PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG ADULTS RECEIVING OUTPATIENT CARE AT PRIMARY HEALTH CARE FACILITIES IN ILALA DISTRICT -DAR ES SALAAM.

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By

Arafa Bakari

A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree

Award of Master of Medicine (Psychiatry

Muhimbili University of Health and Allied Sciences

October, 2024

CERTIFICATION

The undersigned certifies that she/he has read and hereby recommends for examination by the Muhimbili University of Health and Allied Sciences a dissertation entitled: **"Prevalence and factors associated with depressive symptoms among adults receiving outpatient care at primary health care facilities in Ilala district -Dar es salaam"** in (Partial) fulfilment of the requirement for the degree of Master of Medicine (Psychiatry) of the Muhimbili University of Health and Allied Sciences.

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DECLARATION AND COPYRIGHT

I, Arafa Ally Bakari, declare that this dissertation is my original work. It has not been presented and will not be presented to any University for a similar or any other degree award.

Signature …….. **Date……..**

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DEDICATION

I dedicate this work to my beloved late parents Mr. and Mrs. Ally Bakari, my son Irfaan, my brothers, without forgetting my fellow postgraduates, my mentors and supervisors, who have supported me throughout my years of study

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LIST OF ABBREVIATIONS

AOR	Adjusted odds ratio
COR	Crude odds ratio
HC	Health Centers
HIC	High-income countries
LIC	Lower-income countries
LIMCs	Lower- and Middle-income countries
D.M. O	District medical officer
MUHAS	Muhimbili University of Health and Allied Sciences
PHC	Primary health care
PHQ	Patient health care
SA	South Africa
SD	Standard Deviation
SPSS	Statistical package for Social services
SSA	Sub-Saharan Africa
U. S	United States of America
U.K	United Kingdom
R.M. O	Region medical officer
WHO	World Health Organization
WMH	World Mental Health
X^2	Chi-square Test

OPERATIONAL DEFINITIONS

Depressive symptoms- are symptoms associated with feelings of sadness, loss of interest or pleasure, changes in appetite or weight, sleep disturbances, tearfulness, psychomotor changes, fatigue or loss of energy, difficulty thinking or concentrating and suicidal thoughts (DSM-5-TR, 2022)

Outpatient care: Patients visiting a healthcare facility for diagnosis or treatment without an overnight stay

Primary health care: Is the initial point of contact and ongoing care within a healthcare system with several levels comprised of, district hospitals, health centers and dispensaries (Mbatia, Shah and Jenkins, 2009)

ABSTRACT

Background: Depression and depressive symptoms (DS) are common among patients attending primary health care (PHC). They significantly affect an individual's well-being and daily functioning, impacting their quality of life. Globally, nearly one in four people who visit a PHC are affected, making depression a serious public health concern that warrants attention. However, the reported prevalence rates are often lower than the actual rates because depression frequently co-occurs with other physical symptoms and conditions.

Objective: - The study aimed to determine the prevalence and factors associated with depressive symptoms among adults receiving outpatient care at primary health care in Ilala District - Dar es Salaam.

Methodology: This was a facility-based cross-sectional study with a quantitative approach. The study population comprised adults aged 18 and above who received outpatient primary health care at Ilala District, Dar es Salaam. Data collection was from September to October 2023.

Data collection was done using the semi-structured questionnaire, which comprised of social demographic characteristics and clinical diagnosis PHQ-9 to assess depressive symptoms at the cutoff point of 9 or more, and a semi-structured questionnaire with a modified questionnaire used to collect the necessary information. Captured data was analyzed using SPSS version 23. Descriptive analysis was used for summarizing data, bivariate and multivariate logistic regression analyses were performed to test the association between dependent and independent variables. Ethical clearance was obtained from the MUHAS Senate Research and Publications Committee, and permission to collect data was obtained from the Regional and District Medical Office.

Results: Data was collected from 350 participants, aged 18-39 years (70%, n=245), with a mean age of 34.6 years (SD ±13.18). The overall prevalence of depressive symptoms was 28% (n= 99). Factors such as female gender(AOR=1.87, 95%Cl 1.05-3.32, p=0.024), are shown to be associated with, a family history of mental illness (AOR= 2.54, 95% CI: 1.40-4.61, P=0.002),

alcohol consumption (AOR=2.53, 95% CI: 1.41-4.55, P = 0.005), and presence of chronic illness.(AOR=4.29, 95% CI: 2.08-8.88, P < 0.001) Were associated with depressive symptoms. Residence area showed no statistically significant association with depressive symptoms (AOR=0.47, 95%Cl 1.40-4.61, p=0.023)

Conclusion: the prevalence of depressive symptoms is high among adults receiving outpatient care at PHC facilities. It's associated with female gender, familial mental health history, alcohol use, and chronic illnesses like HTN, DM, and HIV while residing in the urban area is shown to be a protective factor

Recommendations: Effective interventions on mitigating the impact of identified factors associated with depressive symptoms.

Findings from these studies suggest a pressing need to integrate mental health training into the curricula for healthcare workers and to implement structured programs aimed at improving their knowledge and skills regarding depression by developing care models that address both mental and physical health. Scaling up mental health services by ensuring mental health services are available within other clinics in primary health care facilities. Finally, promoting research on depression, and the biological, psychological, and social factors associated better for practice in PHC systems

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background.

Depressive symptoms refer to symptoms associated with persistent feelings of sadness, loss of interest or pleasure, changes in appetite or weight, sleep disturbances, tearfulness, psychomotor changes, fatigue or loss of energy, and difficulty thinking or concentrating which lasts for at least two weeks (DSM-5-TR, 2022). Depression is one of the most common mental disorders and prevalent mental health conditions worldwide, impacting millions of individuals across various regions and cultures (WHO, 2017), that disturbs the physical, mental psychological, and social well-being of the population (Al Balawi *et al.*, 2019). Studies estimate that approximately 10–25% of the global population will experience depressive symptoms at some point in their lives (Kauye, Jenkins and Rahman, 2014). Other estimates suggest that around 15% of individuals will suffer from depression at least once during their lifetime (Oneib *et al.*, 2015). World Health Organization (WHO) reports that more than 322 million people (4.4%) suffer from depression (WHO, 2017). Trend increasing overtime (Moreno-agostino *et al.*, 2021). Data from studies indicates that between 2005 and 2015, the number of people affected by depression surged by 18.4% (Incidence and Collaborators, 2017). This increase is primarily driven by global population growth and aging, increasing life expectancy, increased number of people living with chronic conditions, urbanization, and environmental changes that have exacerbated mental health risks (Ferrari *et al.*, 2013)

