# PREVALENCE AND FACTORS ASSOCIATED WITH MATERNAL PSYCHOLOGICAL DISTRESS, AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE AT MUHIMBILI NATIONAL HOSPITAL

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# PREVALENCE, FACTORS ASSOCIATED WITH MATERNAL PSYCHOLOGICAL DISTRESS, AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE AT MUHIMBILI NATIONAL HOSPITAL

**By**

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**Submitted in (partial) fulfillment of the requirement for the degree award of Masters of Science in Clinical Psychology of**

**Muhimbili University of Health and Allied Sciences**

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## CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences of dissertation entitled**, "Prevalence and factors associated with maternal psychological distress, among pregnant women attending antenatal care at Muhimbili national hospital".** In partial fulfillment of the requirements for the degree of Master of Science in Clinical Psychology of Muhimbili University of Health and Allied Sciences

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## DECLARATION AND COPYRIGHT

I, **Glory Cuthbert,** declare that this dissertation is my original work and that it has not been presented and will not be presented at any other university for a similar or any other degree award.

**Signature** …… **Date**……

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## DEDICATION

This work is dedicated to my beloved family, whose encouragement have been the cornerstone of my journey. To my lovely husband and children for their patience, understanding, and unwavering love and support throughout this journey, and to my beloved parents, whose sacrifices and guidance have shaped me into the person I am today, I owe an immense debt of gratitude.

## ABSTRACT

**Background**: Pregnancy represents a period of great transition in women, taking into account numerous physiological, emotional, and social changes. Maternal psychological distress indicates an early sign of potential challenges in mental health, affecting approximately 10-20% of women during this critical period. In Tanzania, there is a gap in our understanding of the extent of the burden, and underlying factors contributing to maternal psychological distress during pregnancy. Gaining a deeper understanding of maternal psychological distress during this crucial period is essential, to shed light on the scope of maternal mental health within clinical settings during antenatal care.

**Broad Objective**: The study aimed to determine the prevalence and factors associated with maternal psychological distress among pregnant women receiving antenatal care at Muhimbili National Hospital.

**Methodology**: This was a hospital-based cross-sectional study conducted in a sample of 287 pregnant women who were attending antenatal care at Muhimbili National Hospital. A probability random sampling technique was used to recruit study participants. Data were collected using a structured social demographic and clinical questionnaire; the Oslo Social Support Scale (OSSS-3) was used to assess social support and the Conflict Tactic Scale (CTS) for assessment of intimate partner violence. The outcome of maternal psychological distress, was measured by, the Kessler Psychological Distress Scale (K10). Statistical analysis was performed using SPSS version 23.0, employing descriptive statistics, and an association between variables was analyzed with bi-variate and multivariate logistic regression. A statistical significance declared at p value< 0.05 with a 95% confidence interval

**Results**: The prevalence of maternal psychological distress was found to be 32.1%. Risk of maternal psychological distress in young adult mothers below 24years of age was three times higher as compared to those with mature age (AOR = 3.8, 95% CI, 1.05, 13.75; p, 0.04), those reported poor perceived levels of social support were seven times more likely to experience maternal psychological distress compared to those with strong social support (AOR = 7.37, 95%CI, 2.9, 18.6; p, 0.00).

**Conclusion**: These findings indicated that maternal psychological distress is common particularly within the context of antenatal care settings, with decreasing age and poor social support being significant risk factors. Incorporating mental health services within routinely antenatal care will facilitate awareness, provide opportunities for early assessment and timely interventions, thus promoting better maternal and child health outcomes.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| CDC | Center for Disease Control |
| CTS | Conflict Tactic Scale |
| IPV | Intimate Partner Violence |
| K10 | Kessler Psychological Distress Scale |
| MNH | Muhimbili National Hospital |
| OSSS-3 | Oslo Social Support Scale |
| SEM | Social Ecological Model |
| WHO | World Health Organization |

## DEFINITION OF TERMS

| | |
|---|---|
| Maternal psychological Distress | Refers to the mental and emotional strain experienced by pregnant women during their course of pregnancy which are characterized by general symptoms of stress, anxiety and depression (Vehmeijer et al., 2018) |
| Antenatal care | Refers to the medical care and support provided to pregnant women before childbirth as a part of ensuring the well-being of the mother and baby (WHO, 2016) |
| Nulliparous | Refers to a woman who has no history of giving birth before |
| Multiparous | A woman who has given birth more than once |
| Pregnancy Intention | Is regarded as having an intention or plan to conceive (Center for Disease Control an Prevention(CDC), 2023) |
| Unintended pregnancy | Is a pregnancy that occurs either when no child or children are desired (unwanted) or when it was not expected (mistimed) (Center for Disease Control an Prevention(CDC), 2023) |

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.1 Background

Psychological distress is regarded as a general term for the non-specific symptoms of stress, anxiety, depression, and any other disturbing life encounters (Viertiö et al., 2021). It is commonly understood to be a condition of emotional difficulty marked by disturbances that may affect an individual's quality of life, relationship with others, and how they manage their daily living (Drapeau et al., 2012). In pregnancy, psychological distress is attributed as a response to several physical, emotional, and social changes, resulting from the need for role adaptation, functioning, a sense of control, and changes in social connectedness (Emmanuel & St John, 2010). Thus, the imbalance between these social-environmental demands and individual resources contributes to the experience of distress during pregnancy.

The high prevalence of psychological distress during pregnancy underscores its significance as a public health concern. WHO perinatal mental health report of 2022 indicated that nearly one in five women experience mental health challenges in the course of pregnancy or within a year after birth. The prevalence of psychological distress particularly in the index of pregnancy, has been reported in the range between 10% to 20% (Gavin et al., 2005; Woods et al., 2010). High levels of psychological distress are often regarded as an early indicator of common mental health conditions like anxiety, depression, and overall poor mental well-being which can develop later in life (Cuijpers et al., 2009). Various predictive factors significantly were identified to influence the risk of psychological distress during pregnancy. These factors include poor social support, decreasing age, low maternal educational status, previous obstetric complications, and violence during pregnancy from a partner (Tesfaye, 2023). These factors collectively contribute to the development of high levels of psychological distress, emphasizing the need for targeted interventions to lessen these risks.

The implications of psychological distress during pregnancy extend beyond maternal health, affecting fetal development as well. High levels of psychological distress during pregnancy have been linked to anatomical and functional abnormalities in the developing fetus (Entringer et al., 2012). These formative changes can result in long-term adverse effects on children's cognitive, behavioral, and psychomotor development (Kingston et al., 2012). Hence, addressing maternal psychological distress during pregnancy is of great significance to the well-being of both the mother and index child.

In our Tanzanian context, the experience of psychological distress during pregnancy described by pregnant women includes experiences of extreme sadness and affected levels of functioning (Kaaya et al., 2010). This contributed to understanding psychological distress in terms of idioms described by women themselves; however further information on the extent of its burden and its various individual and socio-cultural factors remains limited within our context. Although mental health initiatives have existed in Tanzania, in 2022 notable attention at the national level was observed. It at this time that the country had its first National Mental Health dialogue, addressing key aspects related to support and strengthen integrated mental health care within the population. The promotion of maternal health is among the major health concerns within the country; however, the existence of a holistic approach in ANC service, which takes into account the role of antenatal mental health services in fostering the well-being of mother and child, is still inadequate.

## 1.2 Problem Statement

Pregnancy as a state imposes a unique set of demands on women, often leading to heightened stress levels throughout its course. For some, especially first-time mothers, the journey toward motherhood brings changes that can trigger psychological distress as they deal with the reality of identity struggles.

There are several frameworks, attempts to describe how maternal role transforms a woman's identity, as she navigates with the challenges of adapting to this role while also striving to preserve and nurture other aspects of her identity (Laney et al., 2015). Some women may find pregnancy particularly challenging when recalling previous adverse pregnancy experiences and facing their low socioeconomic status or family support (Emmanuel & St John, 2010). The implications of heightened levels of maternal psychological distress extend beyond the well-being of the woman herself as it also has an impact on the developing unborn child (MacGinty et al., 2020).

Assessing the psychosocial aspects of motherhood early in pregnancy and continuously throughout its course is essential, as common mental health disorders observed in the postpartum period are significantly influenced by the heightened psychological distress women experience during the pre- and antenatal phases. Incorporating early screening during the antenatal period presents an opportunity for early identification and the promotion of supportive mental health services within antenatal care, which, in turn, can enhance overall maternal well-being and lessen the chances of unfavorable birth outcomes.

Significantly, the burden of maternal psychological distress and its associated factors within our population remains largely unknown due to limited evidence-based resources. This gap of knowledge underlines the importance of the present study, which aims to inform on the prevalence and associated factors experienced by women during the antenatal care period.

### 1.3 Theoretical Perspective and Conceptual Framework

Pregnancy is a sensitive period, which is also accompanied by various changes in a woman's life. These changes are not only accountable to individual bodily state but also accompanying social-environmental alterations, which are likely to be stressful. As with menarche and menopause, the emotional disequilibrium experienced during pregnancy represents a development phase and changes encountered that concern the self in relation to the social–environmental context within which life is lived. (Offerman-Zuckerberg, 2012). Psychological theories explain various experiences encountered during pregnancy and consider pregnancy as a period during which the woman's knowledge may grow and develop. Both cognitive and social learning theories are used in this study to develop a social-ecological conceptual framework within which the study outcome and related associated factors can be conceptualized.

