregnancy, labour, delivery, postnatal, breastfeeding, care of the baby, future pregnancies and family members. It incorporates seven stages by Critical incident stress debriefing (CISD) model.

Midwife: A person who has been trained, registered and licensed by NCK to practice as a midwife. This is A person who takes care of the maternal health, that includes before Pregnancy, during pregnancy, delivery and after delivery of the baby.

Postpartum Depression: Postpartum depression (also called PPD) is a medical condition that many women get after having a baby. It has strong feelings of sadness, anxiety (worry) and tiredness that last for a long time after giving birth. These feelings can make it hard for women to take care of self and their baby. This occurs any time after childbirth.

Postpartum Period: This is the period for a woman after the delivery of a baby up to six weeks

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter provides information on the background of postpartum depression, general debriefing and postpartum debriefing. It also includes the problem statement, the objectives of the study, study hypothesis, justification and study limitations as well as definition of variables.

1.2 Background to the Study

Transition into motherhood is generally a joyful life event for women and the family as a whole. However, it is marked by complex and mixed feelings both positive and negative which can affect the woman's psychological response to childbirth (Shorey *et al.*, 2021). Based on studies, mothers are occasionally overwhelmed with stressful experience during antenatal period, labour, delivery and breastfeeding, this being the whole process of change of pregnancy and childbirth (Budiman, *et al.*, 2019). This may result in mental ill-health which includes depression.

Postpartum depression is a mood disorder which can affect women after childbirth and they experience feelings of extreme sadness, anxiety, and exhaustion that may make it difficult for them to perform or complete daily care activities for themselves or for others (Rondon, *et al.*, 2022). Untreated Postpartum depression may lead to long term illness of depression, hence interfering with the relationship between the mother child, to an extent of suicide as well as infanticide in rare cases (Nguyen, *et al.*, 2022).

Postpartum depression can manifest with signs of lack of sleep, fear for being hurt, thoughts of inability to care for and feed the baby, self-doubt, lack of confidence and crying in severe cases. One can have feelings of being hopeless and wanting to end her

life and can also lead to child suicide (Nguyen, *et al.*, 2022). Feelings of loss of control and emotional distress not only affect the mother, but have known adverse effects to the infant as well (Netsi Elena *et al.*, 2018). Signs and Symptoms of Postpartum depression starts after birth of the baby and can persist for one year or more. Therefore, the early postnatal period is a crucial time to improve the health and survival of both the mother and the new born, though it is the postnatal time that receives least attention (Netsi Elena *et al.*, 2018; WHO, 2014).

The childbirth experiences have also been proposed to have a strong effect on both the health of the mother and the child (Reindolf, *et al.*, 2018). For years, studies have been done to ascertain the relation between obstetric method of delivery and incidence of PPD. However, postpartum depression like other depression cases may not have definite cause, but could be a combination of different factors like physical, biological and hormonal factors (de Bruijn, *et al.*, 2020). Evidence of a range of psychological morbidities following childbirth is now compelling and postnatal debrief is one intervention that has been implemented in an attempt to reduce this morbidity (Abdollahpour, *et al.*, 2020).

There is scanty information from studies in Africa on the magnitude of Postpartum depression. Systematic review of fifteen articles showed that Low Middle Income Countries (LMICs) was more rampant by 25%, of which South Africa (6.9-43%), Uganda (43%), and Kenya (13-18.7%) (Atuharie *et al.*, 2020).

Debriefing is a single structured psychological interview and discussion during which the interviewer explores a client's/or patients stress experience of a traumatic event with an objective of reducing the emotional/psychological distress after the unusual event or trauma (Asadzadeh, *et al.*, 2020). In the case of the Midwife led debriefing,

the midwife becomes the lead person and performs the interview discussion with the women after delivery (Asadzadeh, *et al.*, 2020). Childbirth becomes the same passage that the women have all gone through with trauma, pain and other diverse experiences (Abdollahpour, *et al.*, 2018).

Following a systematic review, debriefing has been tried to avert and correct psychological problems arising from a stressful event with attempts of midwife led debriefing in the developed countries (Budiman, *et al.*, 2019). One key intervention that was used to prevent morbidity due to postnatal depression was midwife led debriefing. This allowed the women to talk out their issues related to birth experiences and therefore, reduces the probability of ending up with postpartum depression (Fonseca. *et al.*, 2019). Debriefing therefore becomes one of the health promoting strategies to maintain good health of women, babies and their family. This approach improves the total well-being of the family and reduces the burden of regular health visits seeking for treatment and care (Shorey *et al.*, 2021). Midwife led debriefing have shown positive effects among mothers in the United Kingdom and debriefing outside reproductive health showed good results too (Tylor, *et al.*, 2021).

1.3 Statement of the Problem

Postpartum depression, from the global perspective cuts across though high prevalence is associated with socio economic factors. This mainly affects women from Low Middle Income Countries (LMICs) as compared to those from developed countries. The reasons as to why this happens in this manner is because women from LMICs are not likely to seek for help or even willing to share with others their emotional issues (O'Connor, *et al.*, 2019). Mothers are expected to go through childbirth and enjoy the period after having a newborn baby with the family members. However, mothers go through stressful situations and end up with signs of postpartum depression. There is

no clear intervention to reduce the incidence of postpartum depression even though it is noted to cause an array of negative effects beyond the individual women to the entire family and community (Asadzadeh, *et al.*, 2020). If women were left to struggle on their own regardless of the stress they go through during labour and delivery, how would our communities look like? This is why there is need to identify the solution to reducing the effects of postpartum depression by intervening with the use of midwife led debriefing.

The potential effects of postpartum depression involve the physical, mental, and social health of the mother, child, and family. World Health Organization (WHO) ranked depression 4th and projected to be 2nd in the year 2020, and postpartum women being more vulnerable (WHO, 2014). This therefore raises an alarm, hence the need to search for possible interventions to avert the trend. Psychological interventions have not been well explored in the low-income countries in attempts to prevent postpartum depression.

The financial healthcare burden of treating postpartum depression and its sequelae is significant. Research done by Nadia Rania (2019), shows that health care spending is considerably higher in depressed women than non-depressed women. Postpartum depression can contribute to poor mother-child bonding, difficulty with breastfeeding, child abuse and/ or neglect (Martín-Gómez, *et al.*, 2020). Mother's needs are often overlooked as a concern, because the newborn is likely to take priority. Prevention, early detection and management of postpartum depression is key to shortening the course of the disorder and preventing potentially dangerous side effects (Tylor M. *et al.*, 2021). From a systematic review, many women of approximately 7– 26% experience fear, afraid of what would be the outcome of their delivery, leading to high

level of anxiety about the pregnancy, birth, fear of harm or death during childbirth, poor sleep and somatic complaints (Fonseca *et al.*, 2019).

The debriefing during postnatal period has been used routinely in the western countries including UK and Australia and this showed good results (O'Connor *et al.*, 2019). According to Atuhaire *et al.*, (2020), there are minimal studies done in African countries, however, studies done indicated high prevalence of PPD as compared to high income countries. Furthermore, postpartum period is given less attention giving it high chances of missing out early identification and intervention to avert Postpartum depression (Gribbin *et al.*, 2023; WHO 2014).

Many studies have been done to establish the prevalence of PPD. However, the approach of Midwife led debriefing to prevent postpartum depression among mothers has not been explored and used in African countries including Kenya as well. Maternal mental health, and in particular postpartum depression, presents special issues for the Western region of Kenya, which includes the counties of Kakamega and Bungoma. There are insufficient targeted interventions to prevent and address PPD, despite prior studies showing that the prevalence of PPD in the region is 22% higher than the national prevalence (WHO, 2014; UNFPA, 2016). As the primary healthcare professionals for expectant and new mothers, midwives are essential in detecting and assisting women who may be at risk of postpartum depression. On the other hand, not much study has been done on the effectiveness of midwife-led debriefing in this situation as an early intervention to prevent PPD. Therefore, this study seeks to investigate the effectiveness of midwife led debriefing on postpartum depression.

1.4 Objectives of the Study

The main objective of the study was to investigate the effectiveness of Midwife-led debriefing on postpartum depression in Western Kenya.

1.4.1 Specific Objectives

- i. To examine the effectiveness of approaches used in midwife-led debriefing on postpartum depression
- ii. To assess factors influencing Midwife led debriefing on postpartum depression
- iii. To determine the outcome of midwife led debriefing on postpartum depression
- iv. To develop Midwife led debriefing protocol on Prevention of postpartum depression.

1.5 Hypothesis

H₀: Midwife led debriefing is not effective on Prevention of postpartum depression

H_a: Midwife led debriefing is effective on prevention of postpartum depression

1.6 Justification

Postpartum depression (PPD) places a burden on maternal health and it exerts a negative impact on mother's health and child's life too. Global prevalence ranges between 17.5% to 29% (Taylor, *et al.*, 2021). According to Martín-Gómez C. *et al.*, (2019), mothers after childbirth are more likely to develop depression though this may be diagnosed in only 50% of the women with prominent symptoms during the first-year post-delivery. This study gives better understanding on midwife led debriefing effectiveness on postpartum depression and identify standards and recommendations to improve quality of life both for the mother, baby and the entire family. The findings of this study will help the midwives to improve the quality of individual maternal health, hence impacting the community positively, reducing expenditure and improves individual and community economy. The findings of the study will help inform the development of policies by County and National health systems. The findings will help inform the development and review of curriculum in training institutions. This will also be used to develop programs to support and enhance the use of midwife led

debriefing protocol during postnatal period for women after childbirth. Finally, it will contribute to the body of knowledge.

1.7 Limitations of the Study

This study adopted Quasi experimental study design, which was a longitudinal study. Although the study was longitudinal, it was done for a period of only one year with post intervention assessments. Therefore, there is need for further studies to assess the long-term effect.

The study area was purposively selected, being Kakamega and Bungoma counties with two Hospitals identified i.e., Kakamega and Bungoma Teaching and Referral Hospitals this were identified based on the high prevalence of PPD (WHO 2014; UNFPA 2016), and therefore, covering a small sample population. Thus, the researcher recommends other studies to be done to cover a larger area and sample population.

1.8 Theoretical Framework

The study used the Aaron Beck theory of Cognitive Behavior theory (CBT) also known as cognitive behavioral therapy which is a psychotherapeutic process of taking care of individuals experiencing depressive symptoms. Transition to motherhood is demanding for women and they face a lot of challenges relating to their identity, interpersonal relationships, emotional and physical changes (Finlayson *et al.*, 2020). The CBT therefore, suggests that the person's thoughts, feelings, and behavior are interconnected. It emphasizes the interaction between individual thoughts, feelings, and behaviors. This helps women after childbirth to identify and modify irrational patterns of thinking and behavior. In postpartum depression (PPD), negative thought patterns may include feelings of worthlessness or inadequacy as a mother, fear of being

judged by others, or difficulty in adjusting to the new demands of parenthood. Hence, Midwife-led debriefing can explore and challenge their negative thoughts and women can learn new coping strategies to manage their symptoms. By changing their thought patterns, they can reduce negative emotions and behaviors associated with PPD. As a result, the mother can experience a reduction in depressive symptoms or maintain a non-depressive state.

Cognitive behavior theory as evidence is key and enables understanding of emotional and behavioral reactions in certain situations to include even the person's previous experiences and held beliefs that can manifest through automatic thoughts which in turn influence emotional and behavioral reactions. The midwife-led debriefing using the Critical incident stress model (CISD) seven stages allows the woman to discuss and vent their feelings and experiences before and even after delivery. CBT therefore, focuses on specific beliefs about motherhood and includes interpersonal component for greater efficacy (Batt *et al.*, 2020).

The ABC model by Albert Ellis, within the cognitive behavior theory helps to explain the relationship between thoughts (cognition) and emotions (feelings). The ABC model is denoted as **A**- Activating events, **B**- Beliefs, and **C**- Consequences. The activating event refers to any situation, event, or circumstance that triggers or precedes the onset of a specific emotional response. It can be an external event or internal thought or memory that occurs in the mind of women after delivery. The external event could arise from what they heard from others about negative results during labour and delivery and this would be a trigger to fear leading to emotional imbalance.

Beliefs are the thoughts, interpretations, or assumptions that one has following an activating event. The beliefs can be rational or irrational, healthy or unhealthy and this

interprets how one perceives and interprets a situation. If a woman believes that having a cesarean section as a mode of delivery is being inadequate, then she may end up being devastated and develops a fear of being blamed by significant others that may include her spouse.

Consequences are the emotional and behavioral responses that follow an individual's beliefs about an activating event. This could include both positive and negative emotions for example happiness, anger, anxiety, sadness, or fear. CBT on its own focuses mainly on negative emotions that might be causing distress or hindering personal growth.

The study was guided by the conceptual framework showing the links and relationship between variables. The main intervention was the independent Variable as “Midwife led Debriefing” which was expected to influence the outcome variable “Postpartum Depression”. The intervention was expected to prevent the occurrence of postpartum depression. The outcome measure is expected to show the effectiveness of midwife led debriefing, hence reduced or no signs and symptoms of PPD. The assumption of the study was that the intervention would improve the outcome of the mother after delivery in a positive way leading to enhanced quality of life. There were independent variables that existed in the process of intervention which may have modified or interfered with the outcome variable. These factors included variables like obstetric factors, socio-cultural factors, Health Facility factors and midwife related factors.

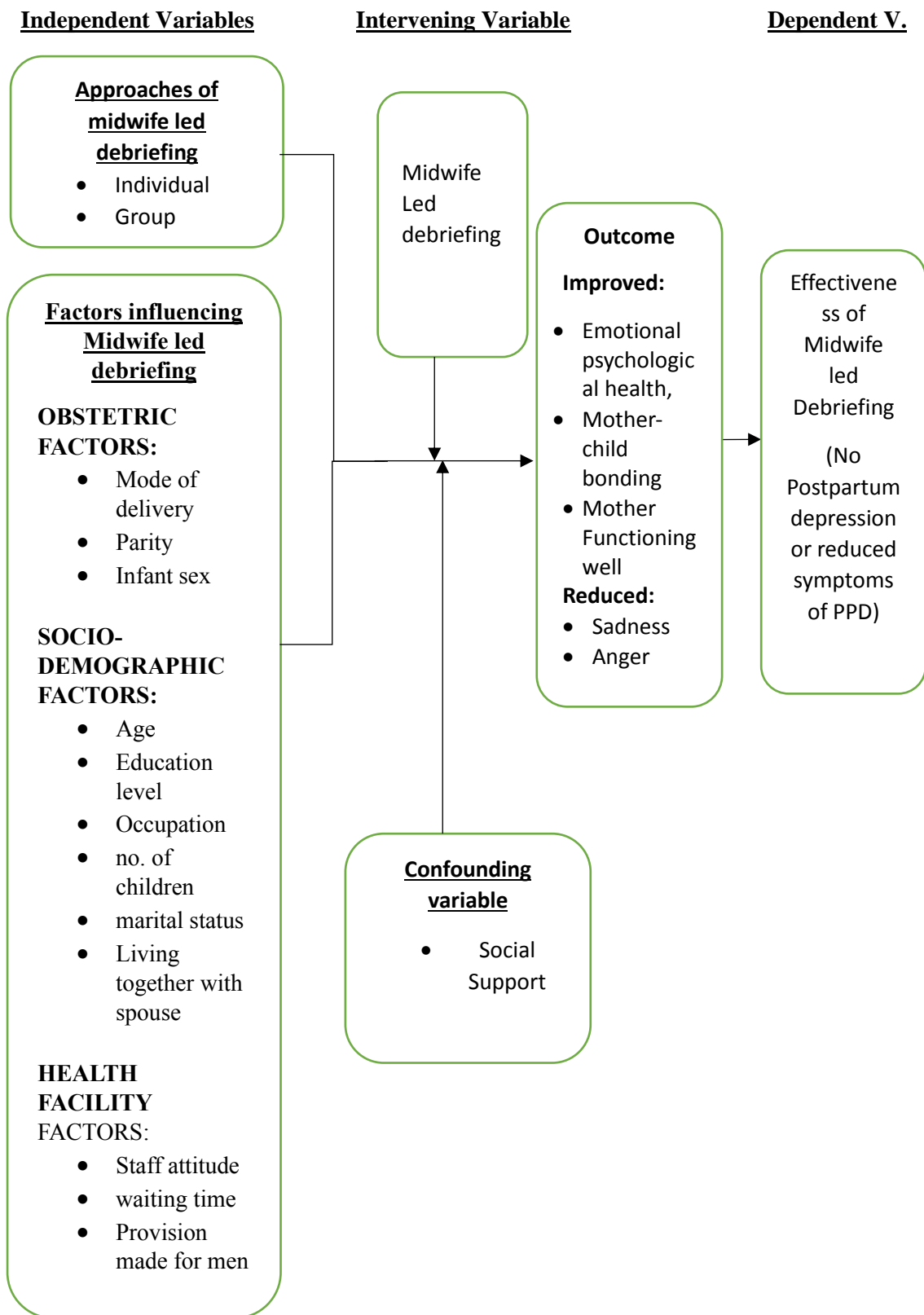


Figure 1.1 Conceptual framework adopted from Aaron Beck's theory

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

The literature review covers the background of general depression, postpartum depression, birth experiences, Postnatal care, debriefing and prevalence of postpartum depression. The chapter also described the literature on the specific objectives that included approaches used in midwife-led debriefing, factors influencing midwife led debriefing and outcome of midwife led debriefing on Postpartum depression.

2.1.1 Depression

Depression and its symptoms is a common mental disorder that brings about disharmony and affects the quality of life among individuals affected and the entire community because of its effects (Pham, *et al.*, 2019). According to WHO, 2014 depression was rated 4th condition and projected to be 2nd in the year 2020. Due to its effects, it is important that preventive measures are identified and be implemented to prevent its long-term effects to the family and entire community. From a meta-analysis of depression studies involving 41,344 subjects, the prevalence of depression was 27.0% to 29.0% (Nisar A. *et al.*, 2020).

Majority of the depression cases were from Low, Middle-Income Countries as compared to the developed countries. From the epidemiology of maternal depression, women were more of the cases of depression than men of which the cases were during postnatal period being high and were associated with stress following labour and delivery (Randon, *et al.*, 2022).

2.1.2 Postpartum Depression

Women experience stressful events during childbirth, and if a woman feels that her experience was unpleasant, it may affect how she feels emotionally after giving birth. According to Nguyen H.T. *et al.*, (2022), depression is a prevalent mental illness that, depending on its degree, can have major repercussions. According to Noryahati *et al.*, (2015), the prevalence of PPD varies globally and can be as low as 0.5% or as high as 60.8% in the first year after childbirth. Due to its detrimental impacts, postpartum depression is very important for public health.

According to a comprehensive study conducted in the United Kingdom (UK), insecure attachment style and poor mental health during the first five years of life are caused by the detrimental effects of maternal depression on the mother-infant bonding (Reindolf *et al.*, 2018). The study conducted by Mousavi *et al.* (2020) found a correlation between postpartum depression and a rise in low self-confidence, childhood IQ, slowed growth, limited social connections, increased baby crying, colic, and high anxiety throughout the growing years. The woman's bad attitude and infrequent encounters prevent her from having a strong knowledge of parenthood, which hinders the baby's ability to bond. A mother with postpartum depression has low self-esteem and feels unfit to care for her own child. (Mousavi, *et al.*, 2020). This leads to mixed reactions and therefore confusion and anxiety. The incapacity to carry out their basic activities leads to delay in child caring role (Reindolf *et al.*, 2018). Low self-efficacy is one of the variables that can increase one's risk of developing depression. People with high self-efficacy are more confident, determined to prevent harm, and capable of handling difficult situations. As a result, they can overcome hurdles more rapidly and accomplish their goals (Louise *et al.*, 2018). Traumatic birthing experiences

increase a woman's risk of developing post-traumatic stress disorder (PTSD), which can cause depression and other postpartum mental health issues (Abadiga, 2019).

It is estimated that between 9% and 44% of women had a traumatic delivery experience; of these, a minority will acquire post-traumatic stress disorder (PTSD). According to a meta-analysis, 3.1% of unselected populations and estimations of 15.7% to 28.9% in high-risk groups experienced postpartum PTSD symptoms (Slomian *et al.*, 2019). Research conducted in the United Kingdom approximated the long-term cost of depression during pregnancy and the postpartum period to be close to £74,000 per case (2012/13 pricing, UK sterling pound). Approximately 70% of the estimated expenses were allocated to mitigating the adverse impact on children. During the time between the birth and general health, there were incidents of preterm birth, high morbidities, mortality, emotional stress, education, and behavior changes. (Bauer, *et al.*, 2015).

Postpartum depression can indirectly affect other members of the family. From the meta-analysis of studies, the male partners were found to be affected with depression within the first year of childbirth, and therefore, they were at 10% potential to experience signs and symptoms of depression. This indicated a relationship between paternal and maternal depression which was positive and moderate (Shorey, *et al.*, 2021). The experience of postpartum depression among the spouses would result to problems in the family and could even end up with separation or divorce. The withdrawal of social support between parents can compromise adequate care-giving practices of parents, or parent-baby interactions (e.g. the ability of the mother to respond sensitively to her child). The problems experienced may negatively affect the cognitive, behavioural and social development of the infant in the short and long-term

basis (Mousavi, *et al.*, 2020). According to Kariuki & Newton (2022), it was reported in Africa that, higher cases of depression were related to the sociocultural attitudes and with lower perception of poor social support. Differently the association between high traditional beliefs and behaviors may have been as a result of a strictness against borrowing money among women, although it could also reflect the lack of opportunity for poorer women to borrow money. In other cases, the inability for the husband to social and physical support like providing sufficient and delicious food for the wife after childbirth brought about distress in the families hence negative effect to the mother, resulting to depression (Kariuki & Newton 2022).

2.1.3 Prevalence of Postpartum Depression

Global prevalence of postpartum depression (PPD) ranges between 17.5% to 29% from a meta-analysis of the papers that used Edinburg Postpartum Depression Scale (EPDS) to estimate depression (Taylor, *et al.*, 2021). This prevalence considers the heterogeneity across nations therefore, it ranges from 3% in Singapore to 38% in Chile. Developing countries who still have high morbidities and mortalities (Maternal and Neonatal) demonstrated to have high prevalence of Postpartum depression (Shorey, *et al.*, 2019). Among the women with postpartum depression, the common characteristics were those ≥ 40 years old, low educational level and little or no source of income (Hahn-Holbrook *et al.*, 2017).