According to the mental health report of the World Health Organization reports that 15% of depressive individuals are more likely to commit suicide, and it is largely linked to other non-communicable diseases (Fekadu *et al.*, 2017). By 2030, depression is projected to be the second leading cause of disability globally (Fekadu *et al.*, 2017) accounting for 40.5% of Disability-Adjusted Life Years (DALYs) caused by mental and substance use disorders (Rathod *et al.*, 2018). Notably, 80% of the non-fatal disease burden attributed to depression occurs in low- and middle-income countries.(Liu *et al.*, 2020) (Agudelo-botero *et al.*, 2021)

Research indicates that the prevalence of depressive symptoms increased (Andersen *et al.*, 2011),especially in developing countries, and trends to vary from region to region across the world and vary between high-income, middle, and low-income countries (Ferrari *et al.*, 2013). For instance in the United States, the prevalence of depression is about 9% among the general population (Maurer *et al.*, 2012), whereas the European countries have a prevalence rate of about 8.5% (Dowrick *et al.*, 2018) in sub-Sahara Africa (SSA), the prevalence rate is reported to range from 4%-50% (Evelyn J.Bromet, 2013), (Salihu and Udofia, 2016)

Depressive symptoms are common in primary care (Jackson *et al.*, 2022). Earlier studies revealed that depressive symptoms are presented in 10% to 20% of primary care attendees (Mitchell, Vaze and Rao, 2009). In developed countries prevalence rate ranges from 26.3% in Southern Asia and Kenya to 56.7% in primary care centers in Paris, France (Reddy, 2010), (David and Lincoln, 2013), (OF, 2018). Also, studies from Africa reported a high prevalence of depressive symptoms at PHC (Udedi, 2014). It affects nearly 10% of visitors, and this is due to the presentation of somatic symptoms which make most people visit PHC facilities frequently (Tylee and Gandhi, 2005). In East Africa, prevalence also remains high, ranging from 31.6 to 32 % (Udedi, 2014). In Tanzania, a study involving primary healthcare workers in four centers found that rates of depression had increased recently (Mbatia, Shah and Jenkins, 2009).

Different studies have reported an association between various socio-demographic factors, biological and psychological factors, and depressive symptoms across the world and how these factors interact to cause depressive symptoms (Hammen, 2018). The impact of depressive symptoms on society is substantial and affects various individual lives and societal functioning (Ogunsemi *et al.*, 2010). The consequences of depression, include missed workdays that are twice that of the general population, decreased productivity which affects the growth of the economy, increased healthcare utilization, increased mortality across all ages, and health costs (Costantini *et al.*, 2020)

1.2 Problem Statements

The World Health Organization (WHO) ranks depression as a leading cause of disability worldwide, affecting people of all ages and backgrounds, with its symptoms ranging from persistent sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, fatigue, and poor concentration (DSM-5-TR, 2022).

Primary Health Care (PHC) settings, usually serve as entry points into the healthcare system for most of the population in low- and middle-income countries (LMICs), where specialized mental health care is often scarce. These settings are crucial in providing accessible healthcare, especially where specialized services, including mental healthcare, are limited or unavailable (Mbatia, Shah and Jenkins, 2009). Despite the critical role of PHC in addressing mental health needs, depression remains exceptionally high in primary care settings (Tylee and Gandhi, 2005)

Research highlights a high prevalence of depressive symptoms among outpatients in Primary Health Care (PHC) settings, with rates varying significantly across different regions and populations (Fekadu *et al.*, 2022), (Kessler and Bromet, 2013). Causes of the higher prevalence of depressive symptoms are not always apparent, but it is associated with varying combinations of biological factors like genetic, and psychological factors (Hammen, 2018), factors such as current alcohol consumption, a family history of mental illness, chronic conditions, and gender are associated with depressive symptoms (Hannie *et al.*, 2024), is indicated as a primary reason for visitors in PHC settings and in about 9.9% of primary care visitors depression is identified as a new problem (Jackson *et al.*, 2022), this is because most the individual at PHC setting presented with somatic symptoms

The impact of depressive symptoms might occurs on the individuals, families, community, and the government in terms of increasing the economic and social, costs by frequent increased attendance at PHC, missed workdays and increased sick leave hence impairing **functional**

capacity, leading to poor work productivity, lost employment, and increase the number of dependent (Aldabal, Koura and Alsowielem, 2015)

Despite the impact of depressive symptoms in PHC settings, there remains a significant gap in understanding the multifaceted factors contributing to this phenomenon and how they interact. Therefore, this study aims to determine the prevalence of and factors associated with depressive symptoms among adults receiving outpatient care at primary health care facilities in Ilala District, Dar es Salaam