Cognitive theory, explains the manner and content of how people's thoughts result in the development of emotions. While some thoughts and beliefs can lead to positive emotions and adaptive behaviors, others may cause disturbing emotions and maladaptive behaviors (Harvey et al., 2004). The cognitive viewpoint identifies the alterations of a woman's perception of reality and the anticipated challenging outcomes are what contribute to distress during pregnancy. Distress then further aggravates anxious tendencies and disturbed emotions (Bjelica et al., 2018)

In the social learning theory, learning is a process governed by contextual factors rather than innate or internal causes. This theory identifies three stages of learning based on observation: exposure to responses from other people, acquisition of information from what is observed, and accepting the behaviors that are observed as exemplary for one's behavior (Bandura, 1977). A woman's reaction to pregnancy is largely postulated to result from culture-conditioned influences, which in turn influence her attitude toward herself, her physical and social environment, and her general perception of her future life as a mother (Bjelica et al., 2018). These theories enable us to get a better understanding of different psychological processes surrounding pregnancy as an experience, which aids the provision of essential support during this transition.

This study used an adapted socio-ecological model for health, developed by the CDC in an attempt to understand various health-related factors. The SEM originally from Bronfenbrenner, gives us an understanding of the layers of factors that influence human development. The SEM has since advanced to support our understanding of many factors influencing health outcomes that can guide health promotion interventions (Mcleroy et al., 1988). The model conceptualizes health holistically, including physical, mental, and social well-being. It looks at how a person's physical, social, and environmental contexts, as well as their interactions within the community, affect overall health. (Israel et al., 2003; Sallis et al., 2008; Wallerstein et al., 2003). Health professionals, researchers, and community leaders to identify determinants that influence health and contribute to illness at different levels can use this model.

The CDC provides a four-level social-ecological model for health where: Individual or personal factors, like age, level of education, income, and medical history, are included at the first level of the model. The second level focuses on relational factors, which are comprised of a person's immediate social network, which includes friends, intimate partners, and family members, as these networks have an effect on their behavior experiences. The third level looks at community factors, like neighborhoods and workplaces, and try to determine what aspects of these settings affect people's health. The fourth level examines broader sociocultural issues, such as social, educational, and economic policies, that either positively or negatively influence health. (Dahlberg & Krug, 2006)

The adapted SEM used in this study focuses on factors that are more relevant to the study context. It grouped factors into individual factors (maternal age, gestational age, parity, pregnancy intention, previous loss of pregnancy), and social and environmental factors (educational Status, occupation marital status, social support and intimate partner violence) to facilitate an understanding of their interactive role with maternal psychological distress during pregnancy.

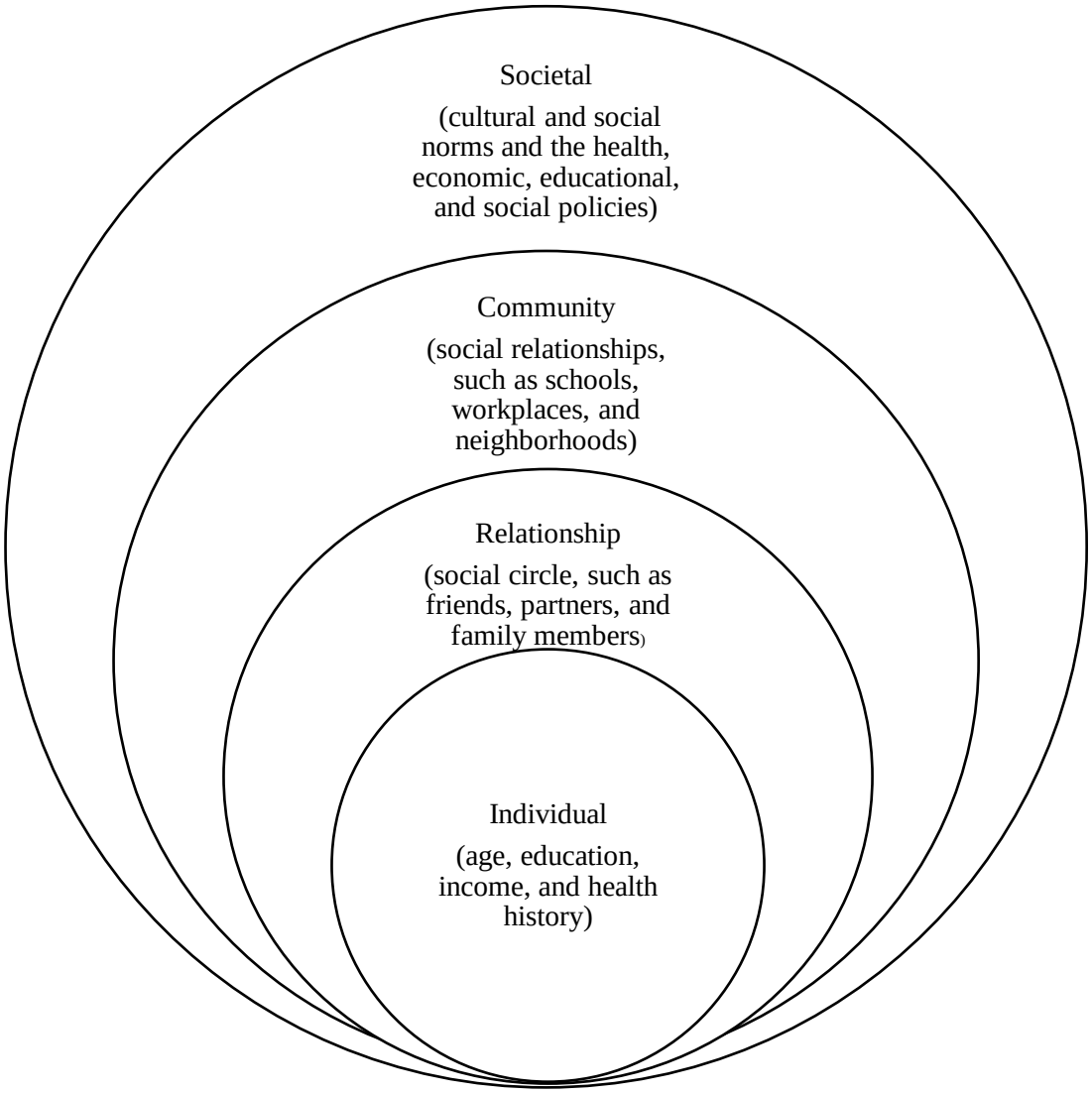



**Figure 1: Original SEM for Health CDC 2007**

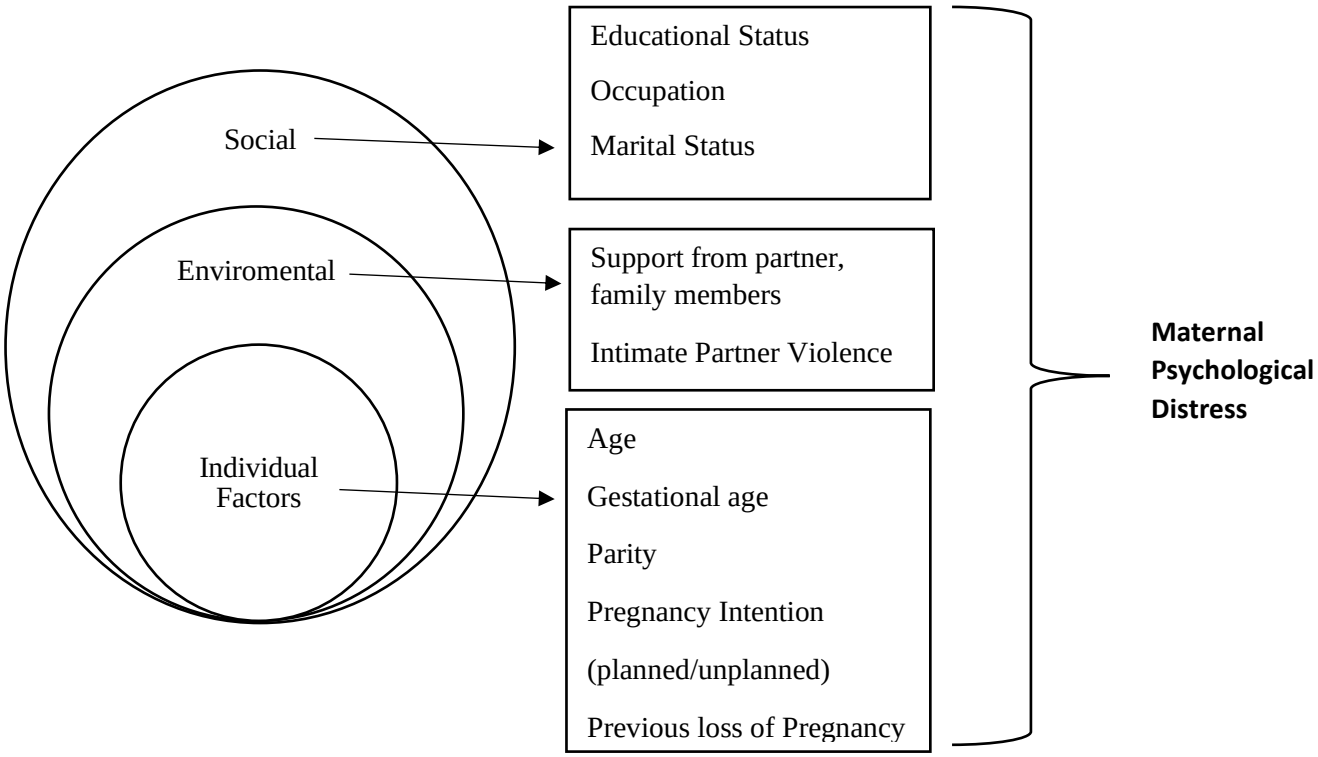



**Figure 2: Adapted Social Ecological model for factors associated with maternal psychological distress during pregnancy**

## 1.4 Rationale of the Study

Maternal psychological distress during pregnancy can result in significant consequences for the mother and the unborn baby. Knowing the prevalence of maternal psychological distress and its associated factors from this study is a crucial aspect in understanding the extent of this experience among pregnant women and it paves the way towards informing maternal mental well-being

In clinical practice, the findings of this study may assist healthcare providers at Muhimbili National Hospital and similar facilities gain insights about determinants of psychological distress among pregnant women. This knowledge can inform the development of appropriate screening tools and interventions to support the mental well-being of pregnant women.