Many women during postpartum period were prone to maternal sadness. A study done in Kathmandu, Nepal 50% to 80% suffered from maternal sadness in perinatal period and Postpartum depression prevalence was estimated to be 20% (Qian, *et al.*, 2020). The study revealed the prevalence estimation to be higher in low-income countries, with the rationale that women who were poor don't seek for help nor were they willing

to discuss their feelings with others (Qian, *et al.*, 2020). In Vietnam, the postpartum depression prevalence was at 27.6% in the first year after childbirth (Thi Kim *et al.*, 2018). A systematic review that included Vietnamese women was at 13 to 40 %, which gave a range in which prevalence in Vietnam alone was at 27.6% (Denis *et al.*, 2017). In Ghana the prevalence was between 10 to 15% yearly and it ranges from minimal depression to severe depression and those with severe depression were referred for psychiatric review (Reindolf, 2018). Analysis of 195 countries on the major causes of morbidities and mortalities, highlighted the prevalence of Postpartum depression in Kenya as 22% (WHO, 2014). A study done among 567 postnatal mothers in the slums of Nairobi, Kenya showed Postpartum depression prevalence of 27.1% (Kariuki, *et al.*, 2022).

2.1.4 Birth Experiences

Birth experience is varied and every individual woman has its own subjective way to describe their birth experience. Childbirth whether complicated or uncomplicated is termed as traumatic since it has some implications in a woman's health state (Reisz *et al.*, 2015). Many studies reported birth experiences to be associated with several factors which includes; social upbringing, support, and individual characteristics. The type of health care as perceived by a woman will affect the overall health of both the woman and her child (Asadzadeh, *et al.*, 2020). To bring out the sense of confidence in women, there is need to embrace individual social support during labour which is assumed to empower the women and hence they would approach childbirth with positive attitude and not fear (Abdollahpour, *et al.*, 2020).

A study from Russia indicated that having women's view on positive experience in childbirth was having their expectations made, for example delivery to a life baby with good health status brought in joy to the family members (Yakupova, & Suarez, 2021).

Women too termed childbirth satisfactory when they were supported throughout labour and delivery and had low tendencies of developing postpartum depression (Budiman, M. E. A. *et al.*, 2019). This was because it allayed uncertainty and fear of what to expect in the whole process of labour and delivery essentially because they had the Duola with them during child process (Budiman, M. E. A. *et al.*, 2019). In situations where women felt satisfied, their perception was based on the midwife being readily available and listening to them, and were termed as considerate. From this feeling the women felt calm and less feeling of emotional distress expressed (McLeish, & Redshaw, 2019).

Negative birth experiences were mainly expressed by majority of women who had a bad outcome of delivery, which included asphyxia, stillbirth or premature baby leading to staying longer in the health care facility, hence away from their family members. The women blamed themselves for the negative outcome, putting themselves at high risk of postpartum depression (Lisanne, *et al.*, 2018). However, some appreciated the efforts that were done by the midwives and the teamwork of the health care personnel in the maternity department and mainly in the labour ward area (Yakupova & Suarez, 2021).

Antenatal care in Sweden is organized in a way that pregnancy is under the primary care services where the midwife is responsible for a certain geographical area and therefore would do a close follow up of the pregnant mothers (Nadia, 2019). During delivery at the hospital a midwife becomes an independent care giver where there are no complications. The nurse assistant becomes the key person throughout labour and delivery to assist the midwife in practical care and support during delivery (Nadia, 2019). The home births in Sweden was at 1:1000, and report of birth experiences is

positive. This is quite opposite in the developing countries where home birth is almost 50% with high delivery rates as compared to developed countries (KDHS, 2022). The previous birth experience of a woman influences the choice of how and where to deliver their next baby (Nadia, 2019).

Childbirth is viewed by women and communities entirely as a transition that involves physical and emotional changes in the woman and relational effects in the family. It is complex but subjective as well, which is considered engaging from the moment of pregnancy, delivery and even after the baby has been born (Nadia, 2019). Though the transition process is expected to be positive and satisfying with the joy of having the baby and a family, it can occasionally be transformed to be a traumatic event (Cipolletta, 2016).

Perineal trauma has led women to experience emotional effects and therefore leading to postpartum depression (Asadzadeh L. *et al.*, 2020). Many women undergo a silent but painful emotional feeling due to the perineal trauma, and because they have no one or they fear to discuss about it, they end up with postpartum depression (Asadzadeh, *et al* 2020). Coping with pain during labour and childbirth differs in women depending on their pain threshold or the type of pain experienced. This would also be seen in difficult labour like obstructed labour with delayed intervention (Nadia, 2019). Pain is a subjective feeling that Health care professionals should trust the woman, however in rare occasions the woman may be trusted (Nadia, 2019). The pain during labour and delivery extends beyond to postpartum period and affects the quality of the woman and the baby's health in totality (de Bruijin, *et al.*, 2020).

The lack of confidence of women who perceive themselves as inadequate and therefore would neglect themselves. With the woman's self-negative perception, they eventually interpret that they have no worth and would not care for the baby as well. This leads to series of emotional effects with inability to take care of self, the baby and the family as well (Asadzadeh, *et al* 2020).

In the developing countries including the Sub-Saharan African countries, psychological factors are more neglected and overlooked over the physical effects like the Maternal Mortality Ratio (MMR) (Atuhaire., *et al.*, 2020). It is evident that childbirth experiences affect the psychological and emotional state of a woman. A study carried out in Zambia indicated that the negative childbirth experiences led to prolonged hospitalization, negative effects to baby's care and family instability (Lang-Balde, & Rachel Kristine, 2019). In most African countries, Childbirth is termed as women's affair and if one is not able to go through the whole process effectively as expected or becomes unstable/sick during and after delivery, they are termed as weak. This notion and belief affect the woman's sense of confidence and trust and therefore would blame themselves for any negative outcome (Wagas, & Igbal, 2018).

As many other countries reported, Kenyan women have reported different forms of mistreatment as their negative experiences. This included verbal abuse, physical abuse, neglect, discrimination, abandonment in hospitals, poor rapport with health care providers and unprofessional standards (Wanjiku., *et al.*, 2021). The fees levied during childbirth leads to abandonment and increased hospital stay which was one of the predictors to postpartum depression (Wanjiku., *et al.*, 2021).

2.1.5 Postnatal Care

Postnatal care is the care that is offered to the woman and the baby after delivery. In the whole maternity care, postpartum period is critical though it has been neglected however, many morbidities and mortalities occur at this period (WHO, 2014). Postnatal care services include monitoring of vital signs, counselling, care of the baby and other health care services for the period of six weeks. This is the period that the woman physical self is taking transition back to normal. In addition, emotional adjustments to having to take care of the new being outside utero. The baby is a joy to the mother and family, however there are challenges to ensure the baby is calm and safe (Mousavi, *et al.*, 2020).

During the Postpartum period, physical and emotional care of the woman is addressed by the midwife at the frontline and in partnership with other health care staff (O'Connor. *et al.*, 2019). Since the postnatal period is neglected, many women go through the period with uncertainty, struggling by use of trial and error with assumption that whatever happens is normal (Leila, *et al.*, 2021). Pakistani women are taken care for forty days with a lot of social support by their kin. Though the aim was to prevent the evil spirits from attacking the woman when left alone, it bores good fruits like reported cases of morbidities are minimal (Rondon, *et al.*, 2022).

2.1.6 Debriefing

Debriefing is a discussion process of therapy that includes single psychological interview during which the interviewer explores the victims or client's stress experiences of traumatic events with an aim of reducing the emotional and psychological stress (Abdollahpour, *et al.*, 2020). Debriefing started with its use in traumatic events that included military officers after war or hazardous situations that

may have led to death or injury to individuals (Norhayati, 2015). The debriefing process was used to help the victims talk about the ordeal with the assumption that it becomes a healing process to them. This was seen to improve their psychological well-being and reduced cases of fear and anxiety (Budiman, *et al.*, 2019). Debriefing is a form of Interpersonal Therapy (IPT), and was developed as treatment to major depressive disorder in general adult population. However, this has also been embraced to treat women during perinatal period (Asadzadeh, *et al.*, 2020).

Debriefing has had positive and negative effects depending on the individual characteristics and professional interviewer experiences in handling the debriefing process (Asadzadeh, *et al.*, 2020). It is cheap and an easy way to accelerate performance by 25%, and can improve by another 35% if it is well structured. Unlike the after-action review (AAR) for US Army, the after-action debrief (AAD), for the same military groups allowed them to openly discuss about their emotional issues (Norhayati, 2015).

In the case of midwife led debriefing, the midwife becomes the team leader and the facilitator who explores the woman's stress experience throughout labour, delivery, afterbirth and immediate care of the baby (Asadzadeh *et al.*, 2020). The aim was to help the women talk about the experiences they went through, appreciate some situations and eventually preventing postpartum depression ((Asadzadeh *et al.*, 2020). Operative delivery has also been associated with maternal morbidity including feelings of guilt, regret, low self- esteem, prolonged pain, discomfort, grief reaction, feelings of violation, dissatisfaction to care, and occasionally hostility to hospital staff (Abdollahpour *et al.*, 2018). All these feelings predispose the woman to postpartum

depression, therefore need to embrace the debriefing approach which is a process of health promotion strategy to women after birth (Abdollahpour *et al.*, 2018).

According to Taylor M. *et al.*, (2021), focused care given during postpartum period helps midwives and other health care providers to identify problems early and ensure timely treatment. The effects of postpartum depression could go beyond individual level and may affect the infant bonding, feeding and eventually lead to family disharmony. The delay in identification and intervention may lead to deleterious effects such as maternal and Neonatal increased morbidity and mortality (Taylor M. *et al.*, 2021).

Randomized Control trials (RCT's) done in South Africa included biological interventions such as use of 100 ug of Selenium yeast daily during pregnancy and 200mgs of Norethisterone after delivery and this intervention reduced cases of developing postpartum depression (Moeyaert *et al.*, 2017). The articles reviewed based on use of biological intervention reduced based on the assessment using Edinburg Postpartum Depression Scale (EPDS) scores as compared to the placebo group. Psychological interventions had varied results including positive though with slightly lesser percentage as compared drug therapy (Di Blasio *et al.*, 2015). From the Meta-Analysis studies, there was need to do more studies on debriefing as an intervention to prevent PPD since many studies had not looked into psychological debriefing as an intervention and it was also considered cheap. This would clearly bring out and determine the potential benefits of debriefing as a clinical strategy (Tsivos *et al.*, 2015; Norhayati *et al.*, 2015).

2.2 Approaches used in midwife-led debriefing

Approaches in debriefing are used to achieve a certain desired goal. Therefore, approaches used in debriefing included individual and group debriefing. According to Arancibia *et al.*, (2022) approaches of debriefing can also be influenced by factors like timing, individual capacity and experience in debriefing. Outside the health sector, the group and collaborative debriefing approach used for Student Motivation and self-efficacy in Game-based learning indicated that students performed more as compared to individual debriefing (Van der Meij *et al.*, 2015).

Meta- Analysis of psychological debriefing studies gave positive results following group debriefing and this was assessed through reduction of signs and symptoms of anger, hopelessness and thoughts of harming themselves and baby (Taylor *et al.*, 2021). Individual debriefing was much of a follow-up from group and this was after identifying those who needed more help as it was mainly utilized with the army soldiers after their operation of defense in war (Norhayati *et al.*, 2015).

Debriefing started with the soldiers who were given the opportunity to verbalize and share their experiences of war, how they acted or performed and from it, they made plans for the next steps (Lin M.W *et al.*, 2020). During the debriefing, there was perceived benefits in group approach especially those who were less than four (4) years in service therefore, the shared experiences and support from others played a big role (Lin M.W *et al.*, 2020). Debriefing aimed at helping the individuals during the sessions to clear mistakes and discover meaningful connections between the activity and their own lives (Norhayati *et al.*, 2015).

The approaches used were enhanced by positive outputs and effects which included factors like debriefers characteristics and video or computer assisted debriefing (Soleiman & Toktam 2022). As to when the debriefing was done, the post scenario debriefing encourages the participants to reflect on their experiences, actions and brings about supportive encouragement (Taylor *et al.*, 2021).

Following the meta-analysis of articles on prevention of post-traumatic stress disorders, the concept and process of debriefing originates from its use in the armed services like the use of Critical Incident Stress Debriefing (CISD) that was used after a critical incident occurred or following a traumatic incident (Lisanne *et al.*, 2018). The debriefing technique has been used with the general public following major events of trauma. Raphael, (1986), discussed the effectiveness of debriefing following psychological trauma. The approach used in the Military was mainly the group and the timing after war (Baxter, 2017). When the process was applied in reproductive health, Postnatal debriefing efficacy was high when the midwife led debriefing used the group approach as compared to individual, however, follow ups were done individually to those women who asked for more debriefs (Kaiyleigh & Shade, 2015).

2.3 Factors influencing midwife -led debriefing on postpartum depression

Factors that may affect the outcome of midwife-led debriefing on postpartum depression includes; obstetric factors, socio demographic factors, health facility factors and midwife related factors.

2.3.1 Obstetric Factors

Obstetric factors include; Mode of delivery, parity and the sex of the baby. Higher levels of fear and anxiety were experienced by women who undergo caesarean section and assisted deliveries like assisted vacuum delivery (AVD) (Abdollahpour *et al.*,

2019). In Scandinavia countries women with child birth fear were treated by a multidisciplinary approach however, much of the task was left to the midwife who had more time with the clients (Fenwick *et al.*, 2015). In regard to mode of delivery and parity, first time mothers and multiparous may not respond the same way because of their individual experiences in the previous deliveries. Cesarean section and other operative delivery were prone to postpartum depression, hence efforts to normalize the delivery process becomes futile because the mothers saw themselves as weak and a disappointment to their family (Nadia *et al.*, 2019). Fear of another delivery process would be so overwhelming that the woman may not pay attention to help therefore, affecting their participation and were not willing to contribute or share their experiences of labour (Nguyen *et al.*, 2022).

From systematic review done, there were indications that sharing and ventilation of their emotional feelings was known to be a healing process (Shorey *et al.*, 2021). The factors that were associated with operative deliveries like Cesarean section and other operative procedures included long stay in the health facilities and women were more likely to develop postpartum depression (Slomian *et al.*, 2019). The systematic reviews and meta-Analysis of 15 articles informed that more than half (9 out of 15) who were cesarean section cases were more likely to be depressed as compared to those who had spontaneous vaginal delivery (SVD) (Fonseca, *et al.*, 2019). According to Lantigua-Martinez *et al.*, (2022), participants who went through unscheduled cesarean section were more likely to have postpartum depression and were also associated with having difficulties with breastfeeding and care of the baby. The sex of the baby whether boy or girl did not affect the feelings of many women in the western countries and this was highlighted from systematic review of articles from US (O'conner *et al.*, 2019). In Africa, having a baby girl twice or more without a baby boy

was more likely to affect the depression status of women because of family and community expectations. Women felt secure in their marriages when they deliver at least a male child (Kariuki and Newton 2022).

2.3.2 Socio- demographic and Economic factors

Childbirth can lead either to a joyful start to motherhood or it can lead to traumatic and poor motherhood in the woman's life, relationship with both child and family. Child birth has a powerful experience and rarely forgotten. Therefore, if it is traumatizing it leads to a lot of pain. Childbirth outcome is desired by a woman however, it also comes with uncertainty and anxiety (O'Connor *et al.*, 2019). Each woman has their own perceptions and different responses to pregnancy, labour and delivery. This response depends on individual characteristics (Rondon *et al.*, 2022).

Major characteristics that contribute to postpartum depression included age, educational status, occupation, and social support. According to Rondon *et al.*, (2019), the risk factors to postpartum depression was inefficient or lack of social support and this was high in Low- and middle-income countries. There was increase in severity for signs and symptoms of perinatal depression for those women who had their partners away and did not have other family member support (Netsi Elena *et al.*, 2018). The systematic review of studies on epidemiology of postpartum depression and its associated factors in Africa indicated that 10 out of 15 studies had socio demographic factors greatly increased the prevalence of postpartum depression (Dadi, *et al.*, 2020). Majority of the studies showed that more than 60% of women did not have tertiary education, therefore were not employed neither were they involved in any self-employment opportunities (Dadi, *et al.*, 2020). From another systematic analysis, most of the studies showed age of above forty (40) years had postpartum depression, though

a few indicated a younger age were more likely to have symptoms of postnatal depression (Taylor Miller *et al.*, 2021).

A study done in Ethiopia on socio cultural practices during perinatal period and its effects on postpartum depression was highly associated with hunger and lack of resources like money to sustain their need to survive. Other factors included maternal age, parenteral education and previous mental diseases (Abadiga, 2019). The male dominance especially in relation to family decision making had great impact on the women's confidence and stability. The women totally depend on their spouses to make decisions on clinic attendance, buying medicine, selling crops and even type of food to be eaten by family. Women in Rural Ethiopia received less social support nor even help in family and house work (Abadiga, 2019).

High prevalence of emotional effects was associated with confining a woman in an abusive home, with no ability to earn small money to support self and family. This was also coupled with separating her from family, social or physical support. Women are usually not able to perform heavy duties and are also termed to be unclean and should not mix with other people. The thought of this loneliness predisposes many women to postpartum depression (Denis *et al.*, 2017). According to Kariuki *et al.*, (2022), low income for women in the African countries affect negatively their emotional state. This is because mothers may not concentrate on the current state, but remain in deep thoughts of what is ahead of them in terms of their inability to pay hospital fees or even afford a meal for herself, baby and entire family (Symon M Kariuki & Charles Newton, 2022).

2.3.3 Health facility factors

The health facility is expected to be conducive and friendly to the woman who is going through labour and delivery. Delay in service delivery may lead to anxiety and uncertainty to mothers during labour and delivery. This is because they totally rely on the health care workers for the good outcome and expectation of having a life and health baby (Mausavi *et al.*, 2020). The health facility environment that was perceived to be conducive and provided for space for family members like the spouse for support during labour and delivery showed positive outcomes and less depression symptoms (O'Connor *et al.*, 2019). Following the statistics of perinatal depression increase, the United Kingdom (UK) invested more on new specialist in perinatal mental health services to avert the trends (O'Connor *et al.*, 2019).

It was noted that, where Midwives were allocated to take care of specific clients, there was more satisfaction and therefore less perceived stress by women. This was because the midwife concentrated on the individual client and had an organized plan for the care (Asadzadeh *et al.*, 2020). The same was also echoed from a study on effectiveness of midwife led psycho-education on parental stress and women on their experience during labour and delivery (Leila *et al.*, 2021). Women acknowledged positive experience because they were not alone in the labour rooms but they had their spouses who were readily available and willing to support them during the labour and delivery process (Barimani *et al.*, 2015).

2.3.4 Midwife Related Factors

Psychological trauma is subjective and mainly defined by what an individual explains in relation to her feelings. This may also be as a result of personal characteristics and interactions (Rondon, *et al.*, 2022). A study done in Iran on mothers' response to psychological birth trauma was observed to mostly affect the mother and the entire

family. This ordeal put the woman and the entire family at risk of family disharmony (Niksalehi *et al.*, 2018). From the same study it was recommended that midwives should identify the consequences of birth trauma to enable them plan for supportive and ensure timely interventions (Niksalehi *et al.*, 2018).

A study done on midwife led continuity of care model, indicated that the individual experiences and the level of professional education can influence their clinical decision making. The diverse experience and high-level knowledge capacity had a positive effect on the type of care the clients received, and this was reflected from the level of satisfaction and less complications observed (Rondon *et al.*, 2022)

2.4 Outcome of Midwife Led Debriefing

Debriefing covers a range of interventions that usually comprises of a single, semi structured intervention that occurs within four weeks of a traumatic event. The use of debriefing has attracted positive effects with indicators that the emotional and psychological state of mothers improved (Mousavi *et al.*, 2022)

From a meta-analysis of 24 studies, there was effectiveness supporting the use of psychological debriefing especially in reducing anger and improving general health and functioning of individuals who were involved in trauma (Shorey, *et al.*, 2021). Other studies showed results that indicated that psychological intervention led to more mothers becoming more relaxed when they shared their birth experiences of anxiety and uncertainty, therefore reducing the tendencies of postpartum depression (Budiman, *et al.*, 2019). Out of eighteen (18) studies less than half, that is eight (8) didn't show any difference, four showed negative effects like increased signs and symptoms of depression and the other six studies had positive effects with reduction

of Edinburgh Postpartum Depression Scale (EPDS) scores of < 9 (Budiman, *et al.*, 2019).

Critical event is any circumstance which has the potential to overwhelm one's usual coping mechanisms resulting in psychological distress and an impairment of normal adaptive functioning. Therefore, Midwife led debriefing as a form of psychological debriefing aims at mitigating the impact of the incident, facilitation of normal recovery and restoration of adaptive functioning (Shorey *et al.*, 2021). From the analysis of studies on psychological debriefing, the appropriate content discussed was time management, group control and involvement of all participants resulted in positive outcomes hence improving the effectiveness of debriefing (O'connor *et al.*, 2019).

Many randomized controlled trials applied postpartum debriefing as treatment as compared to being prophylactic for prevention of depression and this was mainly done to those who request for debriefing (Mausavi *et al.*, 2022). Postnatal debriefing is recognized by women as beneficial because they can discuss their birth experiences and share the fears both to the professional and their peers. Listening to their peers, gave them hope that they were not going through the process alone and therefore believed that they will overcome any fear or difficulty (Gastaldon *et al.*, 2022). The professional guidance through the discussion makes them feel secure and safe hence, reducing their tendency of anxiety fear, and eventually postpartum depression (Gastaldon *et al.*, 2022).

For many women, childbirth is frightening, provoking and traumatic. From the systematic reviews of studies of effectiveness of post-partum debriefing done in UK, it showed reduced symptoms of Postpartum depression overtime in both groups of intervention and non-intervention, but greater decreases in signs and symptoms of

postpartum depression (PPD) were observed on women who attended the debriefing sessions (Martin G'omez, *et al.*, 2020). It was also observed that debriefing and psychological interventions led to decreased negative thoughts about self and significant others (O'Connor *et al.*, 2019).

Despite inconsistencies in evidence, many countries including UK, Australia and Sweden embraced the intervention, because of reasons that women liked it, found debriefing helpful and offers an opportunity to identify women for early referrals to treatment and preventing complications arising from PPD (Abdollahpour, 2018). In practice, the countries who embraced the debriefing only offered to those women who requested for it as compared to all women. They showed positive results including decreased negative emotional effects (Nadia, 2019).

However, few studies showed improvement after debriefing, as was analyzed in a systematic review of 24 studies (Abdollahpour *et al.*, 2020). Among those women who had positive effect of debriefing, there was a clear benefit ranging from psychosocial and psychological interventions (Tsivos & Calam, 2015; Asadzadeh *et al.*, 2020). Studies done in African countries have looked into factors associated with postpartum depression like Ethiopia and Nigeria (Abadiga, 2019). It also indicated that the prevalence of postpartum depression is alarming and recommendations to find ways on prevention, early identification and management was a necessity (Abadiga, 2019; Dadi, *et al.*, 2020). Therefore, not much has been done in African Countries in relation to interventions to reduce postpartum depression hence the effectiveness of midwife-led debriefing has not been much explored.