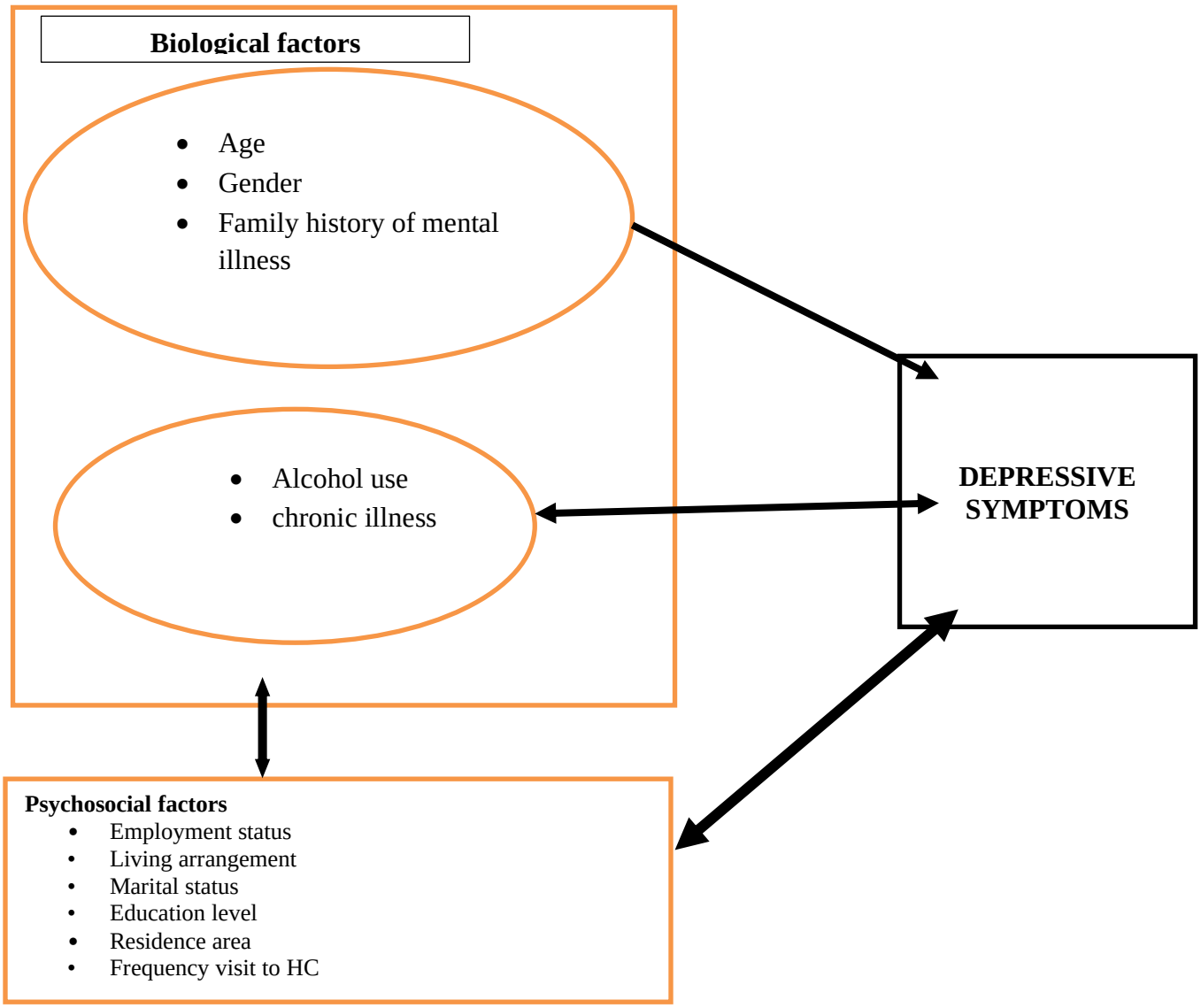
1. 3 Conceptual Frameworks

This study used the biopsychosocial model to explain the relationship between variables of interest. The biopsychosocial model is the common way of reflecting on and analyzing mental issues and how they occur. This theory was first proposed by George Engel a psychiatrist and physician. The model defines the occurrence of an illness as the outcome of an interaction between biological, psychological, and social factors and is not one dimensional and hence negatively affects the mental health status. Also, the theory explains that biological, psychological, and social factors play a role in understanding physical and psychological well-being, disease, and management of the disease (Borell-Carrió, Suchman and Epstein, 2004). These biopsychosocial factors show their influences at different levels, including predisposing, precipitating, and maintaining or protecting against mental disorder occurrence

Presences of bio-psycho-social factors are considered stressful events for the occurrence of depressive symptoms. Adaptation of the model will be used in the understanding of the interaction of biological factors like age, sex, having a family history of mental illness, ever use of substances, and comorbidity medical conditions like HTN, DM, cancer HIV, etc. while psycho-social factors like living arrangement, Marital status, Education level, residence area and employment status on how they are interlinked in creating to mental disorders/ symptoms such depressive symptoms among adults receiving outpatient care at primary health care facilities at ILALA District- Dar es Salaam

Bio psychosocial model showing factors associated with depressive symptoms among adults receiving outpatient care at PHC facilities in Ilala District

Figure 1 bio psychosocial factors associated with depressive symptoms among adults receiving outpatient care



1.4 Rationale of the Study

The purpose of the study was to determine the prevalence and factors associated with depressive symptoms among adults receiving outpatient care.

The results of the study helped in building knowledge about the association of depressive symptoms and factors associated with it among adults receiving outpatient care at PHC facilities. Also informed the district medical office of the need to understand factors associated with depressive symptoms. Additionally, the findings provide valuable insight to address mental health issues in Tanzania. It is also part of my fulfilment to obtain a master's degree in medicine in psychiatry.

1.5 Research Question

1.5.1. General Research Question

"What is the prevalence and factors associated with depressive symptoms among adults receiving outpatient care at primary health care facilities in Ilala District -Dar es Salaam?"

1.5.2. Specific Research Questions

"What is the prevalence of depressive symptoms among adults receiving outpatient care at primary health care facilities at Ilala district – Dar es Salaam?

"What are the factors associated with depressive symptoms among adults receiving outpatient care at primary health care facilities in Ilala District -Dar es Salaam?"

1.6 Study Objectives

1.6.1 Broad Objective

- To determine the prevalence and factors associated with depressive symptoms among adults receiving outpatient care at primary health care facilities at Ilala District -Dar es Salaam

1.6.2 Specific Objectives

1. To determine the prevalence of depressive symptoms among adults receiving outpatient care at primary health care facilities in Ilala District -Dar es Salaam
2. To determine factors associated with depressive symptoms among adults receiving outpatient care at primary health facilities in Ilala District in Dar es Salaam

1.7 Hypothesis

`Null hypothesis:

There is no association between depressive symptoms and the biological, psychological, and social factors of interest among adults receiving outpatient care at primary health care facilities in Ilala District in Dar es Salaam

`Alternative Hypothesis:

There is an association between depressive symptoms and the biological, psychological, and social factors of interest among adults receiving outpatient care in primary health care facilities at Ilala District in Dar es Salaam.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Prevalence of depressive symptoms among adults receiving outpatient care PHC

Depressive symptoms are common among adults receiving outpatient care at PHC facilities, affecting individuals of all ages, and it is estimated that about 15-20% of patients may exhibit depressive symptoms at any given time and the situation is exacerbated by the emergence of COVID-19 up to (Mohan *et al.*, 2022). This chapter outlines various literature reviews on biological and psychological factors associated with depressive symptoms among patients receiving outpatient care. It has been structured based on the specific objective of the study proposal. Understanding the factors associated with these symptoms is crucial for effective intervention and management.