The study findings may also inform maternal mental health services by highlighting gaps in current antenatal care services at Muhimbili National Hospital. This information can be used to develop targeted interventions, improve counseling services, and provide necessary support for pregnant women experiencing psychological distress.

The research's findings serve as evidence for policymakers and healthcare administrators to advocate for maternal services, which integrate aspects of mental health care. It can also help the development of guidelines and policies that prioritize mental health screening and support for pregnant women in similar healthcare settings.

## 1.5 Research Question

### 1.5.1 Main Research Question

What is the prevalence of maternal psychological distress and associated factors among pregnant women attending antenatal care at Muhimbili National Hospital?

### 1.5.2 Specific Research Questions

i. What is the prevalence of maternal psychological distress among pregnant women attending antenatal care at Muhimbili National Hospital?
ii. What are the individual, environmental, and social factors associated with psychological distress among pregnant women attending antenatal care at Muhimbili National Hospital?

## 1.6 Study Objectives

### 1.6.1 Broad Objectives

To determine the prevalence of maternal psychological distress and its associative factors among women who attend antenatal care at Muhimbili National Hospital

### 1.6.2 Specific Objectives

1. To determine the prevalence of maternal psychological distress experienced by pregnant women attending antenatal care at Muhimbili National Hospital
2. To determine individual, social, and environmental factors associated with maternal psychological distress in women attending antenatal care at Muhimbili National Hospital

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

### 2.1 Prevalence of Psychological Distress among women during pregnancy

Stress during pregnancy is a common experience; however, excessive stress over time can lead to psychological distress, which can negatively impact both the mother's well-being and the health of the developing baby (Glover & Barlow, 2014; Strutz et al., 2014; Wallace & Harville, 2013). This vulnerability further increases the risk of symptoms of common mental health disorders (Blegen et al., 2010), resulting from an interplay of numerous physiological and psychosocial changes (Cardwell, 2013; Hodgkinson et al., 2014).

Globally, about 1 out of 5 women experience mental health challenges during pregnancy. Most of these mental health issues in the perinatal period have been studied and reported more in high-income countries by about 90% and only 10% in low and middle-income countries (World Health Organization, 2022). In regards to the Index pregnancy, studies highlight the experience of psychological distress encountered by 10%-20% of women, from low and middle-income countries (Gavin et al., 2005, Dosani et al., 2020). In high-income countries, particularly USA, 21.2% of women were found to experience prenatal psychological distress (Obrochta et al., 2020).

There are few published studies on maternal psychological distress in antenatal care settings in Africa, but those that are available indicate the prevalence of maternal psychological distress to be between 21.5% and 26.5%. In Ethiopia, the prevalence reported for the experience of psychological distress during pregnancy among women attending ANC was 21.5%, which was lower compared to settings in South Africa, where a prevalence of psychological distress of 26.5% was reported at primary health care clinics (Tesfaye et al., 2023, Spedding et al., 2020).

In Tanzania, maternal psychological distress, specifically during pregnancy, is not well explored, leaving the setting with limited information on the burden and possible factors that early interventions can focus on.

## 2.2 Factors associated with psychological distress during pregnancy

### 2.2.1 Maternal Age

Studies indicate that psychological distress during pregnancy generally tends to decline with increasing age, as higher maternal age is anticipated to be associated with increased adaptation and self-adjustment to various changes encountered during pregnancy (Ayu et al., 2019). On the other hand, decreasing age, when pregnant in below 20 years, was found to be associated with a three-fold increased risk of psychological distress than with more mature age (Tesfaye et al., 2023). The significance of psychological distress at an early maternal age was reinforced by an increased disturbance in smooth transition from adolescence to maturity that further distorted emotional stability and general well-being (Specht et al., 2013)

### 2.2.2 Gestational Age

Physical and emotional demands account for the psychological distress experienced by women throughout pregnancy. It encompasses physiological changes, such as weight gain, hormonal fluctuations, and discomfort, which can lead to increased stress levels, emotional toll that pregnancy can influence, which include anxiety, mood swings, anticipation of pregnancy-related risks and concerns about the impending responsibilities of motherhood. These aspects can manifest at various stages of pregnancy, with high prevalence during early pregnancy, up to approximately 16 weeks of gestation, and later in the third trimester (Kingston et al., 2012). The distress levels remain consistent, regardless of whether a woman is transitioning into motherhood for the first time or continuing her maternal journey, thus playing a significant role in contributing to psychological distress (Rallis et al., 2014).

Healthcare providers should be attuned to the temporal patterns of distress and offer support tailored to the specific needs of pregnant women at different stages of their pregnancy. Regular check-ups should not merely focus on physical health but should also include discussions about emotional health to identify maternal distress.

### 2.2.3 Parity

The relationship between a woman's parity status and its impact on maternal psychological distress remains a subject of inconsistency in existing research. Studies have not been able to establish a clear link between parity and increased distress during pregnancy due to inconsistency in their results as some report significant association while others found no association. (Lynn et al., 2011, Engidaw et al., 2019, McDonald et al., 2021). However, it is widely recognized that the stressors experienced by women in the transition to motherhood, including feelings of uncertainty about adapting to parenthood or a lack of confidence in responding to a newborn's needs, may differ significantly between first-time mothers and those who have previous parenting experience.

In contrast to the inconclusive findings, it was also reported that pregnant women with a history of two to five pregnancies face a nine-fold increase in the risk of experiencing heightened stress, particularly if they had previously encountered obstetric complications in childbirth (Lynn et al., 2011) . This highlights the shaded nature of the relationship between parity and maternal distress and underscores the importance of considering specific circumstances and factors in understanding this complex issue.

### 2.2.4 Pregnancy Intention (Intended or Unintended Pregnancy)

There is much subjectivity in defining pregnancy intention as being planned or unplanned. Barrett and Wellings,(2002) explained different aspects of pregnancy intention including unintended and ill-timed conceptions along with various emotional reactions of women towards pregnancy. Studies consistently indicate that, the experience of an unintended pregnancy is a significant source of stress, with the potential to increase risk of psychological distress during pregnancy (Hall et al., 2017). In addition, a report from a perinatal national survey conducted in France revealed a strong connection between pregnancy expectancy and antenatal psychological distress. Specifically, women with unintended pregnancies were twice as likely to report a decline in their psychological well-being. This was attributed to several factors, including perceptions of the expected realities of pregnancy, perceived social and economic status, and how the pregnancy might be interpreted within the framework of internalized social and cultural norms (Moreau et al., 2022). Furthermore, unintended pregnancies results in experiences of

psychological burden associated with symptoms of depression, anxiety, and poor coping strategies that can result in unhealthy pregnancy behaviors (Khajehpour et al., 2013). These observations highlight the intricate relationship between the circumstances of pregnancy and the mental health of expectant mothers

### 2.3 Social-Environmental Factors

In regards to social environmental aspects, numerous factors can affect women's mental health during pregnancy, ranging from the pressure of transitioning to a new role of motherhood, uncertainty about birth outcomes, limited information to support their transition, and the level of social support that they may need. Social support, low family income, less autonomy in decision-making, relationship disputes, and violence, are highlighted to be linked to high stress levels during pregnancy (Waqas et al., 2020)

#### 2.3.1 Role of Social Support

The World Health Organization's concept of mental health emphasizes that a person's mental health depends on their ability to form strong social ties and supportive connections with others (WHO 2010). Different aspects of the concept of social support include perceived, structural, and received social support, which may assists a person in different ways to withstand the impacts of stress and distress tolerance (Turner & Brown, 2010).

The findings of a systematic review of 35 studies in African samples, revealed that poor social support from family and partners during pregnancy increases the risk of psychological distress, while better perceived social support appeared to decrease the risk (van Heyningen et al., 2017). Social support was found to provide physical and psychological benefits for women during pregnancy

### 2.3.2 Intimate partner violence

The experience of intimate partner violence (IPV) during pregnancy is shown to increase four-fold the risk of psychological distress during pregnancy compared to an absence of such encounters, with distress persist after the pregnancy (Tesfaye et al., 2023). This link between IPV and psychological distress suggests a lasting impact of IPV on a woman's mental health (Groves et al., 2012). In Tanzania, reports reveal that a substantial number of women experience various forms of physical and/or sexual violence during pregnancy. Nearly one-third of pregnant women in Tanzania are exposed to at least one type of intimate partner violence (Sigalla et al., 2017). Additionally, the experience of any form of intimate partner violence by pregnant women was revealed to be 27% during the index pregnancy, and 18% prevalence reported for physical violence along with 20% accounting for sexual violence (Mahenge et al., 2013)

# CHAPTER THREE

## 3.0 METHODOLOGY

### 3.1 Study design

This hospital-based cross-sectional survey used a quantitative approach study design to assess the prevalence of maternal psychological distress and associated factors among pregnant women attending antenatal care at the Muhimbili National Hospital.