Regarding the effectiveness of debriefing five out of eight studies showed women who requested for debriefing was found to be effective when used as treatment both for women with both moderate and severe symptoms of postpartum depression as opposed to prophylactic (Shorey, *et al.*, 2021). A Midwife led interventions (debriefing) during postpartum period gave women an opportunity to discuss their experiences, hence reduced the possibility of development of postpartum depression symptoms, which therefore improved the women's quality of life and functioning (Asadzadeh *et al.*, 2020).

A meta-analysis from 37 randomized and quasi controlled trials on prevention of postpartum depression showed strong evidence on prevention of depressive symptoms especially by use of non-therapeutic interventions like psycho social support, educational classes and psychological debriefing (Martín-Gómez, *et al.*, 2020). In UK women are eligible for a medical insurance known as Medicaid that takes care of them throughout pregnancy and 60 days after delivery. There is also evidence that preventive interventions may be more acceptable than treatment among the African American women because of their socio-economic status and therefore, having high risk for depressive symptoms (Chrzan-Dętko Ś. *et al.*, 2022)

Studies done on efficacy of debriefing interventions both during antenatal and postpartum period had varied results. It showed that postpartum interventions led to decreased risk for PPD symptoms and a few others showed some signs of anxiety (O'Connor *et al.*, 2019). From randomized control trials, the three months was important both for the mother and the infant in terms of reducing the tendencies of depression (Leila, *et al.*, 2021). This was the moment for restructuring of the woman's body to normalcy, mother-child bonding state and exclusive breastfeeding for the

infant. The overall level of reduction of depressive symptoms for intervention groups was high as compared to non-intervention groups (Leila, *et al.*, 2021).

Many studies have acknowledged midwives as the closest and immediate person during and after delivery, though many studies have not looked into the effectiveness of midwife led debriefing. Analysis of studies done on effectiveness of midwife led debriefing, noted that midwives at the front-line were readily available and managed emergencies preventing complications of delivery and afterbirth (Abdollahpour, *et al.*, 2020). Debriefing was being introduced for women after childbirth with the aim of improving psychological recovery and Midwife led debriefing was timely as compared to other professionals since they were with the woman during and after childbirth and this showed positive results (Abdollahpour, *et al.*, 2020). However, little has been done to assess the effectiveness of midwife led debriefing across Nations (Asadezede *et al.*, 2020).

The midwife's characteristic includes the ability to communicate effectively, able to answer questions and give advice. It was also observed midwives were able to deal with emotional situations and personal interest in the related activity (Asadzadeh *et al.*, 2020). Systematic review on the effectiveness of midwife led debriefing and its benefits indicated that midwives who had good communication skills and had knowledge and experience on debriefing had better effects and therefore reduction of PPD among women (Abdollahpour, *et al.*, 2020). The midwives as compared to the other health care professionals were preferred by the mothers because they were patient and ready to answer their concerns which was comforting to them (Matin G'omez, *et al.*, 2020). The debriefers characteristic was evident, that it had contribution towards effectiveness of debriefing. Hence from a Meta-analytic review of studies showed debriefers who were enthusiastic, had knowledge and experience on the

subject matter impacted positively to the outcome of reduced signs and symptoms of postpartum depression (Leila, *et al.*, 2021).

2.5 Models of Debriefing

A Model is a structured stepwise approach that has been described and designed to follow through to achieve a desired goal. The model approach gives an opportunity for the facilitator to move from one phase or step to another as they progress to achieving the goal of debriefing.

2.5.1 Psychological debriefing model

The Psychological debriefing model was drawn from crisis intervention theories which dates far back to World War I (Nabisah *et al.*, 2016; Van Dyk, 2010). The Psychological debriefing model was based on three principles, that is Proximity, Immediacy and Expectancy (PIE) that was being used. The rationale for this psychological debriefing model approach was used in the management of the soldiers who were closer to the battlefield (proximity) as fast as possible (immediacy) with the powerful belief and trust that the soldiers will get back to the battlefield for a good course and active duty (expectancy) (Van Dyk, 2010).

Psychological debriefing approaches differ, and this includes different types, for example crisis intervention approaches, group psychological debriefing, critical incident stress management, and process debriefing. Psychological debriefing in a comprehensive way is defined as a set of processes that involves counseling skills, exploration and information giving, that aims to prevent the psychological morbidity and mortality associated with disaster, event or trauma (Van Dyk & Van Dyk, 2010; Taylor Miller, *et al.*, 2021).

Psychological Debriefing involves encouraging individuals in teams to speak out and share out their emotions about the trauma or event they went through. They are also encouraged to discuss individual thoughts and feelings, including their reactions with a trained professional, whom in the process provides education on traumatic stress responses and attempts to normalize these reactions (Nabisah *et al.*, 2016). Psychological debriefing interventions involve a single session, which may last to about one hour as scheduled following a traumatic event (Taylor Miller, *et al.*, 2021).

2.5.2 Mitchell's Critical Incident Stress Debriefing Model

Mitchell's model is one of the first psychological debriefing model that was developed by Mitchell Jeffrey T. in 1983. It was known as the Critical Incident Stress Management (CISM) model (Anderson *et al.*, 2020). The CISM model consist of elements that included pre-crisis education, assessment, defusing, and expert follow up. Critical Incident Stress Debriefing Model (CISD) was one of the programs within the CISM model. This then indicated that the model was one of crisis intervention approach under Critical Incident Stress Management (CISM) model. The CISD was developed specifically for small, homogeneous groups who may have gone through a traumatic event (Taylor Miller, *et al.*, 2021). This approach of debriefing was led by trained team members of 2 to 4 persons with guidance in regard to the number or the size of the group meant for debriefing. For good outcomes during the debriefing process and management, one team consist of five to seven (5-7) people and a minimum of two people in the smallest group. A CISD approach has three main objectives, and they are as follows:

- 1) To reduce the impact of traumatic incident
- 2) To facilitate normal recovery processes and to restore adaptive functions in psychologically healthy people who are distressed by an unusually disturbing event
- 3) To identify group members who might benefit from additional support services or a referral for professional care.

Critical Incident Stress Debriefing (CISD) model is a structured approach that consists of seven phases (Taylor Miller, *et al.*, 2021). These phases includes: -

1. The Introductory phase
2. The Fact phase
3. The Thoughts phase
4. The Reaction phase
5. The Symptom assessment phase
6. The Information phase and
7. The Re-entry phase

The steps outlined enables the facilitator or debriefer to bring participants to understand the process and deliver the interactive discussion as a debriefing process.

2.5.3 Dyregrov's Psychological Debriefing Model

The model in psychological debriefing is a Dyregrov's model. Dyregrov was the director of the Center of Crisis Psychology in Bergen, Norway. His main duty and activities were focused on children and families. The Dyregrov model of psychological debriefing was based on Mitchell's work (Critical Incident Stress Debriefing), though a little bit detailed. There are three main differences between the two models. The first is where Mitchell's model starts the discussion focusing on the traumatic event while Dyregrov starts his discussion of the event based on what happened before the event

occurred. He does this by asking questions like *'How did you find out about this event?'* (Richins *et al.*, 2020).

Secondly, Dyregrov focused on the cognitive decision-making process of the individual during the event. This was done by asking questions such as:- *'Why did you decide to do that?'* It was suggested that these types of questions reduce the tendency of individuals from blaming themselves for what had happened.

A third difference between the two models was that Dyregrov also focused on sensory information by asking questions like: - *'What did you hear, smell, taste and see?'*. Dyregrov's model placed more emphasis on the reaction and responses of the individuals than Mitchell's model does and it was therefore suggested to be safer for the participants of war (Nabisah *et al.*, 2016).

2.6 Summary of Literature

Literature reviewed mostly brought out the transition into motherhood through childbirth as a process of change for every woman. It also acknowledged that women go through various psychological processes in which some of them could be very traumatizing. Studies done in the western countries on debriefing and midwife led debriefing as an intervention to prevent postpartum depression brought out varied outcomes. However, in most studies there was acknowledgement for postnatal debriefing as a supportive intervention to prevent psychological problems. Based on the literature above it was evident that the prevalence of postpartum depression is on the rise. WHO (2014), identified the gap in postnatal care and it was the period that morbidities and mortalities occur. From the literature the major gap is the use of the debriefing approach that was not well structured therefore, the professionals who did the debriefing implemented differently according to their own understanding. It was

also noted that the midwives were closer and readily available to the women after childbirth. There was acknowledgement and recommendation on midwife led interventions. The knowledge contributed in the studies done cannot be underscored since it brought out information on the need for psychological care after child birth. Several studies from systematic reviews and Cochraine reviews recommend for further studies on debriefing with clear clarification and its structure of approach (O'Connor, *et al.*, 2019).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

The study was designed to investigate the effectiveness of midwife led debriefing on prevention of postpartum depression in Western region, Kenya. It aimed to achieve this by assessing their status before intervention and eventually after intervention. The methodology adopted was designed to enable the researcher to answer the research objectives. The chapter included the research design, study area, study population, sample and sampling techniques, description of research instruments, ethical considerations, piloting, data collection procedures and data analysis.

3.2 Study Design

The study adopted Quasi experimental design, with the manipulation of the independent variable and with pre and post intervention measurement. The design gave an opportunity to identify and relate events to particular exposures and defined it in regard to time. Participants were assigned to both intervention and control groups with similar characteristics. The design also enabled the researcher to observe the influence of the intervention on postpartum depression. This included observing change over time in particular subjects (WennMacker, *et al.*, 2018).

3.3 Study Area

The study was carried out in Kakamega and Bungoma counties (Kakamega and Bungoma Teaching and Referral Hospitals) in Western region, Kenya. The Hospitals were major referral health facilities receiving clients from neighbouring counties within and outside the Western region.

Kakamega and Bungoma counties were among the devolved forty-seven (47) counties in Kenya's administrative and political structure. The counties are located in western region of Kenya. Kakamega county covers an area of 3020.0 square kilometers and is the most populous rural County with a population of 1,867,579 (KNBS, 2019). The population density is estimated to be at 618/KM² (KNBS, 2019).

Kakamega county Teaching and Referral Hospital is in Lurambi sub county, within the county Headquarters. Being the only County Referral Health facility, it receives referrals from the 12 sub counties and beyond. The Hospital has a maternity with a bed capacity of 100 and estimated number of deliveries per month ranges between 500 to 700 with an average of 600 clients. Operative/ Caesarean Section cases was estimated to be 200 cases per month.

Bungoma county Referral Hospital is located in Bungoma county and within the County headquarters. The Hospital is a Referral hospital within Bungoma County and its environs. Bungoma county had a population of 1,670,570 covering a land area of 2023.9 square Kilometer and a population density of 552/ KM² (KNBS, 2019). Data from Bungoma county Teaching and Referral Hospital reported to have deliveries ranging from 350 to 550 with an average of 450 per month of which Operative deliveries range from 100 to 110.

3.4 Study Population

Casteel & Bridier, (2021) defined population as a group of individuals, objects or items from which samples are drawn for measurements and to which the study results may be generalized. Mugenda and Mugenda (2003) said that population refers to an entire group of individuals, events or objects having a common observable characteristic. This was a longitudinal study that included women of child bearing age who had gone

through childbirth. Participants that have had more than two children did not participate in the study because of repeated experience in child birth and assumed to have other coping mechanism to avert PPD. The subjects were selected based on the inclusion criteria during the study period at Kakamega and Bungoma Teaching and Referral Hospitals.

3.4.1 Inclusion and Exclusion Criteria

The inclusion criterion method was used to select study participants. The criterion was also used to exclude women from the study.

3.4.2 Inclusion Criteria

- Child bearing women between ages 18 to 49 years giving birth at term
- Women who delivered at the health facility and were within 72 hours post-delivery.
- The mother should have had her 1st or 2nd delivery.
- Resident in the study area during the study period after childbirth up to one year to prevent and reduce attrition rate

3.4.3 Exclusion Criteria

- Women who require special care and were diagnosed with mental illness
- Women who did not consent to participate in the study

3.5 Sample Size Calculation

Sampling is where a representative sample was determined from the target population. According to WHO, (2014), 22% of the mothers get postpartum depression. Therefore, 22% was the effect size.

To obtain the sample size of the intervention study and considering the effect size, the researcher used the following formula by Cohen (1992).

$$n = 2 \left[\frac{(Z_{1-\alpha} + Z_{1-\beta})}{d - \delta} \right]^2 \times p \times (1 - p)$$

Where:

δ = Is a clinically acceptable margin

n = sample size

d = the anticipated difference between two group treatment effects

p = the response rate of standard /Control group

p_o = the response rate of new treatment (intervention) group

Z = the standard normal deviate for one or two sided

For 5%, $Z_{1-\alpha} = 1.645$, $Z_{1-\beta} = 0.845$, $p = 0.22$, $p_o = 0.78$, $d = 0.2$ and $\delta = 0.1$, the sample size becomes

$$n = 2 \left[\frac{(1.645 + 0.845)}{0.2 - 0.1} \right]^2 \times 0.22 \times (1 - 0.22) = 212$$

Thus, using a 22% we obtained the sample size of the control group and the intervention group.

$$n_1 = 0.22 * 212 = 47 \text{ (Control group)}$$

$$n_2 = 0.78 * 212 = 165 \text{ (Intervention group)}$$

3.6 Sample size determination and Sampling Procedure

A sample is a subset of the total population that is of interest for the study. This "total" population is called the target population, to which the results of the study can be generalized. The sample itself was selected from a section of the target population that was accessible to the researcher, which was called the study population (Casteel & Bridier, 2021).

The study used postnatal register as the sampling frame upon which systematic Random sampling was done which was a probability sampling method in selecting the participant population. This gave equal opportunity for participants in the study whose target population were women of child bearing age.

During the study period, the client's notes were collected using the admission register to postnatal ward each day and were systematically selected. According to Taylor Miller, *et al.*, (2021) participants for debriefing should have a minimum of 5 (five) participants to a higher number of 7 (seven). Therefore, the *K*th number was calculated based on the number of the participants required from the available participants. To find *k*, divide 13 by 5 to get 2.6, rounding up to 3. From the participants identified, every 3rd participant was included in the study with the first client being randomly selected. The process was followed until all participants were attained according to the target population calculated, as long as they met the inclusion criteria and had consented to participate in the study within the study period. If any of the *K*th participant declined to participate, then the next one was picked and the next *K*th number was picked following the last picked *K*th number. Kakamega County Teaching and Referral Hospital was allocated as the intervention site while Bungoma County Teaching and Referral Hospital was allocated as non-intervention (control) group.

The researcher developed a questionnaire that captured key information like the socio demographic information and obstetric factors relevant to the study. The questionnaires were serialized starting with 001, 002, up to 212. The first participant was identified randomly then followed by selection of other clients until the target population was attained. The process was followed both for intervention (midwife-led debriefing) and non-intervention /Standard care (Control) groups. The Serial numbers

001,002 to 165 was allocated for intervention group and serial numbers 166, 167... to 212 was allocated to non-intervention/ standard care (Control) group.

3.7 Data Collection Instruments

In order to answer research questions, data were collected by use of structured questionnaires and interview schedules adapted and developed by the researcher. The questionnaire used was previously developed and its validity and reliability already tested i.e. Edinburg Postpartum Depression Scale (EPDS) and another developed by the researcher. EPDS score tool was used to collect data measuring the level of depression. Data was collected mainly by the researcher with the assistance of the trained research assistants. Data was collected from women of reproductive age (WRA) at Kakamega and Bungoma Teaching and Referral Hospitals. The inclusion criterion method was used to select the participants who were eligible and met the criterion. The main data collection techniques that were applied in this study included:

3.7.1 Questionnaires

The study employed the use of questionnaires to collect information from women who had delivered in the maternity department and at the postnatal care ward. The Researcher adapted the Edinburg Postpartum Depression Scale (EPDS) score questionnaire to assess the level of Postpartum depression among women (Appendix V). This consisted of 10 questions in a 4 Likert scale (0 to 3 points) which was answered by the mother either by self-administration if she was able to read and answer or an interview being carried out by the researcher in cases where the mother was not able to read or wanted assistance. In total it consisted of a range of 0 to 30 points; and <13 was termed as no depression while ≥ 13 was termed to have signs and symptoms of Postpartum Depression (PPD).

The researcher therefore, facilitated the questionnaires to the respondents and requested them to answer the questions sincerely. For those who could read the questionnaires, it was then given to them to fill then return them after answering all the questions. The Researcher administered the questionnaire to those who could not read and marked a tick to the response from the participant according to the choices indicated without altering.

Edinburgh Postpartum Depression Scale (EPDS)

The most widely used and assessed tool for postnatal depression is the Edinburgh Postnatal Depression Scale. Cox, Holden, and Sagovsky provided the initial description of the EPDS's development in 1987. Six of the thirteen items on the initial version of the scale were modified from pre-existing surveys. Subsequently, the EPDS was pared down to 10 elements and tested in a group of 84 new mothers. The respondent is questioned on the scale regarding their emotions during the preceding seven days. Potential answers were ranked on a Likert scale from 0 to 3, increasing in severity. This would result in a maximum score of 30 points. Using a 9/10 cut-off point, the EPDS's initial investigations yielded a positive predictive value of 73% and sensitivity and specificity of 86% and 78%, respectively. Numerous tests have been conducted across diverse cultures and nations to evaluate the psychometric qualities of the EPDS, including its sensitivity and specificity (Rahmani Ivary *et al.*, 2019).

The scale has been tested in a variety of nations, including Sweden, Australia, and England. Variations between 65% and 100% were maintained in the validation trials for the sensitivity, while variations between 49% and 100% were seen for the specificity. The wide range of outcomes observed across the many studies can be attributed to variations in the employed technique, cut off point, diagnostic criteria, and the duration between the moment of delivery and the screening. (Rahmani Ivary

et al., 2019). Research conducted in the United Kingdom, indicated that when compared to the diagnosis of major depression through psychiatry interview, the EPDS, with a cut off point of 12/13, displayed a sensitivity ranging from 65-95% and a specificity of 78-96% in the sixth week postpartum period. The instrument's sensitivity was increased to 84–100% at the cutoff point of 9/10, while its specificity was found to be 82–88%. In the perinatal period, a total score exceeding 12 indicates an increased likelihood of depression; however, this does not translate to a measure of symptom severity. When utilizing a cutoff point of 12 or 13 for depression at three months post-delivery, Boyce *et al.*, (1998) showed that the EPDS yielded a sensitivity of 100% and specificity of 95.7%; and at twelve months post-delivery, there was no change.

3.7.2 Group Discussion

The group discussion process in this study was used to aid the process of debriefing as the midwife led debriefing intervention. This included a pre-set questions and guide on what exactly was to be discussed by the participants in regard to midwife led debriefing. The researcher adapted a pre-tested Critical incident stress debriefing (CISD) model, which was a seven (7) step debriefing process in a group of postnatal mothers. The researcher adapted the model to include relevant questions towards a mother after delivery. The Midwife led debriefing was carried out by the principal investigator together with the trained research assistance. The discussion was taped and participant experiences were also noted during the debriefing.

3.8 Validity and Reliability of the Instruments

Validity refers to the significance and correctness of conclusions drawn from research findings (Mugenda & Mugenda, 2003). If an instrument measures what it says it will measure, then it is legitimate. The degree to which the data collected for the study

accurately depicts the study's variables is known as validity. The existence or absence of systematic error in the data determines it in considerable part. The degree to which data gathered with a specific tool represents a particular domain of indicator or content of a particular notion is known as content validity. The EPDS's sufficient degree of content validity indicates that each item on the scale provides a comprehensive depiction of the postnatal depression concept. A research instrument's reliability is measured by how consistently it produces data or outcomes after multiple trials (Mugenda and Mugenda, 2003). In comparison to other approaches, the researcher employed the EPDS, whose validity and reliability had been evaluated, to measure postpartum depression.

In 1987, Cox, Holden, and Sagovsky devised the Edinburgh Postnatal Depression Scale (EPDS) in response to limitations in the capacity of the then-available depression screening measures to identify postpartum depression in women. The EPDS can be used prenatally to determine a woman's risk of experiencing depression symptoms after giving birth, and it is widely used in postpartum treatment worldwide (Shorey *et al.*, 2021). The EPDS has proven to be useful in screening for depression during pregnancy as well as postpartum depression. It is valid and trustworthy in this regard. (Abdollahpour, *et al.*, 2020).

3.8.1 Pre testing of the instruments

The instruments were pre-tested in Busia County hospital to determine their appropriateness and this exercise enabled the researcher to identify the weaknesses, check for clarity and made necessary corrections. Pre-test study done in Busia County Referral Hospital, was identified as one of the hospitals termed as a referral facility and had a high number of deliveries with almost similar characteristics.

3.8.2 Reliability test

An instrument's reliability, or its consistency in measuring the things it is supposed to assess, was established by first making sure the internal constancy strategy was followed by conducting a pilot study. If a questionnaire's Cronbach's Alpha coefficient is higher than 0.70, it was deemed dependable (Bujang M.A *et al.*, 2018). Using SPSS version 26, a reliability test was conducted on the independent variables (approaches/strategies of debriefing and factors affecting midwife led debriefing), intervening variable (midwife led debriefing), and dependent variable (postpartum depression). The results are displayed in Table 3.1. In the pilot study, 21 participants, or 10% of the sample population, were included. The findings showed that every variable had a Cronbach's Alpha of more than 0.70, meeting the required level of internal consistency of data of 0.70. (Mugenda & Mugenda, 2008).

Table 3.1 Reliability test

Variable	Cronbach alpha
Approaches of debriefing	.931
Factors influencing midwife led debriefing	.883
Midwife led debriefing	.795

Source: (Researcher, 2021)

3.8.3 Validity test

The extent to which a test captures what it is intended to capture is known as data validity (Carmichael, S. B, *et al.*, 2010). Validity is defined by Mugenda and Mugenda (2008) as the extent to which the research findings derived from the data analysis accurately depict the phenomenon being studied.

Table 3.2 Test for validity

Factors	KMO test	Barlett's test of sphericity		
		Chi-Square	Df	Sig.
Approaches of debriefing	0.904	271.50	3	0.001
Factors affecting midwife led debriefing	0.816	276.48	3	0.003
Midwife led debriefing	0.885	318.41	3	0.029

Extraction Method: Principal Component Analysis.

Source: Researcher, 2021

The Kaiser-Meyer-Olkin (KMO) measure of sampling, as presented in Table 3.2, sufficiently revealed a KMO value of larger than 0.5, indicating that the sample size was sufficient to treat the sampling data as normally distributed. The null hypothesis that the "item to item correlation matrix based on the responses received from respondents for all the effective variables was an identity matrix" was tested using Bartlett's test of sphericity. The Bartlett's test was assessed using the chi-square test, and the results for all variables are displayed in Table 3.2. All of the results were significant at the <0.05 level of significance, meaning that the null hypothesis is rejected.