Prevalence of depressive symptoms among adults receiving outpatient care at PHC facilities

Globally, numerous studies have investigated the prevalence of depressive symptoms among patients attending PHC setting is high (Tylee and Gandhi, 2005), in large international study of participants from 14 countries reported 24% of attendees of primary health care found to have depression (Morriss, 1995), additionally, a systematic review and meta-analysis, which included 83 cross-sectional studies, found that the prevalence of depressive symptoms among outpatients at PHC facilities worldwide increased from 18% to 36%. The variation in prevalence is influenced by regional differences, cultural differences, methodological approach and diagnostic criteria used. (Wang *et al.*, 2017)

A systematic review and meta-analysis conducted in higher-income countries indicates that, on average, up to 20% of primary care attendees present with depressive symptoms (Mitchell, Vaze and Rao, 2009), (Craven and Bland, 2013). In the United States, reported a prevalence to be around 10% to 15%. (Belete and Anbesaw, 2022), Similarly, a systematic review and meta-analysis conducted in low- and middle-income countries (LMIC s) in 2022 prevalence ranges

from 15% to 28% among adults seeking care at PHC facilities (Fekadu *et al.*, 2022). The variation in prevalence rates is attributed to the use of different diagnostic criteria tools used to diagnose depression, areas of studies between countries, years of studies, sample size, and tools used, (Fekadu et al., 2022). For instance between 2018 – and 2020, in Australia prevalence was 9.8%, and in the USA 8.4% while in Peru (n=161061, secondary data analysis) was 5.1%,(Arias-de la Torre *et al.*, 2023), Similar trends are observed in European countries (n=542580) prevalence was found to be 6.54% ranging from 1.85% in Greece to 10.72% in Sweden (Torre *et al.*, 2015) and these are due to the proportion of people suffering from non-communicable and chronic diseases, which are associated with a higher risk of depressive symptoms.

In developed countries include; Belgium (n=538299), the prevalence of depressive symptoms increased from 6.73% in 2000 to 9.20% in 2019, (Walrave *et al.*, 2022), similar to trends observed in the US, Australia, and Canada, whereas in the US, prevalence increased from 6.6% in 2005 to 7.3% in 2015, in Australia it was 6.2% in 2015-2016, and in Canada around 4.7% in 2019 (Walrave *et al.*, 2022). This increase is attributed to improved detection and diagnosis, societal and environmental changes, and comorbidity (Walrave et al., 2022).

In Peru (n=161061, secondary data analysis from 2014-208, the prevalence increased from 2.8% in 2014 to 6.4% in 2018 using the PHQ-9 with a cut-off score of ≥15 and remained constant at 5.1% from 2018 to 2020 (Villarreal-Zegarra *et al.*, 2020) with the same population size. Similarly, in the US, the prevalence was reported at 21.6% from 2005-2008 and 20.1% from 2005-2010, attributed to underreporting and diagnostic challenges using the PHQ-9 (Shim et al., 2011).

In Africa bout 29.19 million people (9% of 322 million) have depression (Temitayo *et al.*, 2022) . Studies done between 2015 and 2021 have revealed increased rates of depressive symptoms among primary care attendees, with prevalence rates ranging from 28.4% to 40%. A meta-analysis found prevalence rate of 48% (95% CI: 39–57%) for depression across 42 studies in African countries (Bello and Cheong, 2022). Also In Sub-Saharan Africa (SSA), rates range

from 30% to 56% (Folb *et al.*, 2015), Botswana 40.9% (Motlhatlhedi, Molebatsi and Wambua, 2021), and in Ethiopia, (2020) prevalence was 42.8% (n= 1014) in rural areas at a cutoff score of 5 (Fekadu *et al.*, 2017), indicating that approximately one in three outpatient visitors at primary health care experience depressive symptoms, also in Ethiopia prevalence reported was 27.9% (n= 384) in urban settings (Haile and Sahile, 2021), comparable to that of Nigeria was 29.1% (n= 412), both using the PHQ-9 with a cutoff point of 5 (Ogunsemi *et al.*, 2010). Differences and similarities in prevalence explained by association with bio psychosocial factors that lead to life stressors

A systematic review and meta-analysis in Uganda, done from 2000 to 2021 and published in 2022, found a prevalence rate of 30.2% (n=123,859) with 127 studies much higher than the global depression rate of 3.8% by using the Hopkins Symptom Checklist(Mohan *et al.*, 2022). Similarly, studies in Malawi (n=350) and South Africa reported prevalence rates of 30.3% and 32%, respectively (Udedi, 2014) (Mashaba, Moodley and Ledibane, 2021). Assessment tools used, population samples, and social culture differences explain the similarities in differences in prevalence rates observed in variations, age groups, and settings (urban vs. rural). (Haile and Sahile, 2021)(Mohan *et al.*, 2022)

Despite depression being much common in recent years even in Tanzania (Ngoma, Prince and Mann, 2003), (Kimangale, 2023), a limited number of articles have focused on determining the prevalence of depressive symptoms and associated factors in the PHC setting among adult receiving outpatient care in Tanzania (Mbatia, Shah and Jenkins, 2009)

2.2 Factors associated with depressive symptoms among adults receiving outpatient care at PHC facilities

Several factors have been identified as correlates of depressive symptoms in PHC settings. The utilization of the bio-psycho-social model has led to the exploration of various factors linked to depressive symptoms.

2.2.1 Biological Factors Associated with Depressive Symptoms

Age

Depression can occur at any age, but older age is a predictor of its onset. Studies show a bimodal distribution of depression onset (Robert, 1989), with 70% of adults experiencing it before 35 years and 25% after 50 years (Robert, 1989). In Nigeria, depressed individuals were over 40 years old ($p = 0.001$, $X_2 = 11.46$). (Salihu and Udofia, 2016). Similar findings from Manaf and his colleagues showed Individuals aged ≥ 40 (n=111, 32.6%) had an odds of 1.3 developing depression compared to those <40 years, and in Malaysia. Also study done in Ethiopia showed participants of the age group 25–31 were less likely to have depressive symptoms (AOR: 0.36, 95% CI: 0.14–0.92, p\ 0.05) compared to participants of the age group 18–24 (Haile, 2021). Blanchflower et al. also reported that a typical individual's happiness reached its minimum at about age 44 years (Blanchflower and Oswald, 2009). Higher odds of depression in older adults may be attributed to factors like physical health problems, functional disability, and chronic pain that can make the older adult more susceptible to developing depression, also may be due to the disparity between functional status and expectations (Fiske, Gatz and Pedersen, 2003). Also, onset depression is characterized by stronger familial history and genetic loading, greater reactions to stressful life events, maladaptive personality traits, and hormonal fluctuations associated with events (Szymkowicz *et al.*, 2023).