### 3.2 Study area

The study site was the antenatal care clinic of the Muhimbili National Hospital (MNH). MNH is a national referral hospital, which accommodates around 1,500 beds and a daily attendance of 2,000 outpatients. The hospital has 32 clinics, including the Reproductive and Child Care (RCH), where antenatal care is provided. It is also a center for research and a university teaching hospital with a well-established center for research.

The hospital receives patients referred from public and private hospitals across the region and offers both user-fee exemption and cost-sharing modes of health financing but also accepts self-referred patients, who are treated as private patients (Shija et al., 2011). The maternity unit offers RCH services including antenatal care services offered five days a week, Monday through Friday, with a volume of 60 to 80 individuals per day.

### 3.3 Study population

The study population comprised pregnant women aged 18 years and above who were attending antenatal care at Muhimbili National Hospital RCH clinic

### 3.4 Sample size

The sample size was calculated using a single population proportion formula. A prevalence assumption was 21.5% (p=0.215) based on an Ethiopian study on maternal psychological distress), (Tesfaye et al., 2023). Other assumptions include a 5% margin of error, 95% power (Z= 1.96), and 95% confidence level, using Cochran's formula.

$$N = \frac{Z^2 P (1-P)}{e^2}$$

Whereby:

N= an estimated sample size

Z= a confidence level 95 % (standard value is 1.96)

P= Prevalence of maternal Psychological distress among pregnant women 21.5% in a study by (Tsefaye 2023)

$e^2$ =Margin of error at 5%

Hence according to the above formula

$$= \frac{1.96^2 \text{ X } 0.215 (1-0.215)}{0.05^2}$$

= Total 259

To accommodate a non-response rate of 10% of the required minimum sample size

Hence at a response rate of 90% N=259/0.9

After adjusting for non-response rate, the minimum sample size was 287

### 3.5 Sampling Method

To ensure an appropriate selection process for participants, the study employed a probability sampling method, specifically utilizing a simple random sampling technique, which was done through a lottery. Eligible pregnant women attending the antenatal care clinic were provided with a detailed explanation of the selection process. Following this, they were invited to participate in a random selection procedure wherein they retrieved a piece of paper in an envelope. Each piece of paper contained one of two possible outcomes: 'in' or 'out', symbolizing the participant's chance of inclusion in the study

Individuals who agreed to participate and selected an envelope with paper marked 'in' were included as study participants, while those who picked 'out' were not included. This recruitment process continued until the desired sample size was achieved. The binary nature of this selection method ensured a random selection of participants, minimizing the potential for selection bias

### 3.6 Inclusion criteria

Pregnant women who were aged 18 and above attending ANC at Muhimbili National Hospital

### 3.7 Exclusion Criteria

(i) Pregnant women with severe mental illness that impaired their ability to respond in the study

(ii) Pregnant women with medical complication required intensive care, that would limit their ability to give consent and participate

### 3.8 Variables

#### 3.8.1 Independent Variables

1. *Individual Factors*: Maternal age, parity, gestation age, loss of previous pregnancy and pregnancy intention
2. *Socio-environmental factors*: Social support, intimate partner violence, educational level, occupation and marital status

#### 3.8.2 Dependent Variable

Maternal Psychological Distress

### 3.9 Tools and Measurements

#### 3.9.1 Social demographic and Clinical Characteristics

Structured socio-demographic questionnaires were used to collect information on maternal age, marital status, level of education attained, and occupation. Clinical characteristics included parity, pregnant intention (planned or unplanned), history of loss of previous pregnancy as a result of miscarriage, induced abortion, or stillbirth

#### 3.9.2 Social Support during Pregnancy

Social support in this study was assessed using the Oslo Social Support Scale (OSSS- 3) which measure levels of perceived social support. This tool has also been successfully used in Ethiopia measuring the level of social support in a similar setting (Tesfaye et al., 2023).

OSSS-3 in a recent systematic review and meta-analysis of studies assessing social support in high, middle, and low-income countries, of the 22 validated measures of social support the 3-item Oslo Social Support Scale (OSSS-3) was most used, and had a Cronbach Alpha 0.88, suggesting very good reliability and internal consistency (Bedaso et al., 2021)

The Oslo scale of social support (OSSS-3) is a 3-item self-reported questionnaire measuring the level of social support. It does so by inquiring about the presence of close confidants, the perception of concern from others, and the quality of relationships with neighbors. The focus of this questionnaire is on evaluating the accessibility of practical assistance and support within an individual's social network, with four Likert scale for the first question and five Likert scale for the remaining two questions. The sum of the score scale ranges from 3–14 categorized as poor, moderate, and strong (3–8), (9–11), and (12-14) respectively (Kocalevent et al., 2018)

#### 3.9.3 Intimate Partner Violence

Assessment of Intimate partner violence (IPV) employs a tool, previously used in Tanzania, the Conflict Tactic Scale (CTS) from a WHO multi-country study on women’s health and IPV exposure. The tool assesses various aspects of IPV including emotional, physical, and sexual, and has been used in Tanzanian pregnant women (Mahenge et al., 2016).

### 3.9.4 Kessler Psychological Distress Scale (K-10)

In this study, maternal psychological distress was assessed using Kessler Psychological Distress Scale (K-10) a validated instrument widely utilized for evaluating psychological distress. K-10 is a 10-item questionnaire designed to probe various emotional states experienced by individuals inquiring about anxiety and depressive symptoms that a person has experienced in the most recent 4-week period. Respondents rate their experiences over the preceding four weeks using a five-level response option scale, 1=none of the time,2=a little of the time,3=some of the time,4=most of the time,5=all of the time, with scores of 20 and above indicate psychological distress. Scores ranging from 10 to 19 suggest a person is likely to be well, 20 and 24 indicate mild psychological distress, 25 to 29 denote moderate distress, while scores falling between 30 and 50 signify severe psychological distress (Kessler R. C. et al., 2002)

K-10 has been shown to have good validity and reliability in measuring psychological distress in low-resource areas (Andersen et al., 2011; Spies et al., 2009) both in general populations (Kessler R. C. et al., 2002) and pregnant women (Spies et al., 2009). In African settings, it has also demonstrated acceptable sensitivity and specificity in predicting the mental disorders included in the DSM-5 (Hoffman et al., 2022). Some of the studies that explored this sensitivity and specificity were done in South Africa, Ethiopia, and Kenya (Andersen et al., 2011; Ayana et al., 2019; Ongeri et al., 2022; Peltzer et al., 2011)

In Tanzania the K-10 was used in a clinical setting, and reported to have good psychometric properties. It was also recommended as a useful tool in outpatient clinical settings where a detailed assessment of psychological distress may not be feasible due to the limited availability of administering personnel and the duration of consultations (Vissoci et al., 2018). In this study as a brief tool, K-10 was convenient to administer and helpful in detecting psychological distress among pregnant women in a busy outpatient antenatal care setting at the Muhimbili National Hospital.

### 3.10 Data Collection

The data collection process was carried out by two trained research assistants, and supervised by principal investigator. They collected data from pregnant women who were attending antenatal care at MNH, after confirming their eligibility.

Swahili structured questionnaires collected social demographic and clinical characteristics (i.e maternal age, gestational age, parity, level of education, occupation, pregnancy intention and loss of previous pregnancy), K-10 scale for psychological distress, OSSS-3 for social support, and conflict tactic scale for intimate partner violence

### 3.11 Data Analysis

The Principal Investigator was responsible for data entry, cleaning, and analysis to ensure data were recorded and coded with consistency. The collected data were entered and analysed using Statistical Package for Social Science (SPSS) version 23.

For the initial analysis, univariate analysis for each variable under investigation was computed, and the results were presented in a table

Subsequently, bivariate analysis was carried out to examine the relationships between psychological distress and the predictor variables of interest. Since bivariate analysis does not account for true association due to the presence of other factors that could influence associations between variables, further multivariate logistic regression analysis was done to identify independent risk factors of psychological distress.

The variables from the bivariate analysis were included in the multivariate analysis to control for potential confounding factors and provide a more accurate understanding of the relationships among variables. This was performed regardless of the statistical significance in the bivariate analysis, since an important effect on the outcome variable may be observed when it is considered alongside other variables to avoid overlooking for these important relationships. Odds ratios and their corresponding confidence interval at 95% was employed and a p-value $\leq$ 0.05 was regarded as a marker of statistical significance.

### 3.12 Pre-testing of the Study Tools

In order to ensure the face validity of the study tools, a pre-test was conducted. It involved a sample of 20 pregnant women who were attending the antenatal care clinic at MNH. This facilitated uncovering any ambiguities within the questions, complexities hindering the comprehension of certain items, or any factors that could hinder the effective flow of the study

### 3.13 Research Clearance and Ethical considerations

Ethical clearance was obtained from the Institutional Ethical Review Board and a permission letter from MUHAS Senate Research and Publications Committee, the Executive director of MNH, and head of the department of Obstetrics and Gynecology at Muhimbili National Hospital.