3.9 Data Collection Procedures

In order to answer research questions, data collection was done both by use of structured questionnaires to capture socio-demographic data, obstetric data and to assess for maternal depression using Edinburg Postnatal Depression Scale (EPDS). Data collection is a very important phase of the study, because it enables the researcher to answer research questions hence, gaining insight on the research topic (Taherdoost, 2021)

3.9.1 Pre intervention activities

3.9.1.1 Training of Research Assistants

Research assistants were identified in the two hospitals for the purpose of data collection and the midwife-led debriefing intervention. Since the intervention was midwife led debriefing, midwives were identified as research assistance based on their interest and commitment in the process of the research. The process of identification included an advertisement, shortlisting and interview to give those who were willing an equal chance to participate. The principal investigator come up with the selection criteria. Upon selection, the research assistance for the intervention group were given a questionnaire to evaluate knowledge in regard to postpartum depression and midwife led debriefing. After which they were trained and later a post test was given to assess understanding on midwife-led debriefing process.

Pre-test: All the research assistants who were midwives understood what postpartum depression was and they were knowledgeable on the signs and symptoms. They however, gave different definitions and understanding of midwife led debriefing. From their description each one of them understood midwife led debriefing differently, though they had an idea that the midwife was involved in talking with the mother post-delivery to help them prevent postpartum depression. All research assistants didn't know of any approach that could be used during debriefing nor any type of the debriefing models. In regard to how debriefing could be done, the research assistants (midwives) acknowledged that they had no idea on the process of debriefing. Based on their understanding of the significance of postpartum depression, they all proposed that midwife led debriefing was necessary to avert the upward trend of the condition. Simulation was used during training of the research assistants to ensure good understanding of the Midwife led debriefing process.

Post-test: Upon completion of the training the research assistants (midwives) were given the questionnaire to test their understanding on the debriefing approaches, models and the process of debriefing.

3.9.1.2 Intervention Activities

The intervention was the actual midwife led debriefing that was conducted by the principal investigator assisted by trained research assistants in the experimental group. The Research assistants started by collecting socio demographic and obstetric data per individual participant. Baseline assessment was done by use of EPDS score and this was then followed by Midwife led debriefing.

Before data collection was done, the principal investigator and research assistant introduces self, and explained the purpose of study including; benefits of study, procedure, risks involved, confidentiality, willingness to participate and whom to contact as the principal investigator. The researcher then obtained individual consent, both verbal and written and requested participants to allow to tape the proceedings of the discussion without any video taken. Each subject was given a unique number. The 2nd researcher took notes and taping the discussions. Data collection started upon acceptance and informed consent by the individual participants.

3.9.1.3 Process of executing the midwife led debriefing intervention

The process ensured the principal investigator, research assistants addressed entry requirements that included participants were placed in a conducive and suitable environment, introduced self and the organization that took approximately 1 to 2 minutes. They then had to explain the purpose of the study using the provided questions by order given. The step-by-step interview during the Midwife led debriefing was used and this entailed the seven stages of critical incident stress debriefing (CISD) model. The Researchers ensured to reach enough responses allowing participants to

ventilate and discuss freely during the whole process. Finally, the interview and discussion concluded and the participants were appreciated for their time and participation. They were also reminded of the follow up and were encouraged to seek for further clarification when need arises.

3.9.1.4 Midwife led Debriefing Process

The researcher adapted the 7- step debriefing process from Critical Incident Stress Debriefing (CISD) Model (Appendix VI). This involved seven steps starting from entry to planning for departure. Qualitative data was collected through taping and writing in a notebook by the second research assistant. This enabled the researcher to probe more and allow elaborate discussion.

Intervention Group: The intervention group participants were identified based on the inclusion criteria and within 72 hours, baseline assessment was done. The intervention group received a single standardized midwife led debriefing session in a specified and conducive room. Participants were then coded with ‘Yes’ for those who had EPDS scores ≥ 13 (with symptoms of depression) and those who had < 13 (without symptoms of depression) were coded as ‘No’. This enabled the researcher during follow-up to ascertain change to either depression or non-depression symptoms.

Participants who were identified to have more needs and those that requested for more information were given an opportunity for individual discussion while still in the postnatal ward. The Participants therefore, were given instructions on what to report, when to get back to the health facility if they felt the need. They were allowed to go home and those who were coded ‘No’ (EPDS = < 13) were then followed after three months later for the follow-up assessment. Participants who were coded ‘Yes’ (EPDS = ≥ 13) were followed up after 2 weeks, 4 weeks, 8 weeks and at 12 weeks. At three months all participants were assessed using EPDS score.

The second assessment was done both for all participants on intervention and control groups regardless of their scores. However, the assessment was to follow the initial coding of 'Yes' (≥ 13) and 'No' (< 13), this was to evaluate for any change whether positive or negative. From this second assessment, there was no change in both intervention and control groups. Their scores remained the same even those who had EPDS ≥ 13 . Participants above ≥ 13 were still followed monthly until the 6th month where another assessment was done. They were then followed until nine months. All participants were assessed at three months, six months and at nine months. Mothers whose EPDS scores remained above ≥ 13 and had severe symptoms of depression were referred for review.

Research assistants who were midwives, carried out this procedure. The debriefing employed Mitchel's Critical Incident Stress Debriefing (CISD) Model's seven essential steps, modified for use in postpartum group sessions with women. The follow-up involved an in-depth discussion about the needs and concerns of the participants.

Non-Intervention/ Control Group: This group was also identified within 72 hours and the pre-test assessments done by use of EPDS and another questionnaire to capture relevant data, after which they received Standard postnatal care and were followed up after every three months for nine months for the post-test assessments using Edinburg Postpartum Depression Scale tool.

3.10.1.5 Summary of Participant Selection and intervention

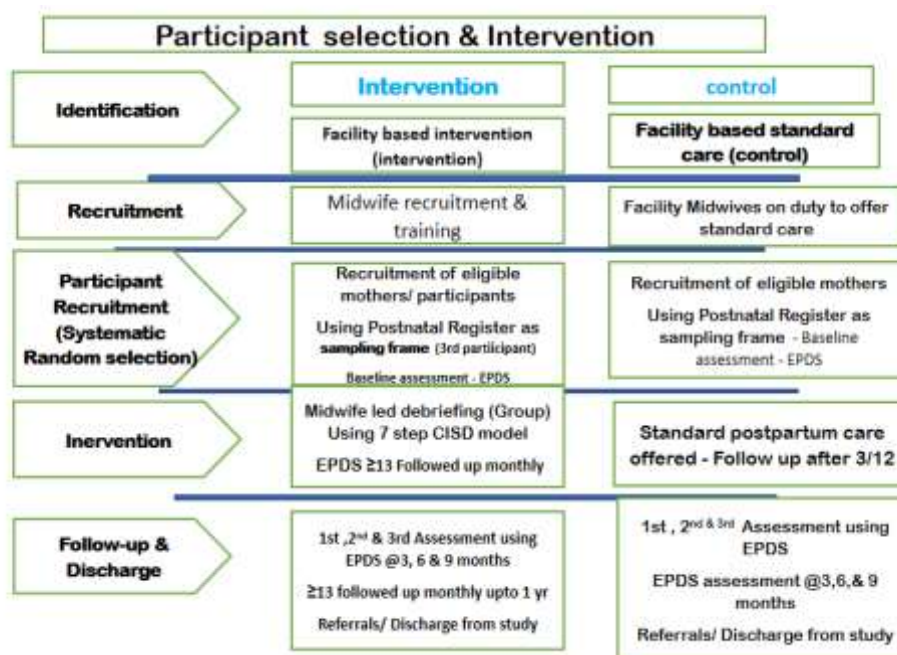


Figure 3.1 Participant Selection Process

3.10 Data storage

All data collected from the study participants was sorted and those well completed were coded and entered into a computer software. The hard copies were kept under key and lock while the electronic data stored both in the storage disk and computer secured with a password only known by the principal investigator before analysis.

3.11 Data Analysis

Data analysis is a very critical stage of research because it guides in drawing up conclusions and predictions made. This was a process of evaluating data using analytical and statistical tools with the sole aim of transforming raw data into understandable information. It entailed interpreting collected data by applying logical and analytical reasoning to identify trends, correlations, or patterns. Statistical synthesis gives meaning to the numbers. The results and inferences are meaningful if

proper statistical tests are used (Zulfiqar Ali & Bala Bhaskar, 2016). Analysis was done using statistical package for social sciences (SPSS v. 26.0).

A fundamental description of the quantitative data was obtained through the use of descriptive statistics, which also organized and summarized the data to enable the meaningful interpretation and conclusion-making process. Descriptive statistics, such as measures of central tendency, dispersion, and relation to yield correlation coefficients, were used to assess the participant demographic data. This is why data on frequencies, means, ranges, and standard deviations was collected.

Inferential statistics was used to ensure that the researcher was able to draw inferences from the data collected. This allowed to compare the results of the postpartum mothers who were in the intervention group versus those who were in the control group in relation to postpartum depression.

All moderating variables were subjected to multiple regression model analysis to determine their effect on postpartum depression.

Correlation tests was carried out to establish the strength of relationships of the different groups and the Pearson's correlation coefficient was used to determine strength of association between the individual characteristics, and the outcome that is with or without postpartum depression. Logistic regression model was used to assess the influence between time-based outcome variables, social cultural and demographic characteristics of the participants.

Table 3.3 Data analysis

S/NO.	Objective	Method	Analysis
1	To examine the effectiveness of the approaches used in midwife-led debriefing on postpartum depression	Interview guide	Chi-square Analysis, Thematic Analysis
2	To assess factors influencing Midwife led debriefing on postpartum depression	Questionnaires EPDS Check list	Descriptive analysis, Pearson's chi-square analysis, Odds Ratio, Thematic Analysis
3	To determine the outcome of midwife led debriefing on postpartum depression	Questionnaires EPDS check list	Descriptive analysis, t-test, Regression analysis
4	To develop Midwife led debriefing protocol on Prevention of postpartum depression	Document review	Study Results

3.12 Ethical Consideration

According to the Helsinki declaration any research conducted on human subjects should ensure human rights of the participants are protected. This includes the privacy and dignity of participants which is considered to the highest level and that the data collected should be kept anonymous (WMA 2013). Therefore, Ethical approval to conduct the study was obtained from the Institutional Ethics Review Committee (IERC) of Masinde Muliro University of Science and Technology (Appendix VII). This was important to ensure that all the protocols in regard to conducting the study was conformed to. Ethical issues of the study focused on ensuring excellent research practices in accordance to global research standards. This then paved way to obtain Research permit from National Commission of Science Technology and Innovation (NACOSTI) (Appendix IX). Clearance was obtained from both Kakamega and Bungoma County Health offices and the County Teaching and Referral Hospitals

(Appendix X; XI; XII). The study subjects were educated on their rights in the study. Informed verbal and written consent were obtained from the respondents and they were given assurances that their participation was voluntary and confidential (Appendix I). The participants were therefore assured that results would only be used for academic and policy issues and not to deny them any service. Their names would not be used in any publications and information would be kept anonymous at all stages of the study.

Autonomy

Autonomy is the principle that puts demand on the researcher to ensure that subjects are free to make their own decisions without being coerced when the study is ongoing. Participants have the right to make whichever decision as their choice and the researcher needs to acknowledge and respect. It is therefore important as part of the process where the researcher provides adequate information to participants prior to enable them make informed consent. The participants should be legally authorized to make such consent and for those with reduced autonomy, the researcher endeavors to protect their right. In this study, informed consent was sought from the participants after taking them through the consent form. A written consent form was given to the participants who were women of reproductive age after child birth and were required to sign or thump print on the consent form without writing their name after being informed of the purpose of the study. Any benefits or risks associated with the study was discussed in the process of consenting and the participants were allowed to withdraw from the study at any point without suffering any consequences (Niksalehi *et al.*, 2018).

The participants were informed that they were at liberty to withdraw from the study at any stage and it was completely voluntary to participate in the study. In the process of conducting the study, the participants were protected from discomfort and

disadvantages as a result of being included in the study and willingly providing their information. In the analysis of data from the questionnaires each questionnaire was coded and given a number to ensure anonymity.

Respect

Because the researcher believed that respect for participants was crucial, they always showed respect in all of their interactions with them, including by not passing judgment on them or discrediting them and by making sure that their opinions were accurately recorded and taken into account during the assessment process. Ensuring the protection of those with limited autonomy, as well as those who were marginalized or vulnerable, is a crucial aspect of participant respect (WMA, 2013).

Beneficence

The participants were guaranteed to be free from all forms of harm, including psychological, social, economic, and bodily, thanks to the principle of beneficence. This was accomplished by framing the inquiries in an understanding and impartial manner. Participants were told that they had the option to opt out of the study at any time if the interview or implementation process made them uncomfortable. In order to safeguard participants from exploitation, the study's protocols were thoroughly described prior to the commencement of data collection. They were also told that while there would be no immediate benefits to their participation in the study, information gathered would aid in client management, guide midwives in the provision of maternity services, and inform policy, which in turn would aid in the creation of health care standards and protocols.

Justice

This principle applies to fair treatment and right to privacy. The study was non-discriminatory following the set inclusion and exclusion criteria, and this gave opportunity to those who were eligible to participate in the study without any bias.

Confidentiality

Participant's information was kept confidential throughout the study. The data collected from individual participants was kept anonymous by using numbers to identify clients rather than names. Research assistance who come in contact with participant information signed pledges of confidentiality. Only the principal investigator kept the data collected in storage during the whole process of the study under strict confidentiality.

Informed consent

The four key essentials of informed consent were used during the study. Participants were given the necessary information, ensured that they understood the information, and voluntarily participated in the study. They were also given information on the right to withdraw at any stage of the study without intimidation or prejudice. Participants of 18 years and above were allowed to participate upon giving voluntary consent.

3.13 Data Dissemination

The data results and information generated from the study was disseminated in scientific conferences and stakeholder's forums. The findings will also be published in refereed journals for learning and general public.

CHAPTER FOUR

RESULTS

4.1 Overview

The chapter presents the study findings and discussions of the study. Data analysis was done based on the objectives; to examine the effectiveness of the approaches used in midwife led debriefing on postpartum depression, to assess factors influencing Midwife led debriefing on prevention of postpartum depression, to determine the outcome of midwife led debriefing on Prevention of postpartum depression, and to propose a Midwife led debriefing protocol. Descriptive statistical and regression analysis was employed in presentation of the findings. The chapter also presents inferences drawn from the analysis.

4.2 Response Rate

In this study, out of a total of 212 questionnaires that were distributed to the sampled respondents, 212 of them were filled and returned during the baseline assessment and recruitment of participants, therefore being 100% response rate. Participants were then followed up for assessment after intervention up to one year. Out of 212 participants that were in the initial assessment 202 were contacted, assessed and questionnaires fully filled during follow-up. In the process of the study six participants in the intervention group and four in the control group were lost because the researcher could not trace them, since they had relocated from the study area and were no longer willing to continue with the study. Therefore, 202 participants who remained were followed and questionnaires correctly filled. These were the participants that were followed with assessments of postpartum depression scores every three months for one year and it was a response rate of 95.3%. According to Holtom *et al.*, (2022), a response rate

above 70% is acceptable and information can be generalizable. Hence, this study had a response rate of 95.3% which was good.

Table 4.1 Questionnaire Return Rate (Baseline assessment)

		Frequency	Percent
Before follow-up (Baseline)	Returned	212	100
	Not Returned	00	0
	Total	212	100.0
		Frequency	Percent
After Follow-up	Returned	202	95.3
	Not Returned	10	4.7
	Total	212	100.0

Source: Researcher, 2021

Table 4.2 Questionnaire Return Rate (follow -up after 9 months)

		Frequency	Percent
Follow-up (intervention Group)	Returned	159	96.4
	Not Returned	06	3.6
	Total	165	100.0 /78*
		Frequency	Percent
Follow-up (Control)	Returned	43	91.5
	Not Returned	04	8.5
	Total	47	100.0 /22*

Source: Researcher, 2021 * (Cumulative %, Both Intervention and control)

The study found that the high response rate was because of the researcher's use of a variety of strategic tactics. For instance, the researcher identified research assistants who were passionate about and interested in being a part of the research process. The principal investigator oversaw and conducted the interview schedules, while the research assistants were employed to recruit participants, distribute materials, administer assessments, and gather completed questionnaires. Participants were given information on the follow up and those who were willing to participate throughout the study gave consent. During the last assessment, response rate was at 202 (95.3 %) both for intervention and control group i.e., 75% and 20.3% respectively. Those who were lost during the follow up was 4.7%, and this was due to inability to trace them and

others were no longer willing to participate in the study. This group then were excluded in the analysis of data and reporting.

4.3 Demographic Characteristics of the respondents

The information on the age, marital status, housing arrangement, degree of education, employment, religion, parity, and mode of delivery of the respondents was analyzed in this section. The primary goal of this was to identify any patterns in the respondent profile that could be connected to the study's variables and influence on individual postpartum depression status.

Table 4. 3 Demographic characteristics

		Intervention n (%)	Control (n) (%)	Without Depression (<13)n(%)	With Depression (≥13) n (%)
Age	18-34	104 (49.1)	29(13.7)	100 (47.2)	43(20.3)
	35-49	61(28.7)	18(8.5)	50(23.6)	19(8.9)
Current Marital Status of the Respondent	Single	36(17)	10(4.7)	32(15.1)	14(6.6)
	Married	117(55.2)	33(15.6)	104(49.2)	45(21.2)
	Divorced/separated	5(2.3)	2(.9)	5(2.4)	2(0.9)
	Widowed	3(.01)	1(.47)	2(0.9)	2(0.9)
	Cohabiting	4(1.8)	1(.47)	4(1.9)	2(0.9)
Currently living with partner/spouse/husband	Yes	78(36.8)	22(10.4)	69(32.5)	31(14.6)
	No	87(42)	25(17.8)	78(36.7)	34(16)
Highest Level of Education	None	57(27)	15(7.1)	50(23.5)	22(10)
	Primary	59(27.8)	17(8)	52(24.5)	23(10.8)
	Secondary	26(12.3)	8(3.8)	24(11)	11(5.2)
Current Occupation	College/University	23(10.8)	7(3.3)	21(9.9)	9(4.2)
	House Wife	82(38.7)	23(10.8)	73(34)	32(15.1)
	Student	16(7.5)	5(2.4)	15(7.1)	6(2.8)
	Self employed	30(14.2)	8(3.8)	26(7.1)	12(5.6)
	Formal employment	16(7.5)	4(1.9)	14(6.6)	6(2.8)
	Casual labour	19(8.9)	6(2.8)	17(8)	8(3.7)
	Unemployed	2(.9)	1(.47)	2(0.9)	1(0.47)
Religion of the Respondent	Catholic	50(23.5)	14(6.6)	44(20.7)	20(9.4)
	Protestant	113(53.3)	32(15.1)	101(47.6)	44(20.7)
	Muslim	2(.9)	1(.47)	2(0.9)	1(0.47)
Mode of delivery	SVD (Vaginal)	129(60.8)	37(17.5)	115(54)	51(24)
	C/S	32(15.1)	9(4.2)	28(13)	12(5.6)
	AVD (Assisted Vaginal Delivery) / Vacuum	4(1.9)	1(.47)		
				4(1.8)	2(0.9)
Parity	Para 1	117(55)	33(15.6)	104(49)	46(21.6)
	Para 2	48(22.6)	14(6.6)	43(20)	19(8.9)

From the demographic characteristics, it was evident that majority (62.8%) of the women were between the ages of 18 to 34. This was possibly seen because the study targeted women who were having their first and second baby, indicating that majority of them were young mothers and 70.8% were married. The level of education ranged between primary school (35.8%) and no formal education at 34.1%. A few of them had attained secondary and tertiary education i.e., 16.1% and 14% respectively. This showed that majority (70%) of participants had low or no formal education.

4.4 Prevalence of postpartum depression

Edinburg postpartum depression scale (EPDS) tool was used to measure the scores for the baseline assessment results and this determined the state of postpartum depression among the study participants. The study therefore, showed the prevalence of depression on women after childbirth was 30.7%.

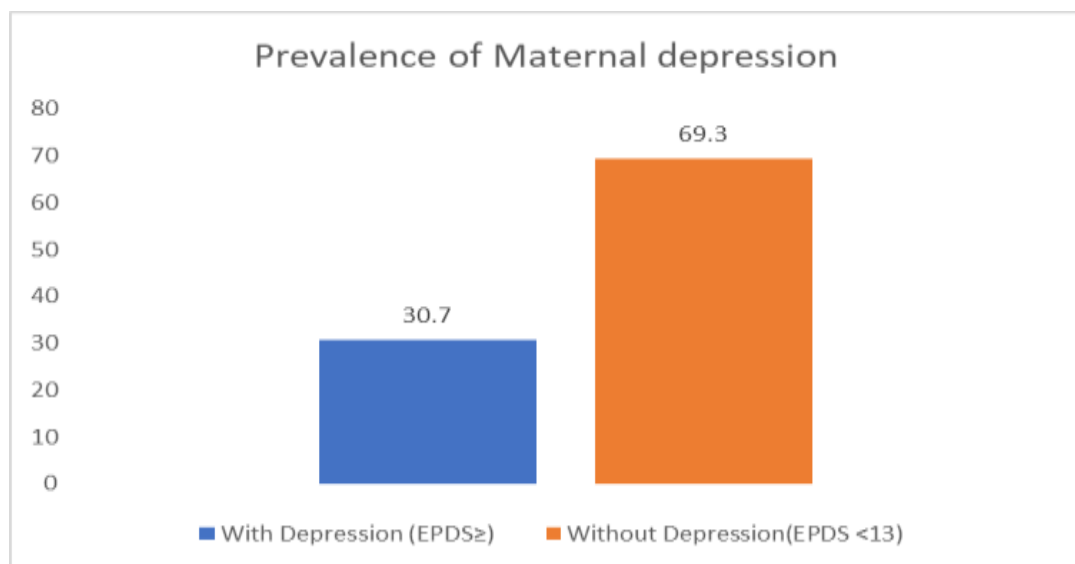


Figure 4.1: Baseline survey on maternal depression

The participants who scored both EPDS < 13 and ≥ 13, were identified and coded into groups for follow-up and this enabled the researcher to examine the change during follow-up. From the study findings during follow up the group that had EPDS scores

< 13 didn't have a negative change, in any case majority had their scores reducing even more below 13 points. This indicated improvement and maintenance of no depression signs and symptoms (being <13 EPDS scores). On the other group, participants who had EPDS score ≥ 13 were 65 (30.7%) with depression were also followed up. The total of 65 participants formed the basis of follow up and analysis to determine effectiveness of midwife led debriefing, since they had symptoms of postpartum depression based on the EPDS of ≥ 13 .