Gender

Most studies found clear gender differences in the onset of depressive symptoms. Studies show significant gender disparities in the prevalence of depressive symptoms, with women having a higher odds of developing depressive symptoms twice that of men. This highlight with the study conducted in Morocco which show female gender has higher odd of depressive symptoms (P = 0.01 (OR) 2.1) (Oneib *et al.*, 2015), similar to Sri lanka study show females have a higher risk for developing depressive symptoms than males (OR = 1.4) (Senarath, Wickramage and Peiris, 2014) and systematic review studies by (Gutiérrez-Rojas *et al.*, 2020) between 2001 and 2018, reported depression rates were higher in women than men, with odds values ranging from 1.4 in Australia to 2.8 in Iran (Gutiérrez-Rojas *et al.*, 2020). In Nigeria, a study found that females (61.5%) had a higher odds (OR 2.39) of developing depression than men (Adewuya *et al.*, 2022), Similar to Nepal study by (Luitel *et al.*, 2024), reported odds of developing depression in women is 1.65 (p-0.003, 95%Cl 1.191-2.292, n=1197). The district differences of depressive symptoms could be attributed by genetic susceptibility predispositions and other biological factors, Hormonal changes**,** Life Stressor **s**uch as caregiving responsibilities, family conflicts, and work-life balance issues, which can contribute to depression (Aldabal, Koura and Alsowielem, 2015). Additionally, Furthermore, women make significantly more visits than men to the healthcare centers and are usually better than men in expressing their feelings (Al-Otaibi *et al.*, 2007)

Family History of Mental Illness:

There is a link between depressive symptoms and a family history of mental illness. Studies have shown that a positive family history of depression significantly increases the risk of developing depression (Hammen, 2018), especially when first-degree relatives are affected, doubling one's risk of developing depression (Buitelaar, 2009) , for instance, study done by Haile in 2021, and Al Balawi - 2019, involved 384 participants, depressive symptoms were assessed using PHQ-9 at a different cut-off score, showed odds of having a depression are higher (AOR: 3.78, 95% CI: 1.40–10.23, p\0.01, n=39) and (AOR = 2.75, 95% CI = 1.23-6.14), p = 0.014, n = 73) respectively, compared to those having no family member with mental illness

(Haile, 2021), (Al Balawi *et al.*, 2019) respectively. Similar to study done in Saudi Arabia n=840, participants interview by using PHQ-9 showed higher odds of (1.631, p-0.003) depression (Aldabal, Koura and Alsowielem, 2015) and study done by Anbesaw and colleagues also shown odds of association with depressive symptoms (AOR = 7.31; 95% CI: 2.27,23.49) (Belete and Anbesaw, 2022). Factors that contribute to depression include genetic predisposition, environmental factors, interaction with life events, and impact on coping skills**.** Also fear of the illness, stigma, and societal prejudices (Kenneth S. Kendler, 2001)

Chronic illness

Chronic illness and depressive disorders are common and its bidirectional (Herrera *et al.*, 2021). Although the link between chronic illness and depression is complex. Depression is more common in all chronic disease (Clarke and Currie, 2009). Chronic illnesses like any medical conditions includes cardiovascular disease, HIV, cancer, diabetes and any disability significantly increase the likelihoods of depression and vice versa (Gutiérrez-Rojas *et al.*, 2020) (Birk *et al.*, 2019). A study in South Africa found that participants with chronic illness had 2.12 higher odds of depression than those without chronic illness (p = 0.029) (Mashaba, Moodley and Ledibane, 2021). Similar to a study from Ethiopia done by Haile and his colleagues with 384 participants found that 42.7% of those with chronic conditions had depression, with an adjusted odds ratio (AOR) of 2.11 (Haile, 2021). Also study from Sri Lanka report increase like hood of depressive symptoms to the individual with disability (Senarath, Wickramage and Peiris, 2014).

Patients with chronic diseases often experience physical dysfunction, social dysfunction, and economic burden, leading to feelings of despair and hopelessness. Also, depression causes increased risk of developing chronic illnesses due to its effects on pro inflammatory mediators, hypothalamic-pituitary axis, autonomic nervous system, and metabolic factors which is involved in the body's stress response. (Ma *et al.*, 2021). Also, Individuals with depression may engage in unhealthy behaviors like poor diet, lack of exercise, and substance abuse, which increase the risk of developing chronic diseases (Li *et al.*, 2023). Furthermore, depression often leads to

unhealthy lifestyle choices, including poor diet and lack of physical activity, all of which contribute to the development or exacerbation of chronic diseases. (Liu and Lin, 2023).

The mechanisms that link depression and chronic illness include dysregulation in the hypothalamic-pituitary-adrenal (HPA) axis, which governs the body's stress response. Prolonged stress can lead to chronic inflammation through the release of pro-inflammatory cytokines, contributing to the development of conditions like cardiovascular disease and diabetes (Hantsoo *et al.*, 2023). Additionally, depression influences autonomic nervous system activity, which can increase the risk of metabolic syndrome, leading to further complications such as hypertension or obesity. (Franklyn *et al.*, 2022)

Current alcohol consumption

Literature findings of a strong association between alcohol consumption and depressive symptoms (Åhlin *et al.*, 2015). This might be explained by the China study showed OR = 1.339; 95% CI: 1.074–1.668 (n=5294) of developing depression among alcoholic users (Gu *et al.*, 2013), Ethiopian studies reported an increase in depression odds among alcohol users, (AOR: 2.73, 95% CI: 1.22–6.10, $p < 0.05$) (Haile and Sahile, 2021) and Nigeria study also show odd of developing depressive symptoms among alcohol use is (OR 1.13) (Adewuya *et al.*, 2022)

There is evidence that depression can also increase the risk of alcohol use, creating a bidirectional relationship between the two conditions (Shin, 2022) and use can trigger or intensify the feelings of loneliness, sadness, and hopelessness often associated with depressive symptoms among participants (Belete and Anbesaw, 2022)

Mechanisms by which alcohol drinking contributes to depressive symptoms are not fully understood. However, it is thought that Alcohol is a depressant that alters the brain's neurotransmitters and chemical levels, which can trigger or exacerbate depression symptoms (Jung-Hwa Yang, 2021) , (Ramsey, Engler and Stein, 2010) Individuals with depression may turn to alcohol as a way to self-medicate and temporarily relieve their symptoms, such as feelings of sadness, hopelessness, and low energy. (Ramsey, Engler and Stein, 2010)

2.2.2 Psycho-Social Factors Associated with Depressive

Marital status-

Marital status plays a significant role in the development of depressive symptoms. Being married tends to offer protective benefits against depression to both males and females (Scott, Wells and Sampson, 2019). This is because, the emotional support and stability provided by marriage can contribute to improved mental health outcomes (Scott, Wells and Sampson, 2019) Marriage status can decrease an individual's prevalence of depression by 5.38% points by improving an individual's psychological condition. For instance, a study conducted in Saudi Arabia found that married individuals had a lower risk of depression (AOR = 0.36) compared to their unmarried counterparts (Al Balawi *et al.*, 2019). A Mozambique study done in 2023 among 502 participants shows individuals who are unmarried (aOR = 2.48) or divorced, separated or widowed (OR = 2.97) had significantly higher odds of depression, (Muanido *et al.*, 2023) similar to the study done by Haile and his colleagues n= 172 (44.8%) showed an increased risk of depressive symptoms among unmarried individuals (Haile and Sahile, 2021). The reason for higher odds of association in unmarried is due to factors like social isolation, stress, and the absence of emotional support. Also, the transition to a new life without their partner can be challenging and increase the risk of depression. (Anggana *et al.*, 2022) . Also, odds ratios for depression show a steady rise with increasing age for those who are single or in common-law relationships, compared to married people.