Before participating in the study, participants were informed verbally about the purpose of the study, during their routine health education session, with emphasis on voluntariness of their participation, and that their refusal to participate would not interfere with health service provision as information provided would not be identifiable in reports and names on form will not be used. Additionally, participants received assurance of their confidentiality, as the questionnaire was identified with unique numbers and the use of a private space in conducting assessment to ensure privacy during response.

During the study, participants with early indicators of distress were provided with directives and PI contacts to assist them in accessing further mental health support, and after the study those who were found to have psychological distress and who consented during the study to share their contacts were contacted and arrangements for supportive psychological services. This was done in collaboration with the MNH antenatal care clinic.

The findings of this research will be disseminated through academic publication, presentation at conferences, workshops and seminars on maternal mental health to ensure its accessibility, contribute to the existing body of knowledge and inform clinical practices.

# CHAPTER FOUR

## 4.0 RESULTS

### 4.1 Demographic Characteristics of the respondents

A total of 287 participants participated in the study. The mean age (±SD) of the participants was 30.87 (±4.3), with age ranging from 18-51 years. About three-quarters (74.2%) were adult mothers, majority (87.5%) were married, more than two-thirds (68.6%) had a secondary education level and nearly three-quarters of the participants were working (74.2%).

**Table 1: Distribution of participants by socio-demographic factors attending antenatal care at Muhimbili National Hospital from March to May 2024 (n = 287**

| Variable | Frequency (n=287) | Percent % |
|---|---|---|
| **Age** | | |
| Young adult mothers 18-24 | 16 | 5.6 |
| Adult mothers 25-34 | 213 | 74.2 |
| Advance age mothers 35 and above | 58 | 20.5 |
| **Marital Status** | | |
| Married | 251 | 87.5 |
| Not Married | 36 | 12.5 |
| **Education Level** | | |
| Primary or Non-formal education | 90 | 31.4 |
| Secondary | 103 | 35.9 |
| College | 94 | 32.8 |
| **Occupation** | | |
| Working | 213 | 74.2 |
| Not Working | 74 | 25.8 |

### 4.2 Clinical characteristics of the respondents

At the study enrollment, nearly two-thirds (61.3%) of the participants were in the third trimester, and more than three-quarters (79.8%) were those who had given birth before and had one child or more. The findings revealed that more than a quarter (26.5%) had not intended to get pregnant, and nearly two-thirds (65.5%) had a positive history of previous loss of pregnancy.

**Table 2. Clinical characteristics of the respondents attending the antenatal care clinic at Muhimbili National Hospital, March to May 2024 (n =287)**

| Variable | Frequency | Percent % |
|---|---|---|
| **Gestational age** | | |
| First Trimester | 18 | 6.3 |
| Second Trimester | 93 | 32.4 |
| Third Trimester | 176 | 61.3 |
| **Parity** | | |
| Nulliparous | 58 | 20.2 |
| Multiparous | 229 | 79.8 |
| **Pregnancy Intention** | | |
| Intended | 211 | 73.5 |
| Unintended | 76 | 26.5 |
| **Loss of previous pregnancy** | | |
| Yes | 188 | 65.5 |
| No | 99 | 34.5 |
| **Perceived Social support** | | |
| Poor | 56 | 19.5 |
| Moderate | 168 | 58.5 |
| Good | 63 | 22 |
| **Intimate partner violence** | | |
| Yes | 121 | 42.2 |
| No | 166 | 57.8 |

### 4.3 Socio-environmental factors characteristics

The findings show more than half of the participants 58.5%(168) reported moderate social support, while nearly a quarter 22%(63) had good social support and nearly one out of five 19.5%(56) had poor social support.

### 4.4 Prevalence of Maternal Psychological Distress

The prevalence of maternal psychological distress during pregnancy among pregnant women who were attending the antenatal care clinic at Muhimbili National Hospital was found to be 32.1% (92)

### 4.5 Factors associated with psychological distress among pregnant women

#### 4.5.1 Bivariate analysis

In Bi-variable analysis, the following demographic and clinical variables were found to be associated with maternal psychological distress. Younger maternal age (OR 5.16, 95% CI: 1.737-15.328; p=0.003), being single (OR 2.39, 95% CI: 1.179-4.853; p=0.016), unintended pregnancy (OR 2.49, 95% CI: 1.446-4.293; p=0.001) and loss of previous pregnancy (OR 1.656, 95% CI: 0.991-2.766; p=0.05). In social environmental factors, having primary education or less (OR 0.54, 95% CI: 0.306-0.954; p= 0.034) and poor social support during pregnancy (OR 9.98, 95% CI: 4.2-23.5 p=0.00) had an association with maternal psychological distress. However, the remaining variables, which were occupational status, parity, gestation age, and IPV, were not associated with maternal psychological distress

### 4.5.2 Multivariate analysis

From multivariate logistic regression, young maternal age and poor social support were found to be statistically associated with maternal psychological distress during pregnancy with a p-value less than 0.05.

The risk of having psychological distress during pregnancy among young adult mothers who were categorized in this study as those below the age of 24 years, was three times higher as compared to those with matured age who were 25 years and above (AOR = 3.8, 95% CI, 1.05, 13.75; p=0.04). Another important finding indicated poor perceived level of social support was highly associated with maternal psychological distress as those participants were seven times more likely to experience maternal psychological distress compared to those with strong social support (AOR = 7.37, 95%CI, 2.9, 18.6; p=0.00).

**Table 3. Bi-variable and multivariable logistic regression analysis showing an association between factors and psychological distress among pregnant women attending antenatal care clinic at Muhimbili National Hospital March-May 2024 (N = 287)**

| Variable | Maternal Psychological Distress | | | Bivariate | | | Multivariate | | |
|---|---|---|---|---|---|---|---|---|---|
| **Participants demographics** | **Yes N (%)** | **No N (%)** | **Total N** | **COR** | **95%CI** | ***p-value*** | **AOR** | **95%CI** | ***p-value*** |
| **Maternal Age** | | | | | | | | | |
| Young adult mothers | 11(68.8) | 5(31.3) | 16 | 5.160 | 1.737-15.328 | **0.003** | 3.805 | 1.053-13.758 | **0.042** |
| Adult mothers | 81(29.9) | 190(70.1) | 271 | **Ref** | | | | | |
| **Marital Status** | | | | | | | | | |
| Married | 74(29.5) | 177(70.5) | 251 | **Ref** | | | | | |
| Not married | 18(50.0) | 18(50.0) | 36 | 2.392 | 1.179-4.853 | **0.016** | 1.418 | 0.600-3.353 | 0.426 |
| **Educational Level** | | | | | | | | | |
| Primary or less | 21(23.3) | 69(76.7) | 90 | 0.54 | 0.306-0.954 | **0.034** | 0.618 | 0.320-1.194 | 0.152 |
| Secondary or more | 71(36) | 126(64) | 197 | **Ref** | | | | | |
| **Occupation Status** | | | | | | | | | |
| Working | 73 (34.3) | 140(65.7) | 213 | **Ref** | | | | | |
| Not working | 19(25.7) | 55(74.3) | 74 | 0.663 | 0.366-1.199 | 0.174 | 0.567 | 0.275-1.170 | 0.125 |
| **Parity** | | | | | | | | | |
| Nulliparous | 17(29.3) | 41(70.7) | 58 | 0.852 | 0.454-1.597 | 0.616 | 0.577 | 0.257-1.296 | 0.183 |
| Multiparous | 75(32.8) | 154(67.2) | 229 | **Ref** | | | | | |

| Variable | Maternal Psychological Distress | | | Bivariate | | | Multivariate | | |
|---|---|---|---|---|---|---|---|---|---|
| **Participants demographics** | **Yes N (%)** | **No N (%)** | **Total N** | **COR** | **95%CI** | ***p-value*** | **AOR** | **95%CI** | ***p-value*** |
| **Gestational age** | | | | | | | | | |
| First trimester | 7(38.9) | 11(61.1) | 18 | 1.230 | 0.454-3.336 | 0.684 | 1.633 | 0.525-5.081 | 0.397 |
| Second Trimester | 25(26.9) | 68(71.3) | 93 | 0.711 | 0.408-1.237 | 0.277 | 0.738 | 0.391-1.390 | 0.347 |
| Third Trimester | 60(34.1) | 116(65) | 176 | **Ref** | | | | | |
| **Pregnancy Intention** | | | | | | | | | |
| Intended | 56(26.5) | 155(73.5) | 211 | **Ref** | | | | | |
| Unintended | 36(47.4) | 40(52.6) | 76 | 2.491 | 1.446-4.296 | **0.001** | 1.549 | 0.792-3.030 | 0.201 |
| **History of loss of previous Pregnancy** | | | | | | | | | |
| No | 53(28.2) | 135(72.8) | 188 | **Ref** | | | | | |
| Yes | 39(39.4) | 60(60.6) | 99 | 1.656 | 0.991-2.766 | **0.05** | 1.421 | 0.769-2.626 | 0.263 |
| **Participants experience of Intimate partner violence** | | | | | | | | | |
| No | 52(31.3) | 114(68.7) | 166 | **Ref** | | | | | |
| Yes | 40(33.1) | 81(66.9) | 121 | 1.083 | 0.656-1.787 | 0.756 | 0.914 | 0.513-1.628 | 0.760 |
| **Perceived social support** | | | | | | | | | |
| Poor | 38(67.9) | 18(32.1) | 56 | 9.98 | 4.228-23.556 | **0.00** | 7.37 | 2.911-18.655 | **0.00** |
| Moderate | 43(25.6) | 125(74.4) | 168 | 1.626 | 0.778-3.398 | 0.196 | 1.556 | 0.714-3.392 | 0.266 |
| Good | 11(17.5) | 52(82.5) | 63 | **Ref** | | | | | |