4.5 Effectiveness of individual and group approaches of debriefing on postpartum depression

The two approaches that were used in midwife led debriefing was by group and individual. However, the main approach / strategy was group debriefing which gave a good opportunity for participants to learn from one another and demystify the fact of individual suffering and pain. Groups of eight to ten (8- 10) participants were debriefed by two midwives and the principal investigator, making the researchers three for every group of participants. Based on their behaviours and Edinburg Postpartum Depression Scale (EPDS) scores, some participants requested for individual discussion and they were given the opportunity. Participants were followed up individually monthly and as groups quarterly.

According to Asadzadeh *et al.*, (2020), Participants preferred group debriefing and it was seen to be more effeccient and cost effective. From the group discussion, participants verbalized the importance of group and felt at ease with colleagues who had gone through the same process of labour and delivery. So therefore, they acknowledged to be equals and they learned through each other's unique experiences.

Using Pearson’s chi-squared test, analysis on the most preferred method was done so as to determine effectiveness of which debriefing method was suitable in prevention of postpartum depression. From the analysis, group method of intervention demonstrated a higher inclination towards reduction of postpartum depression, as evidenced by their stronger agreements ($\chi^2 = 10.41, p = 0.02 < 0.05$), whereas individual method was weak and not significant ($\chi^2 = 2.71, p = 0.13 > 0.05$) (Table 4.4).

Table 4.4: Effectiveness of approaches of debriefing on postpartum depression

Approaches of debriefing towards prevention of postpartum depression	Chi-square value	p (sig)
Group approach	10.41	0.02
Individual approach	2.71	0.13

Source: (Researcher, 2021)

This study showed that grouping method of debriefing was significant ($P=0.02$) and therefore, supported prevention of postpartum depression. From the midwife led debriefing discussion, participants also verbalized that group debriefing was more beneficial since they had an opportunity to listen to others as they shared their previous experiences as one client said as follows:

Theme: Labour Experience

Emphasis on normalization of women’s response to stressful situation i.e., Labour and delivery following group midwife led debriefing

Relieved, Relaxed, Happy, Fear, Anxiety

“This discussion has given me an opportunity to listen to others and I feel relieved, I now know I didn’t go through painful labor alone and that I can be well after labor and delivery...” (Para 1 mother)

“This was my second pregnancy, but I had not had an opportunity to discuss with others and even with experts (midwives) what we go through during childbirth. I feel happy and I know people have fears as I did, but I feel relieved and relaxed after the discussion....”
(Para 2 mother)

“I now feel relaxed knowing that I was so sad and worried having been operated and I had felt like I was weak and a lesser woman, but after hearing stories from other women’s experience and the midwives have explained that CS is another mode of delivery... .. I feel relieved and relaxed” (Para 2 mother)

Study participants felt relieved, after having the opportunity to discuss their experiences and they appreciated that labour and delivery was a normal process of child bearing. Some of the participants had expressed their worries and fears and were able to get responses both from other participants who had previous experiences and also from the midwives who were knowledgeable and they acknowledged to have received expert information.

Participants expressed satisfaction and wished this process of debriefing and discussion would be part of the services to all women after labour and delivery. They expressed that it gave them an opportunity to express themselves, learn from colleagues and even from the experts.

4.6 Factors affecting Midwife led debriefing on postpartum depression

Factors that influence midwife-led debriefing on the postpartum depression were categorized into different groups such as obstetric factors, social-cultural factors, health facility factors, and midwife-related factors.

4.6.1 Effects of Obstetric factors on postpartum depression

The following study results focused on effects of obstetric factors on prevention of postpartum depression when participants were exposed to midwife led debriefing and in comparison, with those in the control group. Participants who were coded as

depressed after baseline assessment using Edinburg Postpartum Depression Scale (EPDS) of ≥ 13 points were coded differently and followed up monthly with individual midwife led debriefing and assessments done after every three months to monitor their progress. Those participants in the intervention group who scored EPDS scores < 13 , were also followed up quarterly to assess if there would be any deviation to depression. In the control group, participants who were also classified as depressed (≥ 13) were followed up after every three months following the standard care provided to them. All participants in the study were followed up to assess any positive or negative change for example, moving from non- depression < 13 (without depression) to ≥ 13 (with depression) or vice vasa.

The effects of obstetric factors on prevention of postpartum depression were done through the use of Pearson's chi-squared test analysis. The difference in changes due to obstetric factors was summarized in in Table 4.5.

Table 4.5 Effects of Mode of delivery on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49 (49+16)		Differe nce
		Depresse d (%)	Not Depresse d (%)	Depresse d (%)	Improved during follow up (%)	p-value
Interve ntion	Caesarea n	21(12.7)	24(14.6)	14(28.6)	7(14.3)	0.014
	Vaginal	28(17.0)	92(55.7)	13(22.4)	15(30.6)	
		Baseline (n=47)	assessment	Follow up after 3 months (n=16)		
Contro l	Caesarea n	6(12.8)	7(14.9)	5 (31.3)	1(6.3)	0.072
	Vaginal	10(21.3)	24(51.0)	9 (56.3)	1(6.3)	

The study indicated some improved difference in the percentage of participants who were depressed before and after intervention i.e. cesarean section (12.7%); Vaginal delivery (17.0%) being 29.7% of total participants on intervention group. This was the percentage out of the total of 165 participants on the intervention group. During follow up at three and six months, there was no change. However, later after nine months and during follow-up, there was improvement of 14.3% for cesarean section group and Vaginal delivery by 30.6%. From the analysis women who underwent caesarean section (CS), though with low percentage were more likely to have midwife led debriefing intervention beneficial and they improved as compared to those who had Vaginal delivery as shown from the p - value significance of $p= 0.014 (<0.05)$. The cesarean section (CS) participants who were depressed were initially twenty-one (21) before intervention and decreased to fourteen (14) in numbers i.e improvement from depression to non-depression by 33%. Women who underwent CS felt sad and sometimes needed more support because of their mode of delivery and its associated factors like feeling of inadequacy and having a CS scar that would take some time to heal. The results agree with a systematic review of fifteen (15) journals that indicated that mothers who had cesarean section as their mode of delivery were more likely to benefit from debriefing as compared to those who delivered via spontaneous Vaginal delivery (SVD) (Budiman M.E *et al.*, 2019). Participants who had spontaneous vertex delivery (SVD) as their mode of delivery had also more than 50% improvement among those who had EPDS ≥ 13 .

From the control group, some participants had Edinburg Postpartum Depression Scale (EPDS) scores of ≥ 13 which still indicated signs and symptoms of depression and others < 13 points indicating no depression in both CS and spontaneous vaginal delivery. During follow up, three months later the change was very minimal with the

p -value = 0.07 (> 0.05) indicating no significance. This outcome could be as a result of no intervention of midwife led debriefing and participants were under standard care. The slight change in Caesarean section and Vaginal delivery was not significant since there was only improvement of one participant (6.3%) moving from depression to non-depression according the EPDS scores. According to Lisanne *et al.*, (2018), on preventing post-traumatic stress following childbirth, it was reported that mothers who had EPDS of < 13 did not need to be debriefed or be given any psychological intervention unless the client requested for the same.

Theme: Feelings and reactions

Fear of the unknown, anxious, worried, sad, irritable and confusion

“When I was told that I was being taken to theatre for operation I was really worried and I saw myself not making it and I was so sad especially when I was waiting at the entrance of the theatre It was so scary; I didn’t know I would come out alive with my baby” (Para 1mother)

*“Going for an operation is like eeeee..... you are bargaining with life and death, **niliona kwisha mimi** (I saw myself death), I felt so low and worried that I was going to die, I just kept quite as I was very sad...” (Para 2 mother)*

Participants felt labour pains to be very stressful and thought of events after delivery was even worse because majority of them experienced discomfort and they were not able to sleep well because of pain. Others could not understand their feelings because they felt anxious, sad and sometimes irritable, especially when they needed to sleep and the baby would cry. This made them so confused and sad because they had to handle both their personal care at the same time the care for the baby.

Participants who were taken to theatre for caesarean section (CS), felt sad, and they felt some inadequacy of not being a real woman, as they had heard people say. They were extremely confused of how they would do their activities especially having to take care of the baby as well.

The mean differences on the effect of parity on postpartum depression were determined through the use of Pearson's chi-squared test analysis. The summary of the changes before and after the intervention is shown in Table 4.6.

From the discussion participants expressed different feelings following cesarean section as verbalized by the mothers.

Table 4.6 Effect of Parity on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49 (49+16)		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
Intervention	primigravida	30(18.2)	40(24.2)	20(40.8)	10(20.5)	0.004
	multiparous	19(11.5)	76(46.1)	13(26.5)	6(12.2)	
		Baseline (n=47)	assessment	Follow up after 3 months (n=16)		
Control	primigravida	7(14.9)	13(27.7)	5 (31.2)	2(12.5)	0.0163
	multiparous	9(19.1)	18(38.3)	8 (50.0)	1(6.3)	

The study shows that being a first-time mother (Primigravida) is more likely to be influenced by midwife led debriefing as compared to Multiparous mothers. The results show change in those who had depression before and improvement after intervention. The analysis of change to non-depression was by 20.5% (Primigravida) and 12.2% (Multiparous). Results indicated there was significance in primigravida depression status; which may have been influenced positively by midwife led debriefing as an intervention; p -value of 0.004 (< 0.05).

This result agrees with the study done by Martín-Gómez, *et al.*, 2019 where the young mothers especially first-time mothers (Primigravidas) benefited from midwife led psychological care to control and reduce postpartum depression. A critical review of twelve (12) articles by Abdollahpour *et al.*, 2020 showed that eight articles indicated

Midwife led debriefing reduced postpartum depression on primigravida mothers by 76.4%. This indicates that the first-time mothers were more likely to be receptive and therefore they received positive effects; hence improvement and reduction of depressive symptoms.

The control group of both Primigravidas and multiparous had some slight improvement with a *p*-value of 0.0163 (<0.05). This shows significance though with low magnitude and change.

The mean differences on the effect of sex of the baby on postpartum depression were determined through the use of Pearson’s chi-squared test analysis. The summary of the changes before and after the intervention is shown in table 4.7.

Table 4.7 Effect of sex of the baby on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed (≥13) n(%)	Not Depressed (<13) n(%)	Depressed (≥13) n(%)	Improved during follow up (<13) (%)	p-value
Treatment	Boy	17(10.3)	49(29.7)	10(20.4)	7(14.3)	0.057
	Girl	32(19.4)	67(40.6)	23(46.9)	9(18.4)	
Control		Baseline (n=47)	assessment	Follow up after 3 months (n=16)		0.0251
	Boy	7(14.9)	15(31.9)	6 (37.5)	1(6.2)	
	Girl	9(19.1)	16(34.1)	9 (56.3)	0(0.0)	

The study did not show any significance based on whether the participant mother had delivered a baby girl or a baby boy. However, from the verbal discussion, those mothers who had delivered the second baby being a girl and had the first one as a girl

were worried and feared the reaction of the husband and the family members. This made them anxious and worried after birth.

After midwife led debriefing intervention, some participants felt relieved that they were not the only one that had the challenge of their relatives in regard to the sex of the baby. During the discussion session, the participants who were anticipating to bear a male child as their second born were disappointed and sad of what awaited them at home in terms of mistreatment and lack of support. Therefore, the midwife led debriefing gave them an opportunity to ventilate their fears and they felt reassured and relaxed.

A summary of the effect of obstetric factors on postpartum depression was done through the use of odds ratio analysis so as to determine which variable is more significant (Table 4.8).

Table 4.8 Summary on effects of Obstetric factors on postpartum depression

			Control	Intervention	Odds (OR)	P-Value
Mode of delivery	SVD	<13	2	22	0.1753	0.001
	C/S	≥13	14	27		
		Totals	16	49		
Parity	Para 1	<13	3	16	0.4760	0.023
	Para 2	≥13	13	33		
		Totals	16	49		
Sex of the baby	Male	<13	1	16	0.1375	0.037
	Female	≥13	15	33		
		Totals	16	49		

With reference to mode of delivery, OR=0.1753 (<1) which means that the control group was less likely to experience no depression. With the introduction of the intervention (midwife led debriefing), the intervention group was more likely to experience no depression after debriefing was done. This demonstrates that the use of midwife led debriefing had a significant change on those who were depressed, thus mode of delivery affects the uptake of mid wife led debriefing. With a 95% CI, mode

of delivery is statistically significant as depicted by p - value $0.001 < 0.05$, thus mode of delivery plays a significant role in midwife led debriefing on prevention postpartum depression.

With regards to parity, results showed that the $OR = 0.4760 < 1$, means that the control group was less likely to experience no depression. With the introduction of the intervention (debriefing), the intervention group was more likely to experience no depression after midwife led debriefing was done. The results show there is significance with reference to parity. With a 95% CI, parity is statistically significant as represented by p value = $0.023 < 0.05$, thus parity plays a role in midwife led debriefing on postpartum depression.

Finally, study results with reference to the sex of the baby showed that the $OR = 0.0767 < 1$, which implies that the control group was less likely to experience no depression. On the other hand, with the introduction of the intervention (debriefing), the intervention group was more likely to experience no depression after midwife led debriefing was done. A 95% CI, infant sex is statistically significant as depicted by $p = 0.037 < 0.05$, thus infant sex plays some role in midwife led debriefing on prevention of postpartum depression.

4.6.2 Socio-demographic factors

The influence of age in prevention of postpartum depression were done through the use of Pearson's chi-squared test analysis. The difference in changes due to age was summarized in in Table 4.9.

Table 4.9 Effects of age on Postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
Intervention	18-34	31(18.8)	43(26.1)	17(34.7)	14(28.6)	0.006
	35-49	18(10.9)	73(44.2)	10(20.4)	8(16.3)	
		Baseline assessment (n=47)		Follow up after 3 months (n=16)		
Control	18-34	10(21.3)	17(36.2)	6 (37.5)	4(25.0)	0.017
	35-49	6(12.7)	14(29.8)	5 (31.3)	1(6.2)	

From the study results as shown on table 4.12, participants who were younger ranging between 18 to 34 years, improved greatly after midwife led debriefing intervention. This was evident from the results before and after intervention respectively. Out of the 29.7% who had depression according to EPDS (≥ 13), 44.9% of the depressed participants, improved to no depression three months after midwife led debriefing. This indicated about 50% change on improvement from depression to reduction of depression as per the EPDS of ≥ 13 to < 13 points. The analysis showed a significance of $p\text{-value} = 0.006 (< 0.05)$. This change informs that the young participants (18-34) years were more likely to be influenced by Midwife led debriefing positively. The control group on the other hand didn't show much difference, though with some slight change.

The effect of educational level on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to educational level was summarized in in Table 4.10.

Table 4.10 The effect of educational level on Postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed (≥13) n (%)	Not Depressed (<13) n (%)	Depressed (≥13) n (%)	Improved during follow up (%)	p-value
Intervention	No formal education	6(3.6)	23(13.9)	4(8.2)	2(4.1)	0.002
	Primary	11(6.7)	24(14.5)	8(16.3)	3(6.1)	
	Secondary	22(13.3)	44(26.7)	15(30.6)	7(14.3)	
	College/University	10(6.1)	25(15.2)	7(14.3)	3(6.1)	
		Baseline assessment (n=47)		Follow up after 3 months (n=16)		
Control	No formal education	2(4.3)	3(6.4)	2(12.5)	0(0.0)	0.052
	Primary	4(8.5)	9(19.1)	3(18.7)	1(6.3)	
	Secondary	5(10.6)	12(25.5)	3(18.7)	2(12.5)	
	College/University	5(10.6)	7(14.9)	2(12.5)	3(18.8)	

The results show Participants with no formal education were few (17.5%), however it also indicated that they were more likely to be influenced by midwife led debriefing. This was seen with the *p*-value significance of $p=0.002$ (< 0.05). This was possibly because they had less or no information on labour and delivery. Hence, they were more receptive and the midwife led debriefing was more beneficial to them. There was no much difference in the control group hence it was not significant as depicted from the p -value = 0.052 (>0.05).

The effects of occupation on prevention of postpartum depression were done through the use of Pearson's chi-squared test analysis. The difference in changes due to occupation was summarized in in Table 4.11.

Table 4.11 The effect of Occupation on Postpartum debriefing

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Differenc e
		Depresse d (%)	Not Depresse d (%)	Depresse d (%)	Improve d during follow up (%)	p-value
Interventio n	House Wife	6(3.6)	19(11.5)	4(8.2)	2(4.1)	0.043
	Student	7(4.2)	13(7.9)	6(12.2)	1(2.0)	
	Self employed	8(4.8)	14(8.5)	5(10.2)	2(4.1)	
	Formal employemen t	2(1.2)	18(10.9)	2(4.1)	1(2.0)	
	Casual labour	11(6.7)	21(12.7)	8(16.3)	3(6.1)	
	Unemploye d	15(9.1)	31(18.8)	10(20.4)	5(10.2)	
Control		Baseline (n=47)	assessment	Follow up after 3 months (n=16)		0.054
	House Wife	3(6.3)	5(10.6)	2(12.5)	1(6.3)	
	Student	2(4.4)	3(6.3)	1(6.3)	1(6.3)	
	Self employed	2(4.4)	4(8.5)	1(6.3)	1(6.3)	
	Formal employemen t	2(4.4)	4(8.5)	2(12.5)	1(6.3)	
	Casual labour	4(8.5)	8(17.0)	2(12.5)	1(6.3)	
Unemploye d	3(6.3)	7(14.8)	2(12.5)	1(6.3)		

The results in table 4.11 shows no significance based on whether the participants were employed or not, in regard to their status being influenced by Midwife led debriefing. The influence on participants living together with spouse on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to participants living together with spouse was summarized in in Table 4.12.

Table 4.12 The influence of Participants Living together with spouse on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Differenc e
		Depresse d (%)	Not Depresse d (%)	Depresse d (%)	Improve d during follow up (%)	p-value
Interventio n	Ye s	22(13.3)	46(27.9)	12(24.5)	10(20.4)	0.002
	No	27(16.4)	70(42.4)	18(36.7)	9(18.4)	
		Baseline assessment (n=47)		Follow up after 3 months (n=16)		
Control	Ye s	7(14.9)	14(29.8)	5 (31.3)	2(12.5)	0.042
	No	9(19.1)	17(36.2)	6 (37.5)	3(18.7)	

The study results show a significant difference between the baseline assessment i.e before intervention and after intervention during follow up, while there was no much difference in the control group. It indicated that there was positive relationship and influence of Midwife led debriefing especially for the participants who were living together with their spouses as represented with the significance of p - value =0.002 (<0.05).

The influence on participants' marital status on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to participants' marital status was summarized in in Table 4.13.

Table 4.13 The effect of Participants marital status on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
Intervention	Single	10(6.1)	25(15.2)	6(12.2)	4(8.2)	0.017
	Married	13(7.8)	45(27.3)	7(14.3)	6(12.2)	
	Divorced/separated	9(5.5)	16(9.7)	7(14.3)	2(4.1)	
	Widowed	7(4.2)	12(7.3)	4(8.2)	3(6.1)	
	Cohabiting	10(6.1)	18(10.8)	7(14.3)	3(6.1)	
Control		Baseline assessment (n=47)		Follow up after 3 months (n=16)		0.074
	Single	4(8.5)	9(19.1)	3(18.8)	1(6.2)	
	Married	6(12.8)	12(25.5)	5(31.2)	1(6.2)	
	Divorced/separated	1(2.1)	3(6.4)	1(6.2)	1(6.2)	
	Widowed	2(4.2)	3(6.4)	2(12.5)	0(0.0)	
	Cohabiting	3(6.4)	4(8.5)	2(12.5)	0(0.0)	

The results shows that there is change in almost 50% improvement after the midwife led debriefing intervention among the intervention group as compared to control group. For example, those mothers who were single and were depressed were 10 (6.1%) and improved by 4 (8.2%). This meant that four single mothers improved from being depressed during the initial assessment to no depression during follow -up.; participants who were Married improved by moving from depression to non-depression at 13 (7.8%) to 6 (12.2%) respectively. From the analysis with 95% CI; there was significance at p - value =0.01 (<0.05), while it was insignificant in the control group with the p - value of 0.07 (>0.05). The control group showed no change even after three months follow up.

The influence of social support on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to social support was summarized in in Table 4.14.

Table 4.14 Effect of social support on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 9 months n=49		Differenc e
		Depresse d (%)	Not Depresse d (%)	Depresse d (%)	Improve d during follow up (%)	p-value
Interventio n	Ye s	23(13.9)	43(26.1)	11(22.4)	12(24.5)	0.001
	No	26(15.8)	73(44.2)	19(38.8)	7(14.3)	
		Baseline (n=47)	assessment	Follow up after 9 months (n=16)		
Control	Ye s	5(10.6)	15(31.9)	4 (25.0)	1(6.3)	0.038
	No	11(23.4)	16(34.0)	8 (50.0)	3(18.7)	

Participants who were married were significantly more likely to respond positively to midwife led debriefing intervention hence, reduction in depression indicators with the 95% CI the p - value =0.001 ($<0,05$) as compared to those who were not married. There was no marked difference for those who were in the control group therefore, implying that there was no Significance in regard to social support.

On comparing the sociodemographic factors and postpartum depression, the variables were categorized based on depression status and Odds ratio analysis was then done to compare the control and intervention variables. A summary of the effect of socio-demographic factors on prevention of postpartum depression was done through the use of odds ratio analysis so as to determine which variable is more significant (Table 4.15).

Table 4.15 Effect of socio-demographic factors on PPD

	EPDS Parameter	Control	Debriefing (Treatment)	Odds (OR)	P- Value
Age	<13	5	22	0.5579	0.003
	≥13	11	27		
	Totals	16	49		
Educational level	<13	6	15	1.360	0.058
	≥13	10	34		
	Totals	16	49		
Occupation	<13	8	13	2.7696	0.372
	≥13	8	36		
	Totals	16	49		
Spouse living together	<13	5	19	0.717702	0.002
	≥13	11	30		
	Totals	16	49		
Marital status	<13	4	18	0.57407	0.004
	≥13	12	31		
	Totals	16	49		
Social support	<13	3	35	2.0305	0.001
	≥13	13	14		
	Totals	16	49		

From the results, the $OR = 0.5579 < 1$ which means that the control group was less likely to experience no depression, but with the introduction of the intervention (midwife led debriefing), the intervention group was more likely to experience no depression after debriefing was done. This shows that there is significance with reference to age of the respondents. With a 95% CI, age is statistically significant as depicted by $p = 0.003 < 0.05$, thus age plays a significant role in midwife led debriefing on postpartum depression.