Level of education

Depression and education share a significant relationship, as evidenced by studies from different countries, indicating a higher risk of depression among individuals with lower education levels. For instance, in Uganda, study results showed lower education has increased the odds (OR=4.463, p=0.011, 95% CI= 1.410; 14.127) of depression (n=73, 44%) (Gafaranga *et al.*, 2024). Similarly study done in Croatian at a sample size of 3,000; reported that 25% of those with limited education experienced depression (Milanović *et al.*, 2015), and findings from Udedi in 2014, n=1,200 (Udedi, 2014). Individuals with lower education levels are more susceptible to stress and may seek health services due to somatic symptoms resembling

depression. Higher education like college, degree or high level highlighted to be protective factors against depressive symptoms. For instance, a study done by (Taple *et al.*, 2020) showed an individual with a college degree or higher has a 54% lower odds of depressive symptoms. Higher education provides more economic and social resources to cope with depression, fostering creativity and enhancing employment opportunities.

Living with

Living with; refers to the situation in which someone is either living alone, living with family members, or with others (Living Arrangements in Later Life). Living alone has been identified as a significant predictor of depression (Wilmoth and Chen, 2003). Many research highlight that living alone can be a significant predictor of depression, as social isolation is often linked with decreased emotional support and increased loneliness. For instance, to Brazil study by (Silva *et al.*, 2019) involved 360 adults participants, with age group >60 years reported residing alone increased OR=1.66 (95% CI 1.09-2.53) and the Japan study involved participant n=964, reported living alone was also a significant factor ($b = 0.170$, $P < 0.05$) with depressive symptoms (Fukunaga *et al.*, 2012), while living with family or others has been recognized as a protective factor against depression (Spence *et al.*, 2014). Social support systems, especially those provided by family members, offer emotional and practical support that can help mitigate the feelings of loneliness and isolation that contribute to depressive symptoms (Chung, 2019).

Employment status

Employment is crucial for financial stability, self-esteem, and basic needs fulfilment. Research shows a significant association between employment status and depressive symptoms, with higher odds among unemployment. Motlhatlhedi, Molebatsi, and Wambua's study (2021) reveals a significant link between unemployment and depressive symptoms, with a higher likelihood of experiencing these symptoms among those unemployed ($n = 91$ ($\chi 2 = 15.139$, and $p = 0.002$). In 2014, a study involving 769 primary health care patients using the Zung self-rating depression scale found that unemployed individuals were significant predictors of depression, with a higher odds ratio (2.560, p-0.001) (Milanović *et al.*, 2015). Main reasons for

higher depression rates among the unemployed in PHC; is that being unemployed may negatively affect a person's self-esteem and mood thus triggering depression (Jo *et al.*, 2015). Also, depression contributes to absenteeism and decreased productivity, ultimately impacting job performance and efficiency, potentially culminating in job loss (Milanović *et al.*, 2015) (Rizvi *et al.*, 2015)

Residential area

Rural-urban differences in depression have been highlighted in several studies, but the relationship between residence area and depression is complex and varies depending on specific geographic units, population subgroups, and other contextual factors. Different studies provide varying insights into how living in rural or urban areas affects the prevalence of depressive symptoms, with some showing a higher prevalence in rural areas and others finding no significant difference or even a higher prevalence in urban settings.

A study using data from the Canadian National Population Health Survey reported a positive association between urban residence and depressive symptoms (Peen *et al.*, 2010), similar to a Korean study that found that urban residents had 1.2 times higher odds of experiencing depressive symptoms compared to rural residents ($p<0.05$) (Ji-An Jeong1, 2023). This study suggests that living in urban areas may expose individuals to certain stressors, such as higher living costs, overcrowding, and noise pollution, which could contribute to higher rates of depression.

Conversely, a study by Kanamori et al. found that depressive symptoms were 1.2 times more prevalent in rural areas compared to urban areas (Kanamori *et al.*, 2021), similarly, a study conducted in China showed a significantly higher prevalence of depression in rural areas (2.0%) compared to urban areas (1.7%) (Cong *et al.*, 2024). This indicates that rural populations in certain countries might be more vulnerable to depression. Supporting this, another study using data from the National Survey of Drug Use and Health (2009–2011) reported higher odds of depressive symptoms in rural areas compared to large urban areas in the U.S (Breslau, Marshall and Pincus, 2014). The increased association of depressive symptoms in rural areas has been

attributed to factors such as limited access to healthcare, environmental stressors, and cultural norms in rural areas, where mental health issues may be less openly discussed or addressed, contribute to the higher risk of depressive symptoms (Saha *et al.*, 2024).

However, not all studies agree with the notion that rural areas are more strongly associated with depressive symptoms. For example, a study by Philip found no significant association between living in rural areas and the development of depressive symptoms (Philip D. St. John, 2009). Similarly to study done by John and his colleagues also did not find a significant association between rural or urban residence and depressive symptoms (John, Blandford and Strain, 2006)

This study challenges the idea that rural environments are inherently detrimental to mental health. Factors contributing to these differences include educational disparities, social isolation, and distance to services include lack of transportation and access to services (Saha *et al.*, 2024)

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

The study was a facility-survey cross-sectional study exhibiting a quantitative data collection approach. An analytical cross-sectional study was conducted to provide the determination of depressive symptoms and factors associated among adults receiving outpatient care.

3.2 Study population

The study population consisted of patients aged 18 years and above who received outpatient care at the PHC facility.