# CHAPTER FIVE

## 5.0 DISCUSSION

### 5.1 The prevalence of maternal psychological distress among pregnant women who attended antenatal care clinic at MNH

Maternal psychological distress is common in pregnancy among women attending antenatal care at MNH. This study found almost a third (32.1%) of pregnant women reported experiencing psychological distress. This prevalence is high compared to that in the general population, of 19.1% in a study in Mbeya and Songwe Tanzania, (Ivanova et al., 2022)

Furthermore, the findings on the prevalence of psychological distress were slightly higher compared to findings from other African countries, which used the same measure of distress. For instance, a study in Ethiopia conducted in five tertiary hospitals reported a prevalence of 21.5% (Tesfaye et al., 2023) while that from South Africa in primary healthcare facilities reported a prevalence of 26.5% (Peltzer et al., 2011). The discrepancy in prevalence rates could potentially be attributed to the fact that these studies were multi-center hospital-based with larger sample sizes, thus possibly capturing a broader representation of the population. The current study focused on pregnant women captured at a single tertiary referral facility who may also be likely to have more pregnancy complications that may increase distress.

Furthermore, prevalence was higher compared to studies from high-income countries. In Netherlands, it was 7% (Vehmeijer et al., 2020) and (21.2%) in the United States (Obrochta et al., 2020). It is worth noting that these studies utilized different measurement constructs compared to the current study, potentially influencing the reported prevalence.

Based on global prevalence, WHO report on perinatal mental health, found about one out of five pregnant women tend to experience mental health challenges during pregnancy. The high prevalence found in this study in comparison to the global report, could be accounted for by the fact that mental health challenges tend to begin subtly as general experiences of distress rather than a specific form of mental disorder.

### 5. 2 Factors, which were associated with Maternal Psychological distress

This study found that younger maternal age and poor social support were significantly associated with maternal psychological distress. In this setting, a younger pregnant age increased the

likelihood of experiencing psychological distress by three times more than that of a older age. This is in line with the findings of similar studies in Ethiopia (Tesfaye et al., 2023) and Indonesia (Ayu et al., 2019) which found a decreasing maternal age to be a risk factor for psychological distress. In Tanzania decreasing age was also found to increase the risk for maternal mental health morbidity during pregnancy,(Mahenge et al., 2015)

Similar observations of associations between mental health morbidity and maternal age are seen in high-income countries; a study in the UK (Henderson & Redshaw, 2013) based on maternal self-report, found women in their teens and 20s were at greater risk of psychological distress during the antenatal period. However this is contrary to the study in the United States (Obrochta et al., 2020) where decreasing age was not associated with maternal psychological distress, and this could be explained by differences in societal dynamics and support offered for pregnant young mothers

Increased psychological distress in younger pregnant women, may be explained by the increasing psychosocial demands during the preparation for and transitioning to motherhood roles (Shorey et al., 2018) and the psychological and social instabilities faced while navigating with their own psychosocial developmental stages. In addition, the responsibility and expectations associated with motherhood can be overwhelming, especially in the absence of an adequate support system which can exacerbate feelings of isolation and inadequacy, contributing to higher rates of psychological distress.

Moreover cultural and societal norms prevalent in Tanzania settings may also play a role, as younger single pregnant women may face stigma and rejection (McCleary-Sills et al., 2013), which can add to their existing stressors and contribute to their experience of psychological distress.

Pregnant women who experienced poor social support in this study were at seven times higher risk of experiencing psychological distress than those reporting good social support. In a study conducted in Tanzania regarding having poor practical social support was also reported to increase the risk of experiencing IPV which in turn may contribute to the experience of distress during pregnancy (Katiti et al., 2016)

Having good social support from partners, family members, and neighbors in this study resulted in psychological wellness. This is supported by evidence from a meta-analysis and studies from low and middle-income countries (McCarthy et al., 2021) (Tesfaye et al., 2023), (Spedding et al., 2020), and (Shahid et al., 2022). Reflecting on the overwhelming nature of pregnancy caused by challenges from changing roles, and responsibilities, difficulties in balancing such competing demands, and inadequate social support affects the ability of pregnant women to cope better and heightens their level of distress. This narrative is supported by (Byrd-Craven & Massey, 2013) that pregnant women who have a good network of supportive family members or friends may experience lower stress, fewer symptoms of psychological distress, and are less likely to report symptoms of other mental disorders such as depression later in the postpartum period.

Studies also report that the advantages of social support not only account for maternal well-being (Dibaba et al., 2013a) but also for the healthy development of the unborn baby. However, a study done in Netherlands revealed not having good support from health providers was associated with psychological distress rather than support from partner or close family members. While this study suggests need to explore supportive behavior of maternal health care providers, it is worth noting that pregnancy and childbirth in this cultural context remain supported predominantly by socio-cultural practices within family i.e family and extended family members.

On the other hand, there were some  factors such as experience of Intimate partner violence, previous loss of pregnancy, and pregnancy intention (unintended pregnancy) which were more reported by other studies, to contribute in maternal psychological distress, (Spedding et al., 2020), (Khajehpour et al., 2013), although in this study they did not indicated to have a significant  statistical association

Regards to IPV partly could be explained by some of our sociocultural norms and systems which tend to normalize some forms of violence like those related to psychological and sexual violence as indicated by some studies (Katiti et al., 2016), (McCleary-Sills et al., 2013). In turn, these result in women becoming more lenient and report them as less distressing to avoid the stigma and shame that may be accompanied by their disclosure

Looking at unintended pregnancy and its lack of association, a meta-analysis of studies conducted in low and middle-income countries, reports that women with unplanned pregnancy tend to delay beginning their antenatal care (Tolossa et al., 2020),(Dibaba et al., 2013b). While this cannot be surmised from the study findings, it is notable that majority of the participants were in their second and third trimesters, and that the study was unable to capture participants in their early stages of pregnancy who may have been still adjusting psychologically to being pregnant. This may lead to unhealthy perinatal behavior including seeking prenatal care late. In addition, marital status could play a role, since in the study; three out of four pregnant women who did not intend to get pregnant were married. In regards to our sociocultural settings and the role of the stress-buffering hypothesis, (Giesbrecht et al., 2013), social support from their partner and social-cultural acceptance regardless of their intention could have buffer the stress impact and lessen their reported experiences of distress.

This could also account for those who reported a history of loss of previous pregnancy, who had no association with maternal psychological distress as they might have experienced sufficient support that has contributed to their emotional healing and prevented them from further distress

# CHAPTER SIX
# 6.0 LIMITATIONS OF THE STUDY, MITIGATION, CONCLUSION AND RECOMMENDATIONS

## 6.1 Limitations of the study

This study was conducted in a single hospital-based facility; hence, characteristics of participants from this study may not reflect the pregnant population in Dar-es-salaam let alone Tanzania, hence posing a challenge in the generalizability of our findings.

Since the recruitment of our participants occurred in a single tertiary hospital-based facility, that addresses the needs of referred women; our findings may not effectively reflect the experience of pregnant women in other obstetric settings such as primary health care.

A risk of recall bias in responding to some of the sensitive questions, as participants may have chosen to report information that they perceived to be more socially acceptable due to concerns on stigma or embarrassment. This could affect estimates of responses that participants provided during the surveys.

Physiological symptoms experienced by many pregnant women, such as nausea, vomiting, and pregnancy fatigue could have a potential for response bias leading to over reporting of their experience of distress in certain instances

## 6.2 Mitigation

Participants were assured of confidentiality and the interview was conducted in a private space to allow them to respond freely.

The use of tools that were culturally adapted and validated for pregnant women population, has allowed to reduce risk for response bias.

By conducting multiple regression analysis, the researcher tried to mitigate and reduce possible confounding biases and facilitated the establishment of true association between and within the variables

### 6.3 Conclusion

This study highlights the importance of addressing maternal psychological distress during pregnancy, particularly within the context of antenatal care settings. These findings call upon the need for further routine screening, early intervention, and support services that can be incorporated within ANC to lessen the adverse effects of maternal psychological distress and foster good maternal and child health outcomes.

### 6.4 Recommendation

To the facility, the study recommends MNH to incorporate brief mental health screening in routine antenatal care services at RCH, to allow early identification of women who may be experiencing psychological distress. Additionally, it is essential to integrate supportive psychological interventions, enhance counseling services, and provide other necessary mental health support for pregnant women dealing with psychological distress

Informing policymakers and healthcare administrators to advocate for maternal services, which integrates aspects of mental health care, in the development of guidelines and policies that prioritize mental health screening and support for pregnant women in similar healthcare settings.

To the service, providers at RCH, in cooperating psychoeducation aspects during routine health education to women at the clinic will allow women to be informed about mental health and know where to get available support. This approach will empower women with knowledge and resources, contributing to better mental health outcomes during and after pregnancy.