In regard to educational status the results of $OR = 1.360 > 1$, which means that the control group was more likely to experience no depression, but with the introduction of the midwife led debriefing, the intervention group was less likely to experience no depression after debriefing was done. With a 95% CI, educational level is not statistically significant as depicted by $p = 0.058 > 0.05$, thus educational level plays non-significant role in midwife led debriefing on postpartum depression. This shows that there is no significance with reference to educational level of the respondents.

For occupation status of participants, the results showed the $OR = 2.7696 > 1$ which means that the control group was more likely to experience no depression, but with the introduction of the midwife led debriefing, the intervention group was less likely to experience no depression after debriefing was done. With a 95% CI, occupation is not statistically significant as depicted by $p = 0.372 > 0.05$, thus occupation plays non-significant role in midwife led debriefing on postpartum depression. This shows that there is no significance with reference to occupation of the respondents.

From the results, the $OR = 0.7177 < 1$ which means that the control group was less likely to experience no depression as compared to intervention group which was more likely to experience no depression after debriefing was done. With a 95% CI, spouse living together is statistically significant as depicted by $p = 0.002 < 0.05$, thus spouse living together plays a significant role in midwife led debriefing on postpartum depression This shows that there is significance with reference to spouse living together.

The results on marital status of participants, the $OR = 0.5741 < 1$ which means that the control group was less likely to experience no depression, but with the introduction of the intervention (Midwife led debriefing), the intervention group was more likely to experience no depression after debriefing was done. With a 95% CI, marital status is statistically significant as depicted by $p = 0.004 < 0.05$, thus marital status plays a significant role in midwife led debriefing on postpartum depression This shows that there is significance with reference to marital status of the respondents.

From the results, the $OR = 2.0305 > 1$ which means that the control group was more likely to experience no depression, but with the introduction of the midwife led debriefing, the intervention group was less likely to experience no depression after

debriefing was done. With a 95% CI, social support is statistically significant as depicted by $p= 0.002 < 0.05$, thus social support plays significant role in midwife led debriefing on postpartum depression. This shows that there is significance with reference to social support of the respondents.

The factors that were statistically significant were, age ($p=0.003 < 0.05$), educational level ($p=0.008 < 0.05$), marital status ($p=0.004 < 0.05$), and social support ($p=0.002 < 0.05$). This shows that age, educational level, marital status, and social support affects the uptake of mid wife led debriefing and this can influence the participants psychological status in terms of postpartum depression and therefore leading to a positive outcome.

During the discussion with the participants, they identified the spouse and family members as key support systems as the identified sources of assistance.

Theme: Support (spouse /family)

Physical (baby and herself), food, emotional, psychological

This is my second delivery; I totally appreciate the immense support from my husband as we had our first baby..... I personally did 'nt know or understand what I was going through, but I had some feeling of sadness and felt the baby was a burden... I was also not able to breastfeed, but my mother in-law and my husband gave me a lot of encouragement as the helped me with care of the baby..... Here I am for my second baby..... women need support especially after delivery otherwise "unaweza rukwa na akili" you can go mad..... Para 2

"I wish I could get support from the family members especially the father of my child in not only providing food, but being there to support me emotionally, feeling with me in the process of taking care of our new baby....." (Para 1)

"I was operated and soon I will be going home, because they (Hospital) nowadays discharge early as long as one is fine...When I am discharged home people will expect me to perform my duties as a woman. I hope my husband will understand and support me to heal faster and take care of our baby....." (First time Mom)

Most of the participants identified the need for both spouse and family support after delivery. They explained this, following their discussion of their experiences and having expressed the difficulty in taking care of the baby and handling the birth after pains. A few mothers who had not been visited since they came to the maternity ward, expressed their frustration and the need for support physically and emotionally. They felt abandoned by their relatives and desired to be assisted in terms of briefing their relatives of the importance of support during labour, delivery and more so during postpartum period.

4.6.3 Health facility factors

The health facility factors that may affect midwife led debriefing on prevention of postpartum depression includes; staff attitude and provision made for men during postnatal care.

The influence on staff attitude on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to staff attitude was summarized in in Table 4.16.

Table 4.16 Effect of Staff attitude on postpartum depression

		Before Intervention n=212 (165+47)		Follow @ 9 months n=49		Difference	
Intervention		Depressed (≥13)n (%)	Not Depressed (<13) n (%)	Depressed (≥13) n (%)	Improved during follow up (<13) n(%)	OR	p-value
		Good	14(8.5)	59(35.7)	12(24.5)		
Neutral	12(7.3)	30(18.2)	9(18.4)	3(6.1)			
Bad	23(13.9)	27(16.4)	17(34.7)	6(12.2)			
		Baseline assessment (n=47)		Follow up @ 9 months (n=16)			
Control	Good	6(12.8)	15(31.9)	6 (37.4)	0(0.0)	0.252	
	Neutral	5(10.6)	7(14.9)	4 (25.0)	1(6.3)		
	Bad	5(10.6)	9(19.2)	4 (25.0)	1(6.3)		
				14(87.5)	2(12.5)		

The results show some change of 22.4% improvement after follow up from the participants who were in the intervention group. While the control group didn't show much difference. With the 95% CI; the intervention group was represented by $p=0.045 < 0.05$ and control $p=0.252$. This shows that there was no significance in regard to staff attitude and its influence on Postpartum depression.

The influence on effect of provision made for men of post-natal care (PNC) on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to provision made for men on post-natal care was summarized in in Table 4.17.

Table 4.17 The effect of Provision made for men at post-natal care (PNC) on postpartum depression

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		OR	Difference p-value
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)		
Intervention	Yes	20(12.1)	68(41.2)	18(36.7)	2(4.1)	2.03077	0.058
	No	29(17.6)	48(29.1)	26(53.1)	3(6.1)		
Control	Baseline assessment (n=47)		Follow up after 3 months (n=16)				0.185
	Yes	10(21.3)	17(36.1)	9 (56.2)	1(6.3)		
	No	6(12.8)	14(29.8)	4 (25.0)	2(12.5)		

The results on the table above shows no significance among those participants who had the provision made for men during postnatal care (PNC) and those who indicated otherwise. This was also seen in the control group, this means with or without provision for men in Postnatal care, there was no influence in both intervention and control groups as depicted by the $p=0.058$; $0.185 (>0.05)$ respectively.

A summary of the effect of health facility factors on postpartum depression was done through the use of odds ratio analysis so as to determine which variable is more significant (Table 4.18).

Table 4.18 Summary of Health facility factors on Postpartum depression

	EPDS Parameter	Control n(%)	Debriefing (Treatment) n(%)	Odds (OR)	P-Value
Staff attitude and support	<13 ≥13 Totals	2(3.1) 14(21.5)	11(16.9) 28(43.1)	0.36364	0.001
Provision made for men	<13 ≥13 Totals	3(4.6) 13(20) 16(24.6)	5(7.7) 44(67.7) 49(75.4)	2.03077	0.023

The table above displays results on the participants that were found with EPDS of ≥ 13 points, interpreting the presence of depression.

From the results, the $OR = 0.36364 < 1$ which means that the control group was less likely to experience no depression, but with the introduction of the treatment (debriefing), the intervention group was more likely to experience no depression after debriefing was done. With a 95% CI, staff attitude and support is statistically significant as depicted by $p = 0.001 < 0.05$, thus staff attitude and support plays a significant role in midwife led debriefing on postpartum depression. This shows that there is significance with reference to staff attitude and support on postpartum depression.

From the results, the $OR = 2.03077 > 1$ which means that the control group was more likely to experience no depression, but with the introduction of the intervention (debriefing), the treatment group was less likely to experience no depression after midwife led debriefing was done. With a 95% CI, provision made is statistically significant as depicted by $p = 0.023 < 0.05$, thus provision made plays a significant role in midwife led debriefing on postpartum depression.

4.7 Outcome of midwife led debriefing on postpartum depression

The effect of midwife-led debriefing on prevention of postpartum depression was examined through the application of odds ratio analysis. According to the findings, those who received standard care were more likely to score as depressed on the Edinburgh Postnatal Depression Scale (EPDS) than those who received midwife-led debriefing. Odds ration analysis was done to determine the outcome of midwife led debriefing and standard care as shown in Table 4.19.

Table 4.19 Edinburgh postpartum depression scale scores for Midwife led debriefing and standard care groups after a follow up

	Mean (SD)	Depressed (Score ≥13) N (%)	Not depressed (Score < 13) N (%)	Odds ratio (95% CI)
Midwife led Debriefing	9.14 (6.18)	28(18.1)	127(81.9)	5.41 (0.68 to 0.96)
Standard care	8.20 (5.84)	13(31.7)	28(68.3)	1.0

Although a higher proportion of women in the midwife led debriefing group reported depression as a problem, the difference was significant (odds ratio=5.41, 95% confidence interval (0.68 to 0.96). Since the Confidence Interval lies below 1 therefore, there is statistical significance. This shows that Midwife led debriefing had a significant influence in the reduction of postpartum depression among women who were included in the intervention group and were offered the intervention of midwife led debriefing after delivery. This is an intervention with the intention to reduce the effects of the stressful process of labour and delivery.

At the time of delivery many women experience a lot of feelings that could demonstrate absence or presence of symptoms of postpartum depression. Using descriptive statistics, the following were observed from the respondents in regard to their feeling during labour and delivery.

Table 4.20 Proportion of Participants feelings after delivery

Variable	Yes n (%)	No n(%)
Experienced the feelings of Crying episode after delivery?	10(4.7)	202(97.3)
Experienced the feelings of sadness after delivery?	9(4.2)	201(94.8)
Experienced the feelings of Irritability after delivery?	6(2.8)	205(96.7)
Experienced the feelings of Confusion after delivery?	2(,01)	207(97.6)
Experienced the feelings of Anxiety after delivery?	111(52.4)	101(47.6)
Experienced the feelings of Sleep disturbance after delivery?	106(50)	106(50)

Most of the participants had feelings of anxiety and sleep disturbance, as compared to crying, sadness, irritability, and confusion. This was also expressed by women during the discussion since they were not sure of the labour outcome and therefore anxiety was prominent to most of the participants. Sleep disturbance was also one of the experiences that participants had. This was explained from their sentiments of the arrival of the new baby to take care of, while they also had after pains especially after delivery and during breastfeeding.

Test of the hypothesis

H₀: Midwife led debriefing has no effect on prevention of postpartum depression in Western Kenya

The association between midwife led debriefing and prevention of postpartum depression was investigated using regression analysis. The analysis of the results is as shown in Table 4.21.

Table 4.21 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.542 ^a	.528	.503	2.93906		
Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	303.127	1	303.127	4.518	.003 ^b
	Residual	1288.874	195	6.6096		
	Total	1592.001	196			
Coefficients of Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	2.158	1.858		1.294	.159
	Midwife Debriefing	.871	.051	.839	14.672	.003

a. Dependent Variable: prevention of postpartum depression

b. Predictors: (Constant= control), Midwife led Debriefing.

Source: Researcher (2021)

Based on the study results presented in Table 4.21, the R-square value is 0.528. This suggests that midwife-led debriefing accounted for 54.2% of the difference in postpartum depression prevention.

From the findings in table above, at p -value of 0.05 level of significance, it indicated that in this model the independent variable namely; midwife led debriefing intervention is important in predicting prevention of postpartum depression in Western Kenya as indicated by significance p -value=0.003 which is less than 0.05 level of significance ($p=0.003 < 0.05$).

The study findings revealed that midwife led debriefing had significance on prevention of postpartum depression (t-statistic=14.672, p -value=0.003< 0.05). The t-statistic measures the significance of the coefficient. In this case, the t-statistic is 14.672. A high t-statistic suggests that the coefficient is significantly different from zero, indicating that there is a strong relationship between the midwife-led debriefing and the prevention of postpartum depression.

Consequently, the null hypothesis was rejected at the 5% level of significance, suggesting that midwife-led debriefing had a beneficial effect on preventing postpartum depression. The coefficient of $B=0.871$ indicates that there was a proportional shift in postpartum depression prevention of 0.871 units for every unit increase in midwife-led debriefing techniques.

4.8 Midwife led debriefing protocol during the study

Midwife led debriefing protocol is a structured intervention designed to provide emotional and psychological support, validation and guidance to women who have given birth and are experiencing difficulties adjusting to their new roles as mothers. The protocol involves step by step processes led by a trained midwife. It allowed women to talk about their child birth experiences, explore their emotions and discuss concerns on physical and emotional health. From the study findings the Midwife led debriefing protocol was proposed based on Cognitive behavioural therapy that involves thoughts, beliefs and behaviour which are interconnected. While offering the debriefing the midwife helps to emphasize the importance of sharing experiences that will help individual persons to modify irrational patterns of thinking. From the study findings many mothers were worried of being termed as worthless and therefore, the midwife's debriefing enables them to be knowledgeable and building their self-efficacy and dispute the myth of self-worthlessness.

Midwife led debriefing protocol during the study

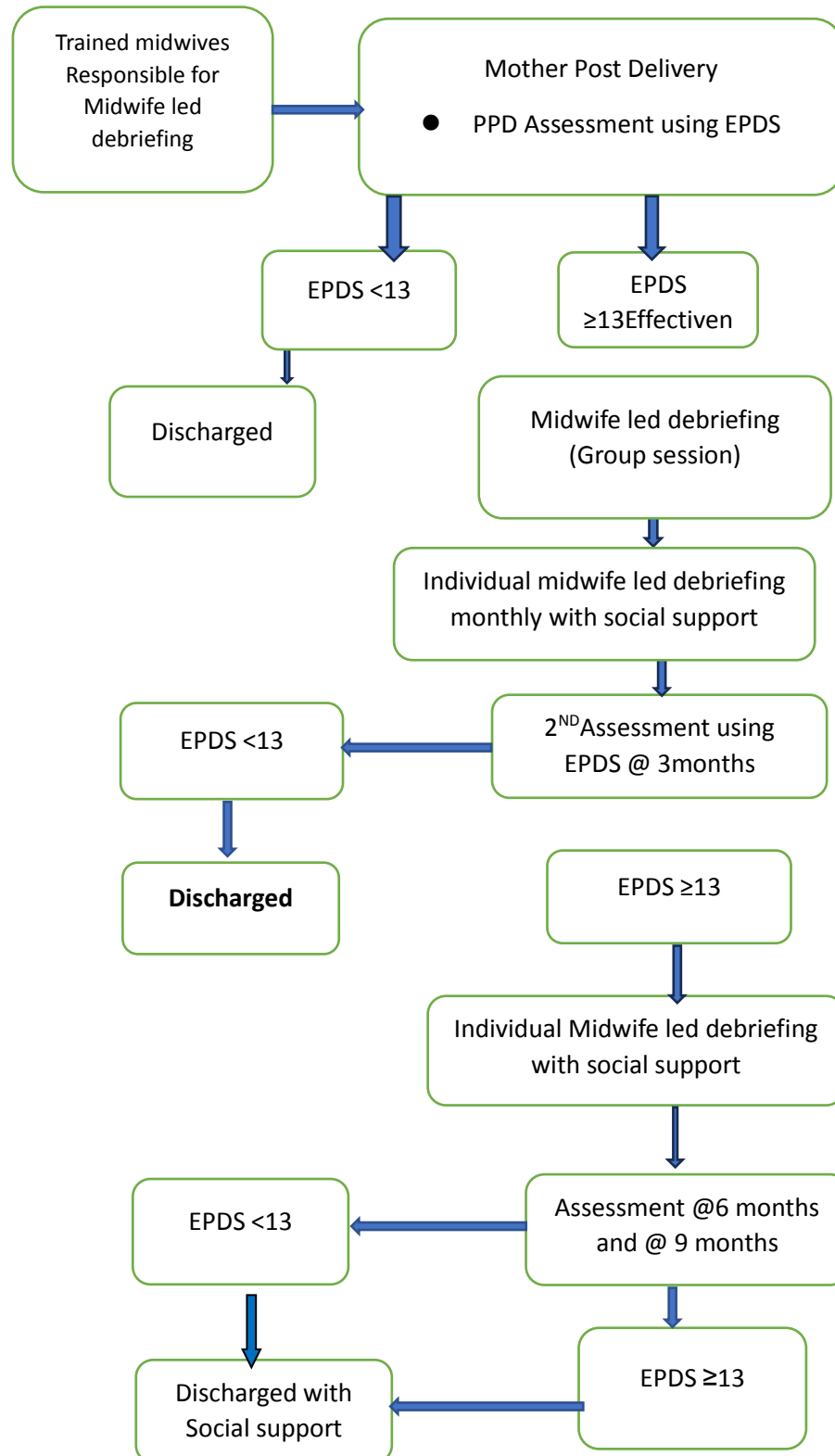


Figure 4.2 Midwife led debriefing protocol

The Midwife led debriefing protocol steps were as follows:

Identification: This is the first step where women at risk of developing postpartum depression are identified following childbirth. The process includes screening by use of a tool known as Edinburg postpartum Depression Scale (EPDS). This is done by trained midwives since it is midwife led intervention. During this phase those mothers that have EPDS <13 points are discharged and family members are advised on the importance of social support as part of coping strategies. The mothers who then would score EPDS ≥ 13 proceed to the next step. This is midwife led debriefing as an intervention to prevent PPD.

Consent and intervention: Once identified mothers are then given information about debriefing process and are allowed to willingly participate without coercion. Therefore, they will give informed consent before participating. The midwife will therefore gather information like physical, emotional health and social support networks.

Debriefing Sessions: The midwife conducts series of midwife led debriefing sessions in a group setting. During this step the mothers are encouraged to talk about their birth experiences, explore their emotions and discuss any concerns about physical and emotional health including their thoughts and beliefs. The midwife is keen to identify any outliers, like those with suicidal tendencies.

Support and guidance: Throughout the debriefing process, the midwife provides emotional support, validation and guidance to the mothers. This involves providing information, referral to other health care providers or community resources as needed. The mothers are allowed to join their support networks in families and their

community for three months. However, they are advised to call or seek for health when need arises.

Follow- up and evaluation: Based on the EPDS scores mothers are identified for regular follow- up monthly. Three months later, the women are followed up to assess their progress, and determine whether additional support is needed. The midwife at this step may realize the need for individualized debriefing or discussion. An evaluation of EPDS of <13 is discharged from structured care. The EPDS of ≥ 13 points will be offered individual in dept discussion and for possible referral for further structured care and psychological review.

CHAPTER FIVE

DISCUSSION

5.1 Overview

The chapter presents the discussion of the study results. This study entailed the midwife led debriefing on prevention of postpartum depression. Midwives are among the front-line health care workers especially in maternity care, they are the first to attend to the mothers and continue with care. According to Dikmen *et al.*, 2017, women can have reduced negative effects like anxiety, sleep disturbance and depression during postpartum period if they are given close care and selected intervention. Therefore, this study sort to assess the effectiveness of midwife led debriefing on postpartum depression in western Kenya. The discussion is presented as per the specific objective. Many studies both from direct and analytical reviews report positive benefits of midwife led debriefing, this study also agreed with some of the said findings.

5.2 Effectiveness of the approaches used in debriefing to prevent postpartum depression

The study results indicated that mothers benefited from the approach of the debriefing through group discussion. As shown from the chi square analysis and verbal review from the individual narratives. Group method of intervention demonstrated a higher inclination towards reduction of postpartum depression, as evidenced by their stronger agreements ($\chi^2 = 10.41, p = 0.02 < 0.05$), whereas individual method was weak and not significant ($\chi^2 = 2.71, p = 0.13 > 0.05$). There was improvement in reduction of depression signs and symptoms being illustrated from the EPDS being <13 ($<13 =$ No depression; $\geq 13 =$ depression present) and was depicted by $p=0.02$, group approach being significant. This result agrees with Bastos *et al.*, 2015 were the results showed

reduction of signs and symptoms of depression as a primary outcome and beneficial from the group approach of midwife led debriefing. In contrast, Abdollahpour (2020) reported that a solitary/individual technique is labor-intensive and does not yield superior outcomes. From the study results, participants that were exposed to midwife led debriefing as a group approach learned a lot from others and majority improved to reduction of depression scores as per the EPDS. Participants were able to share and learn from each other's experiences and this had a positive effect. During the study, participants who were exposed to both group and individual approach expressed the significance of group approach because it gave them an opportunity to listen to and share experiences.

From the midwife led debriefing discussion, participants who used both group and individual debriefing approaches, reported better improvement with decrease in signs and symptoms of depression. This in agreement with Philpott *et al.*, (2017) where participants who were exposed to group and individual approaches showed decrease in signs and symptoms of depression and suicidal tendencies

5.3 Factors influencing Midwife Led debriefing on postpartum depression

The study results indicated that majority of the women had feelings of anxiety (55%) and sleep disturbance (52%) This was greatly verbalized during the midwife led debriefing discussion and the reason highlighted mainly was uncertainty in terms of the delivery outcome. After delivery the women expressed sleep disturbance because of the care of the new baby. The results agree with the study of midwife psycho-education to prevent post traumatic effect of labour and delivery that helped reduce childbirth fear (Fenwick *et al.*, 2015).

This may also have been fear of negative outcomes like labour and delivery complications as was expressed by the participants. The lack of sleep after delivery was mainly verbalized by participants as caused by the care of the baby. Babies cry as a way of expressing discomfort or even hunger. This therefore puts the mothers awake in a way to understand the needs of the baby and meet their desires. From this point of view the women therefore had sleepless nights which frustrates them and this could lead to postpartum depression.

The Study results in general indicated that when midwife led debriefing was introduced as an intervention to prevent postpartum depression (PPD), there were significance in most cases. With a 95% CI, mode of delivery (MOD) and parity was significant with a p -value 0.001; 0.023 (<0.05). Participants who delivered through cesarean section improved greatly after midwife led debriefing and those who were first time mothers. These results agree with Shorey Shafaly *et al.*, 2019, though from the study there was emphasis on Cesarean section to be termed as traumatic stress during delivery.

From this results Women who delivered through caesarean section and first-time mothers (Para 1) benefited more on the intervention of midwife led debriefing. Participants who went through C/S and the first-time mothers seemed to embrace the midwife led debriefing intervention as they were more uncertain and therefore, more receptive to learn more from peers experiences and expert opinion.

The study's findings showed participants who had social support, that is their partners and other family members were available for them both during and after childbirth, exhibited less depressive signs and symptoms after midwife led debriefing as demonstrated with the significance (P -value 0.0001). The study results on socio-

demographic factors like those who were married and expressed family support benefited more from the midwife led debriefing $p=0.004$ (<0.05), this showed significance.

The results agree with Lisanne De Graaf, *et al.*, (2018) systematic review, that most studies reported women who were married and felt supported improved during follow up following debriefing as compared to those who perceived to have no support.