3.3 Study area

The study was conducted at 2 health centers, named Buguruni and Chanika. These HCs are located in the Ilala district (Ilala Municipal Council). Ilala district is one of five districts of the Dar es Salaam Region of Tanzania. It covers an area of 364.9 km^2 (140.9 sq mi), with a population size of 1,649,912 Ilala District has 142 healthcare facilities including public and private, and six health which offer various health services including outpatient and inpatient. Two HCs offer inpatient and outpatient services, 4 HCs offer outpatient services, child health, and other essential health services. Buguruni and Chanika offer outpatient and inpatient services and maternal and child health.5 HCs are located in urban and one HC is located in peri-urban Chanika is a growing town covering 25.35 km^2, with a Population [2022] size 75,271 and 9 wards, Buguruni covers a total km 2.806 with a population size of 47,278 [2022-Census]. Chanika HC and Buguruni HC are located in urban and peri-urban and are accessible to all people. It provides inpatient care, outpatient services (including a clinic for HIV, DM, HTN, and general OPD), maternal and child health, and diagnostic tests, thus experiencing a high patient flow for instance Chanika HC IS about 50-60 per 24hrs at general OPD and Buguruni HC serves approximately 200 to 300 patients daily include and general OPD serves about 40-50 patients per day. Both are government facilities

3.4 Sample size estimation

The sample size was calculated using an equation taken from Cochran's formula. Based on the study, the calculation of the sample size used the prevalence rate from another study done in Ethiopia, and the formula was applied to calculate the sample size.

$$N = \frac{Z^2 P (1-P)}{d^2} = \frac{(1.96)^2 0.279 (1-0.279)}{(0.05)^2}$$

Whereby:

N= estimated sample size

Z= confidence level at 95% (standard value of 1.96)

P= prevalence of depression among adults attending primary health care is 27.9% (Haile et al 2021)

d= Margin of error at 5%

Hence, according to the formula above

N= 318

To account for possible non-respondents, 10% of the sample size value was added to 32.

Hence, the final sample size was determined to be 342 as the minimum sample size. We estimate a maximum sample size of 350 due to an overflow of participants and willing to participate

3.5 Sampling Technique and Procedure:

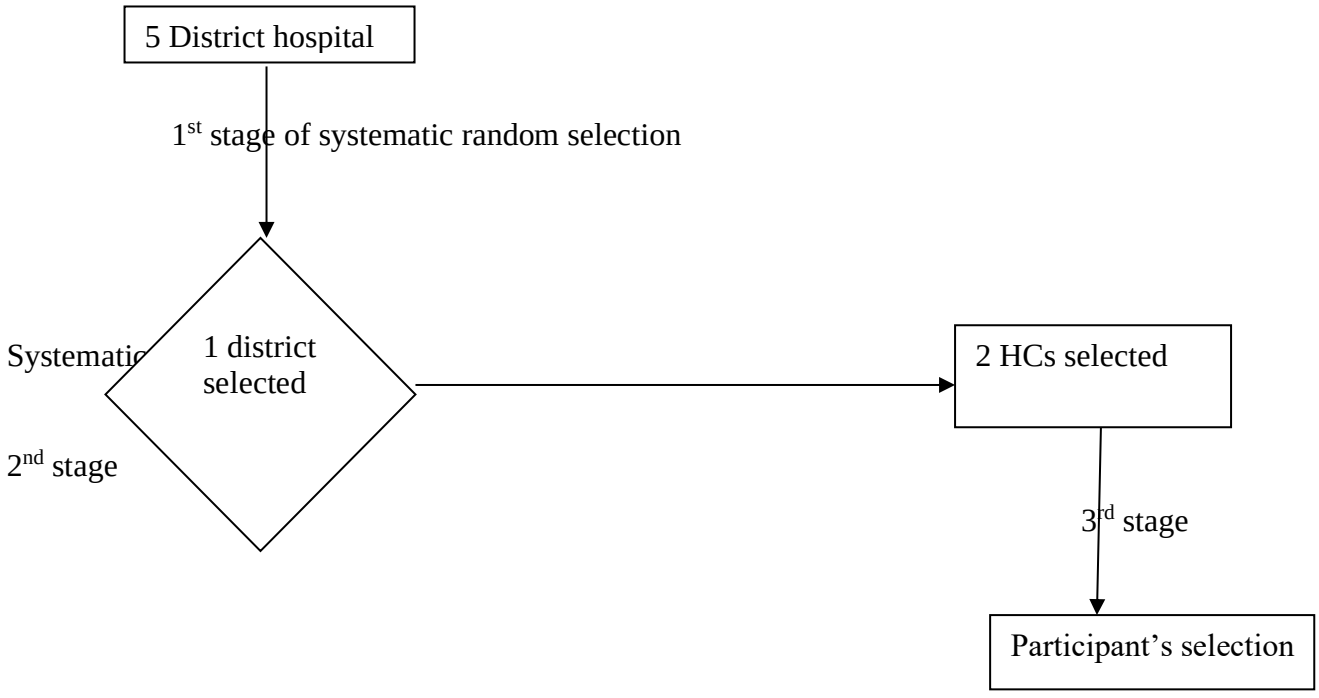
Multi-stage cluster sampling technique was utilized to randomly select of study site. There were two stages of this process. First, one district from 5 districts in Dar Es Salaam, Tanzania was randomly selected to represent the general population. This was done by developing a sampling frame by assigning a number to each district and using a random number generator to randomly select one district. Following this, of all government HCs in that district, two HCs were selected (one from urban and the other from peri-urban) that best represent the study population. This was done by assigning numbers to each HC separately from urban and peri-urban and developing a sampling frame for each HC. A random number generator randomly selected one HC from each of the two sampling frames corresponding to the generated number. Then after

obtaining the study sites, lastly, participant selection from each health center was done through random selection by rotary. Those who were interested in participating then gave written consent and an introduction to what the study was about.

The sample size from each facility was as follows: Chanika HC saw about an average of 2,100 participants per month, and Buguruni HC saw about 2,500 participants per month, with a male-to-female ratio of 1/3 to 2/3, respectively.

Hence, Chanika HCs total number of participants selected was 156, with 52 males and 104 females. The number of participants seen per day was 3 males and 7 females. Buguruni HC received an average of 2,500 participants, and the total number of participants selected was 186, with a male-to-female ratio of 62 to 124. Participants seen per day had a male-to-female ratio of 3 to 7, respectively. A total of 21 days were used for data collection.

Figure no 2: The sampling technique and procedure



3.6 Sample selection criteria

3.6. 1 Inclusion Criteria

Adults receiving outpatient care at PHC facilities in Dar es Salaam aged 18 and above consented to participate in the study.

3.6.2 Exclusion criteria

- Adults with mental illness receive outpatient care at PHC facilities in Ilala district in Dar es Salaam. The reason is due to failure to initiate consent is due to some may have cognitive and emotional challenges that could trigger/ exacerbate symptoms
- Adults who are acutely physically ill at the time of data collection and unable to provide consent

3.7 Variables

3.7.1 The independent variables

Biological factors; Age, sex, Family history of mental illness, substance use, comorbidity disorders

Psychosocial factors; Employment status, marital status, Level of education Occupation, and social support

3.7.2 The dependent variable: Depressive symptoms

3.8 Data Collection Tools and Measurements

Data was collected using a semi-structured questionnaire with closed questions. The tools used were quantitative and were translated into Kiswahili, developed from the original English version. The tools, including the Socio-demographic Questionnaire and PHQ-9, were compiled into one research document.