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# APPENDICES

## Appendix I: Informed Consent – English

Muhimbili University Health and Allied Sciences

To be read with questions answered in a language in which the study subject is conversant (English or Kiswahili).

My name is Glory Cuthbert,

I am pursuing a Master of Science in Clinical Psychology at the Muhimbili University of Health and Allied Sciences doing a study on the **Prevalence and factors associated with maternal psychological distress among pregnant women attending antenatal care at Muhimbili National Hospital**, as part of my degree award fulfillment. I would appreciate your participation in this study.

Here are the few important things would like to explain to you about the study and I will be ready to answer any questions concerning my study.

This study aims to determine the prevalence and associated factors of maternal psychological distress among pregnant women attending antenatal care at Muhimbili National Hospital

I will do the study under my assigned supervisor.

This is academic research and you are required to be aware of the following, which applies to all in the research:

Your participation in this study is voluntary you may decide to withdraw consent at any time during the interview.

Refusal to participate will not affect your treatment in any way.

After reading the explanation, do not hesitate to ask any questions in case a need arises.

I will be using questionnaires as assessment measures that will take about 30 to 45 minutes.

No invasive procedures such as drawing blood will be involved

Information attained from this study will remain confidential. Code numbers instead of your name or registration numbers will be used in this study for identification.

**Risks and benefits**

The study will not have risks to the participants.

There will not be direct benefits to you. However, this study will be of benefit by providing information on the extent of the burden of maternal psychological distress and its associated factors among pregnant women attending antenatal Care at Muhimbili National Hospital and it will also inform policymakers to incorporate mental health services such as screening on regular antenatal care visit

For questions or health concerns related to this study, kindly call me on my mobile number 0717689136 or my supervisor Dr. Samuel Likindikoki 0784 768639 or you can directly visit the Department of Psychiatry and Mental Health, Muhimbili National Hospital.

I the undersigned do hereby volunteer to participate in this study. Nature and purpose have been fully explained to me.

I understand that all the information obtained will be used for this study only.

Signed---------- Date ----------

**Appendix II; Questionnaire English version**

**GENERAL INFORMATION (Please fill in the correct answer.)**

Date of interview: {...../...../2024} Questionnaire serial No: .....

I. SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF STUDY PARTICIPANTS

1. How old are you?
2. What is your educational level?
    a) None/ Informal
    b) Primary
    c) Secondary
    d) University
3. What is your marital status?
    a) Married
    b) Not Married
    c) Co-habiting
    d) Separated/ Divorced
    e) Widowed
4. What is your occupational status?
    a) Employed
    b) Self Employed
    c) Not working
5. Parity
    a) Have not given birth before
    b) I have given birth once
    c) I have given birth twice or more
6. Did you intend to get pregnant now or did it come as a surprise meaning, something you did not expect at this time?
    a) I intended
    b) I did not intend

7. What is your current gestational age?
    a) First Trimester (1-13 weeks)
    b) Second Trimester (14-27 weeks)
    c) Third Trimester (28- 40 weeks)
8. Have you ever experienced any loss of a previous pregnancy before for any reason?
    a) Yes
    b) No

**II) ASSESSMENT OF PERCEIVED SOCIAL SUPPORT**

**(OSLO SOCIAL SUPPORT SCALE)**

9. How many people are so close to you that you can count on them if you have great personal problems?

    1. None
    2. 1-2
    3. 3-5
    4. 5 or more

10. How much interest and concern do people show in what you do.

    1. None
    2. Little
    3. Uncertain
    4. Some
    5. A lot

11. How easy is it to get practical help from neighbors if you should need it?

    1. Very difficult
    2. Difficult
    3. Possible
    4. Easy
    5. Very easy

**III) CONFLIC TACTIC SCALE ON WOMEN'S HEALTH AND DOMESTIC VIOLENCE AGAINST WOMEN**

| **Psychological violence** | | **YES** | **NO** |
|---|---|---|---|
| 1 | Your Partner ever,<br>Has he insulted you or made you feel bad about yourself? | | |
| 2 | Has he belittled or humiliated you in front of other people? | | |
| 3 | Has he done things to scare or intimidate you on purpose? | | |
| 4 | Has he threatened to hurt you or someone you care about? | | |
| Physical Violence | | | |
| 5 | Has he slapped you or thrown something at you that could hurt you? | | |
| 6 | Has he pushed or shoved you? | | |
| 7 | Has he hit you with his fist or with something else that could hurt you? | | |
| 8 | Has he kicked you, dragged you, or beaten you up? | | |
| 9 | Has he choked or burnt you on purpose? | | |
| 10 | Has he threatened to use or used a gun, knife, or other weapon against you? | | |
| Sexual violence | | | |
| 11 | Being forced to have sexual intercourse when you didn't want to | | |

**(V) KESSLER PSYCHOLOGICAL DISTRESS SCALE (K10)**

| No | These questions concern how you have been feeling over the past 4 weeks. Tick a box below each question that best represents how you have been feeling | (1) None of the Time | (2) A little of the time | (3) Some of the time | 4) Most of the time | 5) All of the Time |
|---|---|---|---|---|---|---|
| 1. | How often did you feel tired out for no good reason? | | | | | |
| 2. | How often did you feel nervous? | | | | | |
| 3. | How often did you feel so nervous that nothing could calm you down? | | | | | |
| 4. | How often did you feel hopeless? | | | | | |
| 5. | How often did you feel restless or fidgety? | | | | | |
| 6. | How often did you feel so restless you could not sit still? | | | | | |
| 7. | How often did you feel depressed? | | | | | |
| 8. | How often did you feel that everything was an effort? | | | | | |
| 9. | How often did you feel so sad that nothing could cheer you up? | | | | | |
| 10 | How often did you feel worthless? | | | | | |

**Appendix III: Informed Consent Swahili**

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES**

**OFFICE OF THE DIRECTOR OF RESEARCH AND PUBLICATIONS**

FOMU YA RIDHAA KUSHIRIKI KWENYE UTAFITI KUHUSU: HALI YA MFADHAIKO WA KISAIKOLOJIA NA SABABU ZINAZOHUSIANA, KWA WANAWAKE WAJAWAZITO WANAOHUDHURIA KLININIKI YA WAJAWAZITO KATIKA HOSPITAL YA TAIFA YA MUHIMBILI.

Jina langu ni Glory Cuthbert

Ninatoka chuo kikuu cha Tiba na Sayansi ya Afya shirikishi Muhimbili katika Idara ya Afya na Magonjwa ya Akili, ninafanya utafiti kuhusu hali ya mfadhahiko wa kisaikolojia na sababu zinazohusiana kwa wanawake wajawazito wanaopatiwa huduma katika kliniki ya wajawazito katika hospitali ya Taifa ya Muhimbili.

Huu ni utafiti wa sayansi ya tiba hivyo unapaswa ufahamu yafuatayo kabla ya kushiriki;

**Dhumuni la Utafiti huu:** Kama nilivyo sema hapo awali, dhumuni ni kufanya utafiti kuhusu hali ya mfadhahiko wa kisaikolojia na sababu zinazohusiana kwa wanawake wajawazito wanaopatiwa huduma katika kliniki ya wajawazito katika hospitali ya Taifa ya Muhimbili

Namna ya kushiriki

Ushiriki wako kwenye utafiti huu ni hiyari kabisa na unaweza kutokubali kushiriki au kusitisha mahojiano wakati wowote. Kutoshiriki utafiti huu hakutaingiliana na huduma zako za tiba wala faida unazotakiwa kuzipata hapa kliniki.

Usisite kuuliza swali lolote pale unapoona kuna sababu. Kama ukikubali kushiriki mahojiano yataendeshwa kwa kutumia dodoso maalum.

**Madhara:** Ikiwa wakati unajaza dodoso la utafiti, ukapata kikwazo na kuona unahitaji msaada zaidi wa kisaikolojia au mtoa huduma wa afya ya akili kwa mazungumzo zaidi tutakuwa tayari kusaidia

**Usiri:** Taarifa zako utakazozitoa hazitawekwa hadharani kwa namna yeyote ile kwa hiyo ushiriki wako hautafahamika. Jina lako au taarifa zozote zinazokutambulisha hazitaambatanishwa na taarifa zako utakazozitoa.wisho wa ufafiti taarifa hizi zitahifadhiwa kwa usalama na baadaye kuharibiwa baada ya kuwekwa na kutunzwa kwenye mfumo wa elektroniki

**Kumbuka:** Utafiti huu unaweza usiwe na faida ya moja kwa moja kwako kwa sasa, ila ushiriki wako na matokeo ya utafiti huu yatasaidia katika kuboresha mpango wa tiba katika kuimarisha afya ya akili kwa wanawake katika kipindi cha ujauzito ili kukabiliana na hali ya mfadhaiko wa kisaikolojia.