These findings were consistent with a systematic review conducted by O'Connor *et al.*, (2019) which found that 13 studies (or 26% of the total) demonstrated favorable outcomes and a decrease in depressive symptoms after psychological counseling of postpartum women, particularly those whose spouses were present and available when needed. According to the systematic study, some people (14%) reported unfavorable impacts, such as an increase in depressive symptoms, while others did not experience any differences. However, the systematic review by Bastos, *et al.*, (2015) disagree with the study results because its findings didn't show any difference between the group that was debriefed (intervention) and the group that received standard care (Control) in regard to marital status and social support.

It was evident that, participants who had good support system throughout intrapartum and postpartum exhibited positive results with reduced symptoms of PPD. The researcher therefore, noted that having mothers supported physically and emotionally plays a key role in improving and maintaining quality health. These results shows that a good percentage of participants i.e postnatal mothers can benefit from midwife led debriefing to prevent postpartum depression in addition to good support system. It was clear from the degree of lowered EPDS <13 , that the psychological effect of the midwife-led debriefing was exhibited. Following a critical review of twelve (12) articles reviewed by Abdollahpour *et al.*, 2020, eight indicated positive benefits after

midwife led debriefing intervention on primiparous. However, four articles didn't show any difference between intervention group and non-intervention group.

The results showed participants that viewed midwives as good and treated them well had beneficial outcomes by reduction in depression status (p - value 0.001). Mousavi *et al.*, 2022, agrees that midwife led debriefing is mainly effective for those women who had traumatic childbirth like going through operative deliveries and had midwives who were good to them. This indicates that the midwife attitude in care of clients and mothers during labour and delivery is very important and contributes towards quality health.

5.4 Outcome of Midwife Led debriefing on Prevention of Postpartum depression

Based on the study findings midwife outcome of midwife led debriefing using a structured approach would significantly reduce signs and symptoms of depression, hence participants improve to no depression as shown from the significance of $p=0.003$ (<0.05). The Odds ratio of 5.4 indicated the midwife led debriefing was effective more than five times and accounted for 54% of the difference in reduction of PPD. The results also showed a strong relationship between midwife led debriefing and prevention of postpartum depression, and this was evident from the t-statistic of 14.672 suggesting coefficient significant difference from Zero. The study showed effectiveness based on the use of the midwife led debriefing intervention with a unit increase of 0.841. From the study results, this change was observed after a face-to-face midwife led debriefing within 4 to 9 weeks after childbirth. This result agrees with a study done in Iran where its results showed reduction of postpartum signs and symptoms of depression 4 to 6 weeks and 3 months following childbirth, (Chaharrahiard, *et al.*, 2021). Bastos, *et al.*, (2015), systematic review of 8 out of 12 articles agreed with the findings therefore showing effectiveness of psychological

debriefing. However, in the same systematic review 4 out of 12 articles showed no difference when debriefing was done. In contrast a study done by Martín-Gómez *et al.*, (2022) disagrees and its findings indicate psychological debriefing had very little effectiveness on preventing postpartum depression. Following a critical review of twelve (12) articles reviewed by Abdollahpour *et al.*, 2020, eight indicated positive benefits after midwife led debriefing intervention on primiparous. However, four articles didn't show any difference between intervention group and non-intervention group.

It was clear from the degree of lowered EPDS <13, that the psychological effect of the midwife-led debriefing was exhibited. The probable rationale for observed differences and effectiveness could be attributed to the debriefing approach and other associated factors. From this study, midwife led debriefing could help avert and prevent postpartum depression, hence being effective as a preventive measure. Midwives are at the forefront in taking care of mothers during childbirth. Therefore, this study acknowledges the key role midwives can play by reducing incidences of PPD, furthermore, improving the quality of life both for the mother and the baby.

5.5 Proposed Midwife led debriefing protocol

5.5.1 Introduction

Postpartum depression (PPD) is a common and serious issue affecting many new mothers, often leading to significant negative impacts on both maternal and child health. The proposed protocol aims to provide women with a structured opportunity to process their birth experience, address any unresolved emotions or concerns, and receive support and guidance from trained midwives. This protocol is based on the positive outcomes observed in the study, suggesting that step wise process by midwife during debriefing can play a valuable role in promoting maternal mental health and

well-being during the postpartum period. Therefore, this protocol can provide essential support for early identification and prevention of Postpartum depression.

Postpartum debriefing led by a midwife can be an effective tool for preventing and mitigating postpartum depression (Abdollahpour *et al.*, 2020). Studies have demonstrated that proactive discussions and support from midwives could help women process their birth experiences, identify potential triggers for PPD, and develop coping strategies (O'connor *et al.*, 2019). Furthermore, midwife-led debriefing can serve as a platform for education on postpartum mental health and resources available to women. There is paucity of literature on the protocols used in debriefing, since most studies and literature/ systematic reviews focus on the models of debriefing. This makes studies uncertain on a stepwise protocol of debriefing.

5.5.2 Contributions from the study on Midwife Led Debriefing Protocol

Midwife Led Debriefing approach, is step wise process that can be used by midwives and health care workers in assessing and managing clients to prevent postpartum depression. Prevention of Postpartum depression is key because it reduces the burden of care at individual, family, community and even at health facility level. Pregnant women go through different levels of stress during labour and delivery depending on their individual personality and background (Mousavi S. 2020).

During the study, participants who were postnatal mothers were taken through a baseline survey to assess their depression status based on Edinburg Postpartum Depression scale (EDPS). The assessment was conducted by trained research assistants led by the principal investigator. The assessment used EPDS, which were ten questions each in a four (4) Likert scale of 0 to 3. The assessment results denoted as '0' was the least, meaning less likely to have signs and symptoms of postpartum

depression. The result '3' was the highest denoting the high possibility of having signs and symptoms of postpartum depression.

The total points were added together ranging from zero to thirty (0 to 30). The cut off for postpartum depression was EPDS ≥ 13 points. Therefore, after assessment participants that had EPDS < 13 points were debriefed and discharged home for follow up after three months. The follow up was then done after three months and from the study, all participants remained < 13 based on the EPDS scores. This therefore, informed the study that there would be possibly no need to follow up after baseline or first assessment based on their assessment results.

According to Tylor *et al.*, (2021) comprehensive study revealed the necessity of early psychological intervention for the prevention and treatment of individuals exhibiting symptoms of post-traumatic stress disorder after childbirth. The participants who had EPDS ≥ 13 points were scored to have signs of postpartum depression and therefore, they were all debriefed. Using Midwife led debriefing, participants were grouped and were taken through the debriefing process. The seven (7) step Critical Incident Stress debriefing (CISD) model was used. This model was adapted with modifications on the questions to be relevant on prevention of postpartum depression. During the debriefing process, individuals who had many personal questions and some who appeared to have suicidal tendencies were given an opportunity for individual discussion and deeper exploration of psychological issues. After the debriefing process participants were discharged for follow up monthly for those who scored ≥ 13 points and were all assessed after three (3) months.

The results from Systematic Review and Meta Analysis done by Abdollahpour, *et al.*, (2018) and Shorey, *et al.*, (2021) showed some difference (improvement) in follow up

at three months, and at six months and at one year. There was great improvement especially those who had family support. Therefore, the recommendation was concluded that, the outcome at six months is most likely the same at twelve months i.e at one year. The key component in the proposed protocol is to enhance social support to the mothers.

Six months later, participants were re-assessed to determine their status following midwife led debriefing intervention. After re-assessment those that had EPDS <13 points were discharged from follow up care. The participants that had EPDS of ≥ 13 points were given another opportunity for individual discussion and referral for further psychological care. The participants were referred for mental health assessment, review and care. The proposed protocol recommends for discharge from care when the mother's EPDS scores is <13 at three months or at 6 months, because from the results no mother reported increase in EPDS scores following midwife led debriefing. It is important to take note of special cases and situations that may also arise at any point of care in regard to maternal mental health.

5.5.3 Summary

In summary, the proposed midwife-led debriefing protocol offer a valuable opportunity to follow through a step wise process and guide enabling midwives to proactively address and prevent postpartum depression. By engaging in a systematic process with procedures or guide at each step of what to do next, midwives can play a pivotal role in promoting maternal mental health and the overall well-being during the postpartum period. Therefore, the researcher recommends this proposed protocol for validation and possible use while undertaking the process of early identification and prevention of postpartum depression.

Midwife-Led Debriefing Proposed Protocol

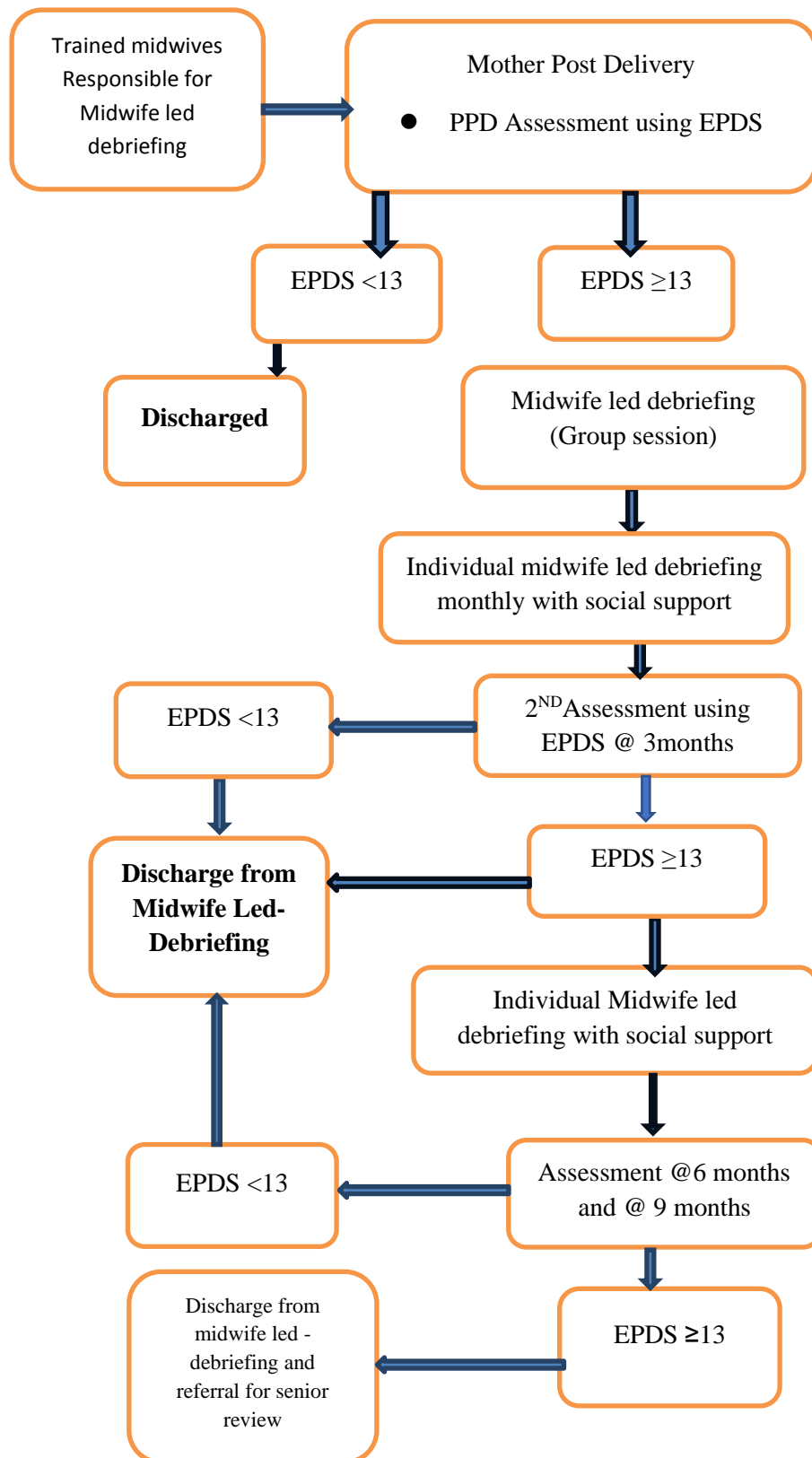


Figure 5.1 Proposed Midwife led debriefing Protocol

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Overview

This chapter presents the conclusion and recommendations of the study guided by the specific objectives.

6.2 Conclusion

6.2.1 Effectiveness of approaches used for midwife led debriefing on Postpartum Depression

The objective was to examine the effectiveness of approaches used in midwife-led debriefing on postpartum depression.

The study found the midwife led debriefing group approach was effective in reduction of signs and symptoms of postpartum depression. However, using both approaches can enhance the effectiveness.

6.2.2 Factors influencing midwife led debriefing on prevention of Postpartum Depression

The objective was to assess factors influencing Midwife led debriefing on prevention of postpartum depression

The study found effectiveness of midwife led debriefing was influenced by factors like socio-demographic factors (age, education and social support), obstetric factors (Mode of delivery, parity and infant sex) and midwife attitude during care.

6.2.3 Outcome of midwife led debriefing

The objective was to determine the outcome of midwife led debriefing on postpartum depression

The study found midwife led debriefing was effective in reducing symptoms of postpartum depression

6.2.4 Proposed Midwife led debriefing Protocol

The objective was to propose a midwife led debriefing protocol

The study found a step-by-step protocol in form of a guide was important in early identification and prevention of postpartum depression

6.3 Recommendations

1. The County and National governments to implement the midwife led debriefing to prevent postpartum depression by integrating it into the standard practice for postpartum care.
2. Health systems to develop and implement policies that will strengthen social support to mothers to prevent postpartum depression.
3. The training institutions to integrate the proposed protocol of midwife led debriefing as a simulation practicum in the curriculum.

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APPENDICES

APPENDIX I: COPY OF THE CONSENT FORM FOR PARTICIPANTS

My name is Sally Oronje,

I am undertaking a study on Effectiveness of Midwife Led debriefing on Postpartum Depression at Kakamega and Bungoma Counties, in Western Region, Kenya. The study is performed as partial fulfillment of the requirements for the Doctor of Philosophy degree of Masinde Muliro University of Science and Technology (MMUST) under the supervision of Prof. John Okoth and Dr. Mary Kipmerewo, School of Nursing, Midwifery and Paramedical Sciences.

General information

I've come to get your consent to take part in this research. I kindly request that you carefully read this permission form, or have it read to you. Your decision to engage in this study is entirely optional, and you are free to decline. The participants will not get any remuneration or incentives of any kind. Your decision to participate or not will not have any effect on the services you receive from the hospital. We promise to keep all of the information you provide confidential and to never disclose your name. In order to demonstrate that you have freely agreed to participate in the study, you will also be required to sign or thumbprint in front of a witness. There may be strange terms on this form; as such, feel free to ask us to clarify anything you don't understand.

Procedure: Mothers from the KCTRH postnatal ward are the study's subjects. Within 24 to 72 hours following delivery, participants are expected to have given birth both spontaneously (SVD) and surgically (C/Section). Following your agreement to participate in the study, you will be asked personal questions about yourself, your most recent pregnancy, and the health of both you and your child. Another self-report form, the Edinburg Postpartum Depression Scale (EPDS), will be given to you to complete

either alone or with help from the research assistants or the principle investigator. You'll be asked how you've been feeling following birth. Following that, participants will be assigned to either the non-intervention group (standard care) or the intervention group (debriefing).

Risks and benefits: This study has no anticipated risks because no medication will be administered, no samples will be collected, and no procedures will be carried out. Due to the fact that the interview will take place during the typical postnatal period following delivery, there are no fees or refunds due. If the respondent tests positive for PPD and requests to be followed up with by a specialist, this can be beneficial. Policymakers can use the study's findings to enhance maternal health care, particularly in the postpartum period.

I, participant number _____, voluntarily give my consent to participate in the study without being coerced after learning about it, reading the material above, and understanding what it involves.

Participant signature/Thumb print. _____ Date _____

Researcher /Research Assistant signature _____ Date _____

You can get in touch with the following people if you have any questions or need more information:

Principal Investigator

- 1. Sally Jepkosgei Oronje Mobile No. 0722508984

Co-Principal Investigators

- 1. Dr Mary Kipmerewo Mobile No. 0722797865
- 2. Prof. John Okoth Mobile No. 0724458545.

APPENDIX II: COPY OF THE CONSENT FOR THE MIDWIVES

My name is Sally Oronje

I am undertaking a study on Effectiveness of Midwife Led debriefing on Postpartum Depression at Kakamega and Bungoma Counties, in Western Region, Kenya. The study is performed as partial fulfillment of the requirements for the Doctor of Philosophy degree of Masinde Muliro University of Science and Technology (MMUST) under the supervision of Prof. John Okoth and Dr. Mary Kipmerewo, School of Nursing, Midwifery and Paramedical Sciences.

Your participation in this study will provide useful information and enhanced understanding of this topic. You qualify for participation because you are a midwife working at the midwifery department. You have also shown interest and following the interview you were identified as Research assistant. You will be required to participate in the process, starting from taking part in answering questions before training of the research assistance. Thereafter participate in facilitation of the research process which includes taking the participants through the consent following ethical considerations and perform the Midwife led debriefing.

Enrollment in this research is entirely voluntary. You are not penalized if you leave the study at any time. This study's data are all private and will only be utilized for research. The study's participants are at not in any danger. Please get in touch with me or MMUST if you have any questions at any point while you're participating. You are able to withdraw from this project at any time if you have any concerns. By signing this consent form, you affirm that you have read it, or that someone else has read it to you, that you completely understand its contents, and that you voluntarily consent to participate in this study.

I appreciate the support you provided with this research project.

Sally Oronje

0722508984

Name (Please Tick) -----

Signature of researcher----- Date-----

APPENDIX III: QUESTIONNAIRE FOR POSTPARTUM PARTICIPANTS

SECTION A1: EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)

NOTE: Mark a **Tick** in the choice made at the appropriate Space/ choice

Effectiveness of Midwife led debriefing Postpartum depression at:-

Kakamega County Teaching & Referral Hospital: _____

Bungoma County Teaching &Referral Hospital: _____

Checklist for Postpartum Participants: PRE & POST INVENTION

ASSESSMENTS

Study number _____ Nambari ya tafiti _____

Date of delivery _____ Tarehe ya kujifugua _____

Date of completion _____ Tarehe ya kujaza _____

Given that you recently gave birth, we'd like to know how you're doing. Kindly SELECT/CIRCLE the number that most closely matches your feelings over the last seven days, rather than just the way you're feeling right now.

Kwa vile umejifungua hivi karibuni, tungependa kujua namna unavyohisi. Tafadhali WEKA ALAMA YA MVIRINGO () / SAHIHISHA () nambari ambayo iko umbavuni wa jibu ambalo linalokaribiana na vile ulivyokuwa ukijihisi SIKU SABA ZILZOPITA, na si vile tu unavyohisi leo.

S/NO.	ENGLISH	SWAHILI	NO.
1.	I have felt happy: 0. Yes, all the time 1. Yes, most of the time	Nimehisi furaha: 0. Ndio, wakati wote 1. Ndio, wakati mwingi 2. La, sio kila mara	

	<p>2. No, not very frequently</p> <p>3. No, not at all.</p>	<p>3. La ,hata</p>	
2.	<p>I have been able to laugh and see the funny side of things.</p> <p>0. As much as I always could</p> <p>1. Not quite so much now</p> <p>2. Definitely not so much now</p> <p>3. Not at all.</p>	<p>Nimekuwa na uwezo wa kucheka na kuona upande wa furaha wa vitu.</p> <p>0. Kama vile nilivyokuwa</p> <p>1. Sio vile sana kwa sasa</p> <p>2. Kwa hakika sivyo vile kwa sasa</p> <p>3. Hata kamwe</p>	
3.	<p>I have looked forward with enjoyment to things.</p> <p>0. As much as I ever did</p> <p>1. Rather less than I used to do</p> <p>2. Definitely less than I used to do</p> <p>3. Hardly at all.</p>	<p>Nimetarajia kufurahia vitu.</p> <p>0. kama vile nilifanya daima.</p> <p>1. Afadhali kidogo kuliko nilivyokuwa</p> <p>2. Kwa hakika kidogo kuliko nilivyokuwa</p> <p>3. Hata kabisa.</p>	
4.	<p>*4. I have blamed myself unnecessary when things went wrong.</p> <p>3. Yes, most of the time</p>	<p>Nimejilaumu mwenyewe pasipo sababu vitu vikivurugika.</p> <p>3. Ndio, wakati mwingi.</p>	

	<p>2. Yes, some of the time.</p> <p>1. Not very often.</p> <p>0. No, never.</p>	<p>2. Ndio, wakati mwingine.</p> <p>1. Sio mara nyingi.</p> <p>0. La, kamwe</p>	
5.	<p>I have been anxious or worried for no good reason.</p> <p>0. No, not at all</p> <p>1. Hardly ever</p> <p>2. Yes, sometimes</p> <p>3. Yes, very often.</p>	<p>Nimekuwa na wasiwasi au sumbuko pasipo sababu nzuri.</p> <p>0. La, hata kamwe</p> <p>1. Hata kabisa</p> <p>2. Ndio, wakati mwingine</p> <p>3. Ndio, mara nyingi.</p>	
6.	<p>*6. I have felt scared or panicky for no good reason.</p> <p>3. Yes, quite a lot.</p> <p>2. Yes, sometimes.</p> <p>1. No, not much.</p> <p>0. No, not at all.</p>	<p>Nimeshikwa na hofu au kuangaika pasipo sababu nzuri.</p> <p>3. Ndio, hakika mara nyingi.</p> <p>2. Ndio, wakati mwingine.</p> <p>1. La, sio sana.</p> <p>0. La, kamwe.</p>	
7.	<p>*7. Things have been getting on top of me.</p> <p>3. Yes, most of the time I haven't been able to cope at all.</p> <p>2. Yes, sometimes haven't been coping as well as usual.</p>	<p>Vitu vimekuwa vikinilemea.</p> <p>3. Ndio, wakati mwingi sijaweza kuvumilia kabisa.</p> <p>2. Ndio, wakati mwingine sijaweza kuvumilia kama kawaida.</p> <p>1. La, wakati mwingi nimevumilia hakika vizuri.</p>	

	<p>1. No, most of the time I have quite coped well.</p> <p>0. No, I have been coping as well as ever.</p>	<p>0. La,Nimevumilia vizuri kama kila wakati</p>	
8.	<p>*8. I have been so unhappy that I have had difficulty sleeping.</p> <p>3. Yes, most of the time.</p> <p>2. Yes, sometimes</p> <p>1. Not very often.</p> <p>0. No, not at all</p>	<p>Nimekuwa sina furaha hadi nimepata tatizo la kulala.</p> <p>3. Ndio,wakati mwingi.</p> <p>2. Ndio,wakati mwingine.</p> <p>1. Sio kla mara..</p> <p>0. La, kamwe.</p>	
9.	<p>*9. I have been unhappy that I have been crying.</p> <p>3. Yes, most of the time.</p> <p>2. Yes, quite often.</p> <p>1. Only occasionally.</p> <p>0. No, never.</p>	<p>Nimekuwa sina furaha hadi nimekuwa nikilia.</p> <p>3. Ndio,wakati mwingi.</p> <p>2. Ndio,maru kwa mara.</p> <p>1. Maru chache tu.</p> <p>0. La, hashu.</p>	
10	<p>*10 The thought of harming myself has occurred to me.</p> <p>3. Yes, quite often.</p> <p>2. Sometimes.</p> <p>1. Hardly ever.</p> <p>0. Never.</p>	<p>Wazu la kujidhuru mwenyewe limenijia.</p> <p>3. Ndio, maru kwa mara.</p> <p>2. Wakati mwingine.</p> <p>1. Kwa nadra daima.</p> <p>0. Hata.</p>	
TOTAL SCORE OUT OF 30			

SCORING: QUESTIONS 1 through 3 receive scores of 0, 1, 2, or 3, correspondingly, from the top box. **QUESTIONS** 4, 6–10 (*-designated) are scored in reverse, starting at 3, 2, 1, and 0 from the top. 30 is the highest possible score. Depression risk: 13 or higher. **NB:** Consider item 10 (suicidal ideas) at all times. TOTAL SCORE _____

I SINCERELY APPRECIATE YOUR COOPERATION AND TIME.

**SECTION A2: QUESTIONNAIRE FOR POSTPARTUM PARTICIPANTS
(INCLUDED IN THE STUDY)**

NOTE: Mark a **Tick** in the choice made at the appropriate Space/ choice

Effectiveness of Midwife led debriefing on postpartum depression at:-

Kakamega County Teaching & Referral Hospital: _____

Bungoma County Teaching &Referral Hospital: _____

Date -----Patients’ Study Number -----

Date of delivery _____ Mobile No. _____

S/NO			Binary	
1.	What is your age in completed years? Years	1.18- 34 2.35-49	
2.	What is your current marital status?	1. Single 2. Married. 3. Divorced/separated. 4. Widowed 5. Cohabiting	1.Single 2.Married	
3.	Are you currently living with your Partner/ Spouse/Husband	1. Yes 2. No. If No, specify.....	1. Yes 2. No	
4.	What is your highest level of education	1. None (no formal education) 2. Primary 3. Secondary 4. College/University.	1.Primary &below 2.Secondary &above	

5.	What is your current occupation?	1. House wife 2. Student 3. Self employed 4. Formal employment 5. Casual laborer 6. Unemployed.	1. Not employed 2. Employed	
6.	What is your religion?	1. Catholic 2. Protestant 3. Muslim 4. Others-specify e.g. Hindu	1. Christian 2. Muslim	
7.	How did you delivery (Mode of delivery)	1. SVD (Vaginal) 2. C/S 3. AVD (Assisted Vaginal Delivery) / Vacuum	1. Vaginal delivery 2. Operative delivery	
8.	Parity	1. Para 1 2. Para 2	1. Para 1 2. Para 2	
9.	If para 2, is your 1 st baby alive	1. Yes 2. No	1. Yes 2. No	
10.	If No, explain...			
11.	What is the sex of your baby?	1. Male 2. Female	1. Male 2. Female	
12.	What kind of sex did you want with the new baby?	1. Male 2. Female 3. None specific/any	1. Male 2. Female	
13.	Number of Children by sex:	1. Boys..... 2. Girls.....		
14.	When you found out you were expecting this child, how did you feel?	1. Nothing 2. Worried 3. Happy 4. Shocked		
15.	Have you been taking any medicine since giving birth?	1. Yes specify..... 2. No.	1. YES 2. NO	
16.	Does any relative have a history of mental illness?	1. Yes. 2. No.	1. YES 2. NO	
17.	Has the father of your child been to the hospital since you delivered?	1. Yes. 2. No.	1. YES 2. NO	
18.	Have you or your child been unwell since birth?	1. Yes 2. No	1. YES 2. NO	

19.	If yes specify	1. Mother 2. Child		
20.	After giving birth, did any of the following emotions affect you?	1.Crying episodes 1. YES 2. NO 2.Sadness 1. YES 2. NO 3.Irritability 1. YES 2. NO 4.Confusion 1. YES 2. NO 5.Anxiety 1. YES 2. NO 6.Sleep disturbance 1. YES 2. NO		
21.	Currently, how are you feeding your baby?	1. Exclusive breast feeding (EBF) 2. Mixed feeding 3. Not breast feeding	1.EBF 2.Mixed Feeding	
22.	How do you rate the care by the midwife during your hospital stay?	1. Excellent 2. Very Good 3. Good 4. Bad 5. Very Bad	1.Good 2.Bad	
23.	Were you attended to timely during your stay in the Maternity ward	1. YES 2. NO	1.YES 2.NO	
24.	If NO, Explain.....			

APPENDIX IV: QUESTIONNAIRE FOR THE MIDWIVE'S

NOTE: Mark the appropriate choice

Effectiveness of Midwife led debriefing on postpartum depression at: -

Kakamega County Teaching & Referral Hospital: _____

Bungoma County Teaching &Referral Hospital: _____

Date _____ Midwife's' Study Number _____

Mobile No. _____

SECTION A: SOCIO DEMOGRAPHIC CHARACTERISTICS

S/NO	CONTENT/ QUESTIONS	RESPONSES	
1.	What is your age in completed years?		
2.	What is your current marital status	1. Single 2. Married 3. Divorced/separated 4. Widowed 5. Cohabiting	
3.	What is your highest level of education?	1. PhD 2. Masters Degree 3. Diploma 4. Certificate	
4.	What is your current Qualification?	1. PhD in Nursing/ Midwifery 2. MScN/ M 3. BScN 4. KRCHN/KRM 5. ECN	
5.	What is your religion?	1. Catholic 2. Protestant 3. Muslim 4. Others-specify e.E Hindu	
6.	How many complete years have you been in service?		
7.	How many complete years have you worked in maternity department		

SECTION B: QUESTIONNAIRE FOR MIDWIVES NOTE: Mark the appropriate choice

		RESPONSE	CODING
1.	What is Postpartum depression?		
2.	Are there any approaches available for preventing postpartum depression?	1. YES 2. NO	
3.	If YES, mention.....		
4.	what is Midwife led debriefing?		
5.	Do you know any debriefing model that can be used in prevention Postpartum depression	1. YES 2. NO	
6.	If YES, mention.....		
7.	Are you competent to implement Midwife led debriefing	1. YES 2. NO	
8.	In your opinion, do you think Midwife led debriefing is necessary to prevent Postpartum depression	1. YES 2. NO Give your Reasons:.....	
THANK YOU			

**APPENDIX V: CHECKLIST TO ASSESS DEBRIEFING PROCEDURE
TO BE FILLED BY THE MIDWIFE AFTER DEBRIEFING - A**

Tick appropriately as performed

S/NO	CONTENT		RESPONSE	CODING
1.	Engagement	Did you Explain the participants what debriefing is?	1.YES 2.NO	
		If NO, Explain		
2.	Facts	Did you discuss experiences relating to labour	1.YES 2.NO	
		If NO, Explain		
3.	Thoughts	Did participants ventilate their thoughts about labour & delivery	1.YES 2.NO	
		If NO, Explain		
4.	Reactions	Did you ask the participants to express their feelings and reactions towards labour & delivery	1.YES 2.NO	
5.	Normalization	Did you explain to the participants that Individual reaction to labour& delivery is a normal process	1. YES 2.NO	
		If NO, Explain		
6.	Education	Did you discuss coping with parenting	1. YES 2.NO	
		If NO, Explain....		
		Did you discuss sources of assistance	1. YES 2.NO	
7.	Disengagement	Did you tell the participants on the way forward	1.YES 2.NO	
		If YES, Explain....		
		If NO, Explain.....		

CHECKLIST TO ASSESS DEBRIEFING PROCEDURE

TO BE FILLED BY AN AGENT/ PARTICIPANT IDENTIFIED BY THE RESEARCHER AFTER THE DEBRIEFING - B

Tick appropriately as performed by the Midwife

S/NO	CONTENT		RESPONSE	CODING
1.	Engagement	Did the midwife tell the participants what debriefing is?	1.YES 2.NO	
2.	Facts	Did He/ She discuss experiences relating to labour with mothers	1.YES 2.NO	
3.	Thoughts	Did participants / mothers ventilate their thoughts about labour & delivery	1.YES 2.NO	
		If NO, Why?		
4.	Reactions	Were you and other participants asked to express your feelings and reactions towards labour & delivery	1.YES 2.NO	
5.	Normalization	Did the Midwife explain to the participants that Individual reaction to labour& delivery is a normal process	1. YES 2.NO	
6.	Education	Did you discuss coping & parenting with the midwife	1. YES 2.NO	
		Did you discuss sources of assistance	1. YES 2.NO	
7.	Disengagement	Did the midwife tell you & other the participants on what will follow after your discussion	1.YES 2.NO	
		If YES, Explain....		

APPENDIX VI: MIDWIFE LED-DEBRIEFING PROCEDURE

1: **Engagement** (*Midwife explains the procedure of the debriefing*)

The research assistant during this first step engaged the participants and described what they were to go through in one hour discussion. The midwife explained the debriefing process and urged participants to participate freely. She also reminded and assured the mothers for confidentiality. This introduction gave them the opportunity to understand the process and its importance to their health.

2: **Facts** (*Information about the birthing process, such as what transpired when your labor began?*)

The second step was very important and involving for participants, because this gave the opportunity to speak out and share their birth experiences and even stories they had initially had, before delivery. Those who had had a previous delivery shared their stories and how they went through the process. This was either positive or negative. The first time mothers (para1), voiced their fears loudly and were keen to hear from the once who had gone through the previous birth of their first baby,

3: **Thoughts** (*Explaining thoughts at the moment, such as What were your primary thoughts during labor and delivery?*)

4: **Feelings and reactions** (*Describing feelings during events that were perceived as stressful (eg, How did you feel when you were in labour / going for operative delivery ... ? How did you react?)*)

5: Normalization

Midwife emphasizes the normality of the woman's response to a stressful situation (labour and delivery)

6: Education (brief)

Coping with early parenting; identifying sources of assistance if emotional problems continue.

7: Disengagement: The midwife brings the discussion to an end.

APPENDIX VII: APPROVAL LETTER FROM DIRECTORATE OF POST GRADUATE STUDIES



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
Fax: 056-30153
E-mail: directordps@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 509099

17th March, 2020

Sally Jepkosgei Oronje,
HNR/G/01-57551/2017,
P.O. Box 190-50100,
KAKAMEGA.

Dear Ms. Oronje,

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your Masters Proposal entitled: *“Efficacy of Midwife Led Debriefing on Prevention of Postpartum Depression at Kakamega and Bungoma Counties, in Western Region, Kenya”* and appointed the following as supervisors:

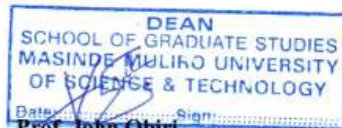
1. Dr. Mary Kipmerewo - SONMAPS, MMUST
2. Prof. John Okoth - SONMAPS, MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Director of Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Nursing & Midwifery Graduate Studies Committee and Chairman, Department of Clinical Nursing and Health Informatics and Graduate Studies Committee. Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of two years from the date of registration to complete your master's thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,



Prof. John Obiri

DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES

APPENDIX VIII: APPROVAL LETTER FROM INSTITUTIONAL ETHICS REVIEW COMMITTEE



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
Tel: 056-31375 P. O. Box 190-50100
Fax: 056-30153 Kakamega, Kenya
E-mail: ierc@mmust.ac.ke
Website: www.mmust.ac.ke

Institutional Ethics Review Committee (IERC)

Ref: MMU/COR: 403012 vol2 (87)

Date: 22nd July, 2020

Sally Jepkosgei Oronje
Masinde Muliro University of Science and Technology
P.O. Box 190-50100
KAKAMEGA

Dear Ms. Oronje,

**RE: EFFICACY OF MIDWIFE LED DEBRIEFING ON PREVENTION OF
POSTPARTUM DEPRESSION AT KAKAMEGA AND BUNGOMA COUNTIES,
IN WESTERN REGION, KENYA -MMUST/IERC/121/20**

Thank you for submitting your proposal entitled as above for initial review. This is to inform you that the committee conducted the initial review and approved (with no further revisions) the above Referenced application for one year.

This approval is valid from **22nd July, 2020 through to 22nd July, 2021**. Please note that authorization to conduct this study will automatically expire on **22nd July, 2021**. If you plan to continue with data collection or analysis beyond this date please submit an application for continuing approval to the MMUST IERC by **22nd June, 2021**.

Approval for continuation of the study will be subject to submission and review of an annual report that must reach the MMUST IERC secretariat by **22nd June, 2021**. You are required to submit any amendments to this protocol and any other information pertinent to human participation in this study to MMUST IERC prior to implementation.

Please note that any unanticipated problems or adverse effects/events resulting from the conduct of this study must be reported to **MMUST IERC**. Also note that you are required to seek for research permit from **NACOSTI** prior to the initiation of the study.





Yours faithfully,

Dr. Gordon Nguka (PhD)
CHAIRMAN, INSTITUTIONAL ETHICS REVIEW COMMITTEE

Copy to:

- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)
- DVC (A & F)

APPENDIX IX: PERMIT FROM NACOSTI

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 455673	Date of Issue: 30/July/2020
RESEARCH LICENSE	
	
This is to Certify that Ms.. Sally Jepkosgei Oronje of Masinde Muliro University of Science and Technology, has been licensed to conduct research in Bungoma, Kakamega on the topic: EFFICACY OF MIDWIFE LED DEBRIEFING ON PREVENTION OF POSTPARTUM DEPRESSION AT KAKAMEGA AND BUNGOMA COUNTIES, IN WESTERN REGION, KENYA for the period ending : 30/July/2021.	
License No: NACOSTI/P/20/6010	
455673 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	

APPENDIX X: APPROVAL LETTER: DEPARTMENT OF HEALTH SERVICES KAKAMEGA COUNTY

**REPUBLIC OF KENYA
COUNTY GOVERNMENT OF KAKAMEGA**



DEPARTMENT OF HEALTH SERVICES

Telephone: 056 31125
E-mail: pdmswestern@gmail.com
Website : www.kakamega.go.ke
When replying please quote

**THE COUNTY DIRECTOR
P O BOX 2309- 50100
KAKAMEGA**

DATE: 5TH AUGUST, 2020

Ref : CGK/MOH/CDH/1/9/466

To
The Medical Superintendent,
Kakamega County General Hospital,

RE: RESEARCH AUTHORIZATION – EFFICACY OF MIDWIFE LED DEBRIEFING ON PREVENTION OF POSTPARTUM DEPRESSION AT KAKAMEGA AND BUNGOMA COUNTIES IN THE WESTERN REGION, KENYA

Mrs. Sally Jepkosgei Oronje of Masinde Muliro University of Science and Technology, is hereby approved by the County Department of Health Services to carry out the aforementioned Research. This is following Ethical authorization vide letter Ref: **NACOSTI/P/20/6010** dated 30th July, 2020 and **MMUST IERC** authorization **MMU/COR:403012 vol.2(87)** dated 22nd July 2020.

She is instructed to remain within the confines of the Research Protocol as has been underscored in the ethical approval. She is to submit an executive summary report within 90 days upon completion of the study to the County Research, Monitoring and Evaluation Co-ordinator, Department of Health Services, Kakamega County.

Kindly accord her the necessary assistance she carries out the research.

Thank you

Dr. John Tolo Boston Otieno.
County Research, Monitoring and Evaluation Co-ordinator,
Department of Health Services,
KAKAMEGA COUNTY.



APPENDIX XI: APPROVAL LETTER FROM DEPARTMENT OF HEALTH SERVICES BUNGOMA COUNTY

REPUBLIC OF KENYA



COUNTY GOVERNMENT OF BUNGOMA
MINISTRY OF HEALTH
OFFICE OF THE COUNTY DIRECTOR
HEALTH



Telegrams: "MEDICAL", BUNGOMA
Telephone: (055) 30230 Fax: (055) 30650
E-mail: docakatu@yahoo.com
When replaying please quote

COUNTY DIRECTOR OF HEALTH
BUNGOMA COUNTY
P.O. BOX 18-50200
BUNGOMA

Ref: CG/BGM/CDH/RESRC/VOL.II/139

DATE: 19TH AUGUST, 2020

SALLY JEPKOSGEI ORONJE
MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
P.O. BOX 190 – 50100
KAKAMEGA

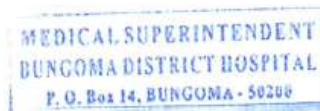
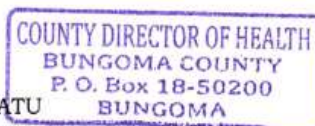
RE: RESEARCH AUTHORIZATION

Following your request for authority to carry out a research on "**Effectiveness of midwife led debriefing on prevention of postpartum depression in Bungoma County Referral Hospital**", I am pleased to inform you that you have been authorized to conduct your research as mentioned in your letter.

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 County Director of Health. The soft copy of the same should be submitted through the online Research Information system.

Thank you.

JOHNSTON AKATU
COUNTY DIRECTOR OF HEALTH
BUNGOMA



APPENDIX XII: APPROVAL LETTER FROM ETHICS AND RESEARCH COMMITTEE FROM CGH-KAKAMEGA

COUNTY GOVERNMENT OF KAKAMEGA

E-mail: wpght15@yahoo.com
Telephone: Kakamega 0702930346
When replying, please quote:
REF: CGH/KAK/ERC/VOL.I/101



COUNTY GENERAL HOSPITAL
P.O. Box 15-G.P.O-50100
KAKAMEGA
DATE: 23RD AUGUST 2020

MINISTRY OF HEALTH SERVICES

TO
SALLY JEPKOSGEI ORONJE
REG. NO. MMU/COR:509099

RE: RESEARCH PROPOSAL APPROVAL – 126-08/2020

This is to inform you that the Ethics and Research Committee has reviewed and approved your work titled “**EFFICACY OF MIDWIFE LED DEBRIEFING ON PREVENTION OF POSTPARTUM DEPRESSION IN WESTERN REGION, KENYA**”.

The approval is valid for one year from the above date and any continuation thereafter will necessitate a request for renewal.

Note that the approval is only for the work that you have submitted to us. The committee must be notified of any changes or amendments and serious or unexpected outcomes related to the study. You will be expected to submit a final report at the end of the study and may be requested to do a presentation of the same to the hospital.

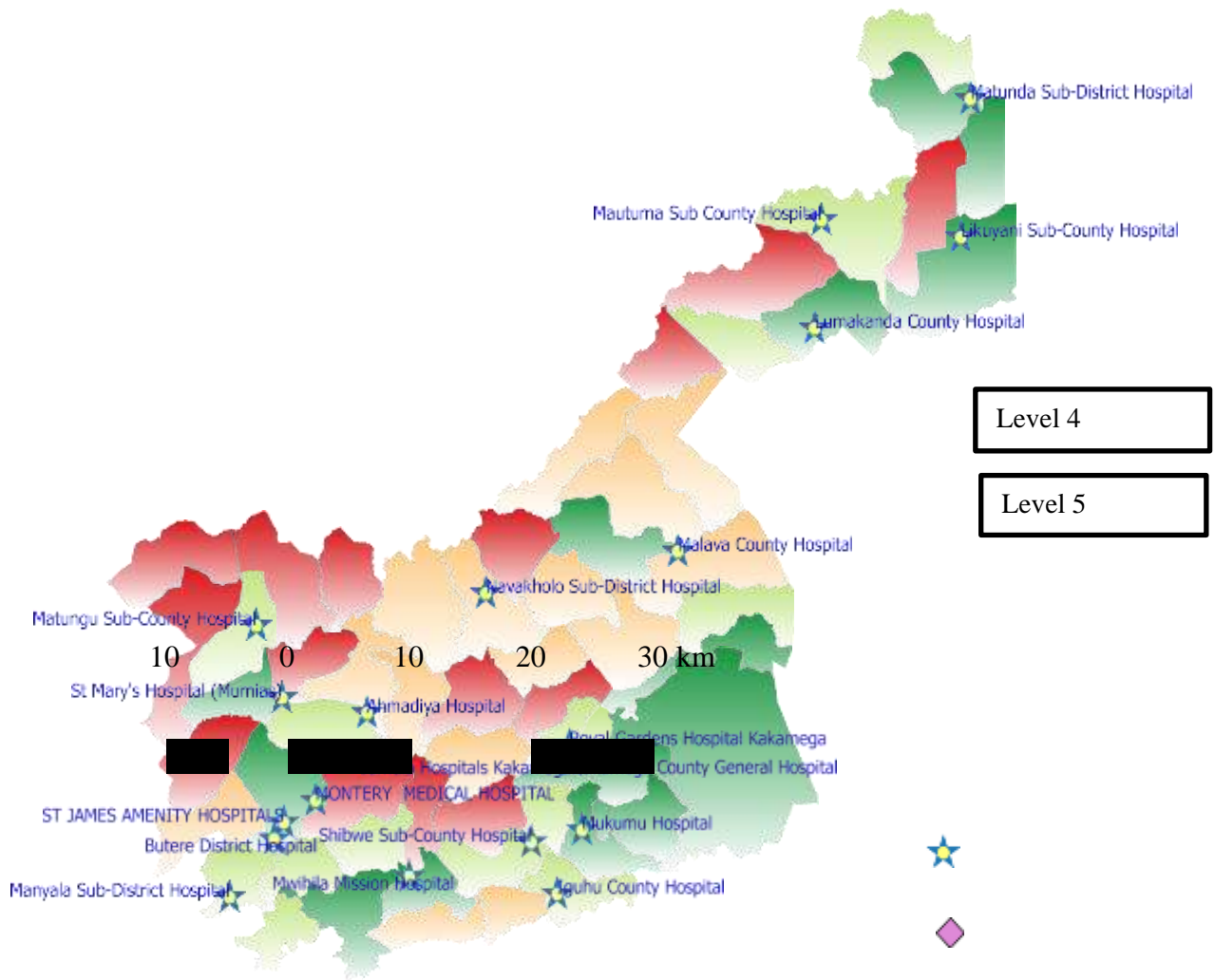
This information will form part of the database that will be consulted in future when processing related research studies so as to minimize chances of study duplication.

Thank you for your interest in research in our institution.

DR. AJEVI AUSTINE
CHAIRMAN
ETHICS AND RESEARCH COMMITTEE
CGH - KAKAMEGA



APPENDIX XIII: MAP OF KAKAMEGA COUNTY



APPENDIX XIV: MAP OF BUNGOMA COUNTY