**Nani wa kumuuliza:** Kama una maswali zaidi ambayo ungependa kuuliza kuhusiana na utafiti huu, au ikiwa ungetamani kupata msaada zaidi tafadhali wasiliana na mimi Glory Cuthbert 0717-689136 au msimamizi wangu Dr. Samuel Likindikoki 0784 768639 Idara ya Afya na Magonjwa ya Akili

Nimesoma / nimeambiwa kuhusu yaliyomo humu ndani. Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi…… Tarehe ……

**Appendix IV; Questionnaire - Swahili version**

**DODOSO LA TAARIFA ZA JUMLA (Tafadhali jaza jibu sahihi)**

Tarehe ya mahojiano: {...../...../2024} Fomu Namba:

I. TAARIFA ZA AWALI ZA MSHIRIKI

1) Una umri gani?
2) Kiwango chako cha elimu
    a) Sijasoma/Sijasomea shuleni
    b) Shule ya Msingi
    c) Sekondari
    d) Chuo
3) Hali yako ya ndoa?
    a) Nimeolewa
    b) Sijaolewa
    c) Ninaishi na mpenzi ambaye hajanioa
    d) Tumetengana/ Tumeachana
    e) Mjane
4) Hali yako ya kazi?
    a) Nimeajiriwa
    b) Nimejiajiri
    c) Sina kazi
5) Je, ulipanga kupata ujauzito huu sasa au umekuja kama mshangao yaani kitu ambacho hukukitarajia kwa wakati huu?
    a) Nilipanga kupata Ujauzito
    b) Sikupanga Kupata Ujazito
6) Umri wa mimba
    a) Trimester ya kwanza (wiki 1-13)
    b) Trimester ya pili (wiki 14-27)
    c) Trimester ya tatu (wiki 28-40)

7) Hali ya Uzazi
    a) Mimba ya kwanza
    b) Nina mtoto mmoja
    c) Nina watoto wawili au zaidi
8. Je umewahi kupoteza ujauzito hapo kabla kwa sababu yoyote?
    a) Ndiyo
    b) Hapana

**SEHEMU YA 2; TATHMINI YA KUPIMA KIWANGO CHA MSAADA WA KIJAMII (OSLO)**

9. Pindi ukiwa umekabiliwa na changamoto kubwa kibinafsi, ni watu wangapi upo nao karibu sana ambao unaweza kuwafikiria zaidi ili waweze kutatua changamoto hiyo

1. Hakuna
2. 1-2
3. 3-5
4. 5+

10. Je, watu wanaonyesha kujali kiasi gani katika kile unachofanya

1. Hakuna
2. Kidogo
3. Sina uhakika
4. Kwa kiasi fulani
5. Kiasi kikubwa

10. Je ni rahisi kwako kupata msaada wa uhakika kutoka kwa majirani ikiwa utauhitaji msaada huo

1. Ni vigumu sana
2. Vigumu
3. Inawezekana
4. Ni rahisi
5. Rahisi sana

**SEHEMU YA 3. (DODOSO KUHUSU UKATILI WA KIJINSIA DHIDI YA WANAWAKE)**

| Ukatili wa Kisaikolojia | | Ndiyo | Hapana |
|---|---|---|---|
| 1 | Je mwenzi wako,<br>Amewahi kukutukana au kukufanya ujisikie vibaya? | | |
| 2 | Je, amewahi kukudharau au kukudhalilisha mbele ya watu wengine | | |
| 3 | Je, amewahi kufanya mambo ya kukutisha au kukutishia kwa makusudi? | | |
| 4 | Je, amewahi kukutishia kukuumiza au kutishia kumuumiza mtu unayemjali? | | |
| Ukatili wa kimwili | | | |
| 5 | Je, amewahi kukupiga kofi au kukutupia kitu ambacho kinaweza kukuumiza? | | |
| 6 | Je amewahi kukusukuma? | | |
| 7 | Je, amewahi kukupiga kwa ngumi au kwa kitu kingine ambacho kinaweza kukuumiza? | | |
| 8 | Je amewahi kukupiga teke au kukuburuza? | | |
| 9 | Je amewahi kukunyonga au kukuchoma kwa makusudi? | | |
| 10 | Je, amewahi kutishia kutumia au kweli amewahi kutumia bunduki, kisu au silaha nyingine dhidi yako? | | |
| Ukatili wa kingono | | | |
| 11 | Je amewahi, kukulazimisha kufanya tendo la ndoa wakati hukutaka, au kukulazimisha kufanya tendo la ndoa kwa namna ambayo uliona haina utu au kudhalilisha? | | |

**SEHMU YA 4: DODOSO LA KUPIMA HALI YA MFADHAHIKO WA KISAIKOLOJIA**

| Na. | Maswali 10 yafuatayo yanauliza jinsi gani ulivyojisikia katika kipindi cha wiki nne zilizopita. | (1) Hata mara moja | (2) Mara chache | (3) Wakati Fulani | (4) Mara nyingi | (5) Mara zote |
|---|---|---|---|---|---|---|
| 1 | Katika wiki nne zilizopita, ni mara ngapi umekua ukihisi uchovu pasipo na sababu maalumu? | | | | | |
| 2 | Katika kipindi cha wiki nne zilizopita, ni mara ngapi ulihisi wasiwasi? | | | | | |
| 3 | Katika kipindi cha wiki nne zilizopita, ni mara ngapi ulihisi kupatwa na wasiwasi kiasi cha kushindwa kupata ahueni? | | | | | |
| 4 | Katika wiki nne zilizopita, ni mara ngapi ulihisi kukosa matumaini? | | | | | |
| 5 | Katika wiki nne zilizopita, ni mara ngapi umekua hutulii au unahangaika? | | | | | |
| 6 | Katika wiki nne zilizopita, ni mara ngapi umekua ukihangaika sana na hukuweza kutulia? | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | Katika wiki nne zilizopita, ni mara ngapi umehisi mfadhaiko? | | | | | |
| 8 | Katika wiki nne zilizopita, ni mara ngapi umehisi kila kitu kilikua ni jitihada? | | | | | |
| 9 | Katika wiki nne zilizopita ni mara ngapi ulihisi huzuni na hakuna cha kukuchangamsha? | | | | | |
| 10 | Katika wiki nne zilizopita ni mara ngapi ulihisi huna thamani? | | | | | |

## Appendix V: Approval of Ethical Clearances

**UNITED REPUBLIC OF TANZANIA**

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

**OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION**

Ref. No.DA.282/298/01.C/2029

Date: 14/02/2024

MUHAS-REC-02-2024-2029
GLORY CUTHBERT
MUHAS

**RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: PREVALENCE, FACTORS ASSOCIATED WITH MATERNAL PSYCHOLOGICAL DISTRESS, AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE AT MUHIMBILI NATIONAL HOSPITAL**

Reference is made to the above heading,

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 14/02/2024
EXPIRATION DATE OF APPROVAL: 14/02/2025

**STUDY DESCRIPTION:**
**Purpose:**

The purpose of this observational cross-sectional study is to determine the prevalence and risk factors of maternal psychological distress among pregnant women receiving antenatal care services..

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014554.pdf and in the MUHAS archives.

**The PI is required to:**

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain Data Transfer Agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain Material Transfer Agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Apply for and obtain permission to publish the results from National Institute for Medical Research. The application should be before submitting to a publisher and not concurrently through the email publications@nimr.or.tz.
9. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
10. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
11. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.




Dr. Nahya Salim Masoud,
**CHAIRPERSON, MUHAS RESEARCH AND ETHICS COMMITTEE**

## Appendix VI: Introduction Letter

**UNITED REPUBLIC OF TANZANIA**
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
**OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES**

In reply quote;
Ref. No. HD/MUH/T.351/2022

23rd February, 2024

The Executive Director,
Muhimbili National Hospital,
P.O. Box 65000,
**DAR ES SALAAM**

**Re: INTRODUCTION LETTER**

We would like to inform you that the bearer of this letter is Glory Cuthbert with Reg. No. HD/MUH/T.351/2022 is a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc Clinical Psychology.

As part of her studies, she will be doing an elective research titled: "**PREVALENCE, FACTORS ASSOCIATED WITH MATERNAL PSYCHOLOGICAL DISTRESS AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE AT MUHIMBILI NATIONAL HOSPITAL"** she is being supervised by Dr. Samuel Likindikoki from MUHAS and Dr. Praxeda Swai from MNH.

The research has been approved by the Chairman of University Senate.

Kindly provide her with the necessary assistance to facilitate the conduct of her research.

We thank you for your cooperation.

*Ms. Victoria Mwanilwa*
**For: DIRECTOR, POSTGRADUATE STUDIES**
c.c Glory Cuthbert

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

## Appendix VII: Permission Letter

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH

**MUHIMBILI NATIONAL HOSPITAL**

*In reply please quote:*

Ref. No.: MNH/CRTCU/Perm/2024/102 Date: 22nd February, 2024

Block Manager,
Maternity I & II
**Muhimbili National Hospital**

**RE: PERMISSION TO COLLECT DATA AT MNH**

| | |
|---|---|
| Name of Student | **Glory Cuthbert** |
| Title | **"Prevalence Factors Associated with Maternal Psychological distress Among Pregnant Women Attending Antenatal Care at Muhimbili National Hospital"** |
| Institution | Muhimbili University of Health and Allied Sciences |
| Supervisor | Dr. Samuel Likindikoki (MUHAS) |
| Co – supervisor | Dr. Praxeda Swai (MNH) |
| Period | 22nd February, 2024 to 30th May, 2024 |

Approval has been granted to the above principal investigators to collect data at MNH. Dissemination of study findings at MNH shall be overseen by **Dr. Praxeda Swai** (MNH) supervisor.

Kindly ensure the named principal investigator abide to the ethical principles and other conditions of the research approval.

Sincerely,

**Dr. Charles K. Pallangyo**
**For: Head of Clinical Research, Training and Consultancy Unit**

c.c DNS
c.c Dr. Praxeda Swai
c.c **Glory Cuthbert**

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