3.8.1 Socio-demographic and clinical characteristics

This section of the questionnaire was developed by the researcher based on a compilation of the factors that have been associated with depressive symptoms. Social demographics and clinical characteristics of participants include; gender, age, marital status, education level, current alcohol use, having a family member of mental illness, employment status, residence area, chronic illness, and living arrangement.

3.8.2 Patient Health Questionnaire 9 version (PHQ-9)

The PHQ-9 was a multipurpose instrument for screening, diagnosing, monitoring, and measuring the severity of depression. It summarized DSM-V TR 2022 criteria with other major depressive symptoms into a validated brief self-reporting tool. The questionnaire has nine questions asking about how often participants had experienced symptoms of depression within the past 2 weeks. Each statement had a possible score from 0 to 3 (0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day), with a maximal score of 27. A score of 0–4 indicated asymptomatic, 5–9 indicated mild depression, 10–14 moderate depression, 15–19 moderately severe depression, and 20–27 severe depression. It was validated in the Tanzania setting and translated to suit the participants, having Cronbach's Alpha of 0.83 (Smith Fawzi et al., 2019). Individuals scoring 9 or more were considered depressed, and those with lower scores were considered non-depressed. The tool had been translated into a Swahili version and an English version to help participants understand the interview questions.

3.9 Pre-testing data collection

To check if the questionnaire was understood a total of ten participants were inverted to participate in the piloting of the tools, five from each HC. This gave an approximate time for the interview. The results of the pilot study helped to modify the items according to the challenges raised and to estimate the time required for each sheet. Furthermore, pretested sheets were not included in the study data analysis.

3.10 Research assistant's recruitment and training

Two research assistants were recruited and trained on how to use the research tools and the Finest way to collect data. The priority was given to Doctors at OPD male and female Training for data collection was done for 3 days before the initiation of the data collection procedure. This took place before the beginning of data collection

3.11 Data analysis

The collected data was entered into the computer for checking and cleaning for completeness and accuracy, then analyzed by using Statistical Package for Social Science (SPSS for Windows version 23) by the principal investigator.

In this study, the independent variables of interest include; gender, age, having a member with mental illness, marital status, level of education, employment status, chronic illness, residential area, living arrangement, alcohol consumption, and the dependent variable is depressive symptoms.

Descriptive statistics (univariate analysis) - social demographic and clinical characteristic data were summarized and interpreted through tables using means, frequencies and standard deviations.

Bivariate and multivariate analysis were done to determine the association between independent and dependent variables at a significant level P-value of <0.05 Logistic regression analysis on factors identified in the bivariate analysis with a P-value of <0.2 was conducted independently associated with depressive symptoms

3.10 Ethical Issues and Research Clearance

Ethical Approval to conduct the study was obtained from the MUHAS Senate Research and Publications Committee. Subsequently, permission for the study was secured sequentially from the R.M.O of Dar es Salaam to the D.M.O at Ilala district, and then to the in-charge personnel at the designated health facilities, Buguruni Health Center, and Chanika Health Centers.

3.11 Obtained consent

Those participants who attended and received outpatient care at the time of data collection were informed verbally about the study, the aim of the study, the nature of the study, and the benefits and risks of the study by the research and/or researcher assistant before data collection. Those who were interested in participating in the study were recruited and asked to sign informed consent for participation. Those who signed consent were interviewed by the investigator and the assistant investigator. Moreover, the right to withdraw from the study was clearly described. Interviews were conducted during working hours. Participants were informed that there was no financial gain following participation. To maintain confidentiality of the collected data they were stored in a locked cabinet to which only the research and assistant researchers had access. No identifying information was kept with or attached to the questionnaires

Participants who scored ≥ 9 on the PHQ-9 questionnaire were contacted by phone and referred for appropriate mental health intervention in the Psychiatry department. They were given the contact information of the investigator, supervisor, and director of the Research and Publication Committee from MUHAS in case they had any questions, concerns, or complaints. They were thanked and appreciated for those who participated.

CHAPTER FOUR

4.0 RESULTS

This study involved 350 participants with a 100% response rate among those receiving outpatient care. Data entry for analysis using SPSS-23 computer software.

4.1 Socio-demographic, and Clinical characteristic of Participants

A total of 350 participants participated in this study. The medium age was 33 years, ranging between 18 to 86 years and almost three-quarters of participants were aged between 18 – 39 (n=258; 73.7%) with females accounting for more than half of the participants n=200 (57.1%), and more than half were married 52.6% (n=184). Half 50.3% (n=176) had secondary education and nearly two-thirds of participants were employed 62.6% (n=219). More than three-quarters 84.0% (n=296) of participants resided in urban areas, more than three-quarters of participants lived with family, relatives, or friends 81.7% (n=286)

Nearly a quarter of the participants had a family history of mental illness 22.2% (n=77) while almost a fifth 17.7% (n=62) had chronic medical conditions and nearly two-fifths (38.5%) had current alcohol consumption. As shown in Table 1 below

Table 1: Socio-demographic, and clinical characteristics of participants

Variable	n =350	Percentage %
Age Categories	**Mean ±SD (34.65 ±13.18).**	
18-39	258	73.7
40-59	73	20.9
>60	19	5.4
Gender		
Female	200	57.1
Male	150	42.9
Residential Area		
Rural	56	16
Urban	294	84
Marital Status		
Single	122	34.9
Married	184	52.6
Divorced/ Separated	44	12.6
Education Status		
Primary education	119	34
Secondary education	176	50.3
College/High education	55	15.7
Living Arrangement (how do you live with)		
Alone	64	18.3
Family or with partner	286	81.7
Employment Status		
Employed	219	62.6
Unemployed	131	37.4

Family history of mental Illness		
Yes	77	22
No	273	78
Presence of Chronic Illness		
Yes	62	17.7
No	288	82.3
Alcohol Consumption		
Yes	135	38.6
No	215	61.4

4.3 Prevalence of depressive symptoms according to severity among adults receiving outpatient care at PHC

Nearly three out of every tenth participants were found to have depressive symptoms (28%, n=99) using PHQ 9 cutoff point of equal or more than 9 where by14%, reported moderate depressive symptoms, 8% reported moderate-severe depressive symptoms, and 3% reported to had mild and severe depressive symptoms as shown in figure 2

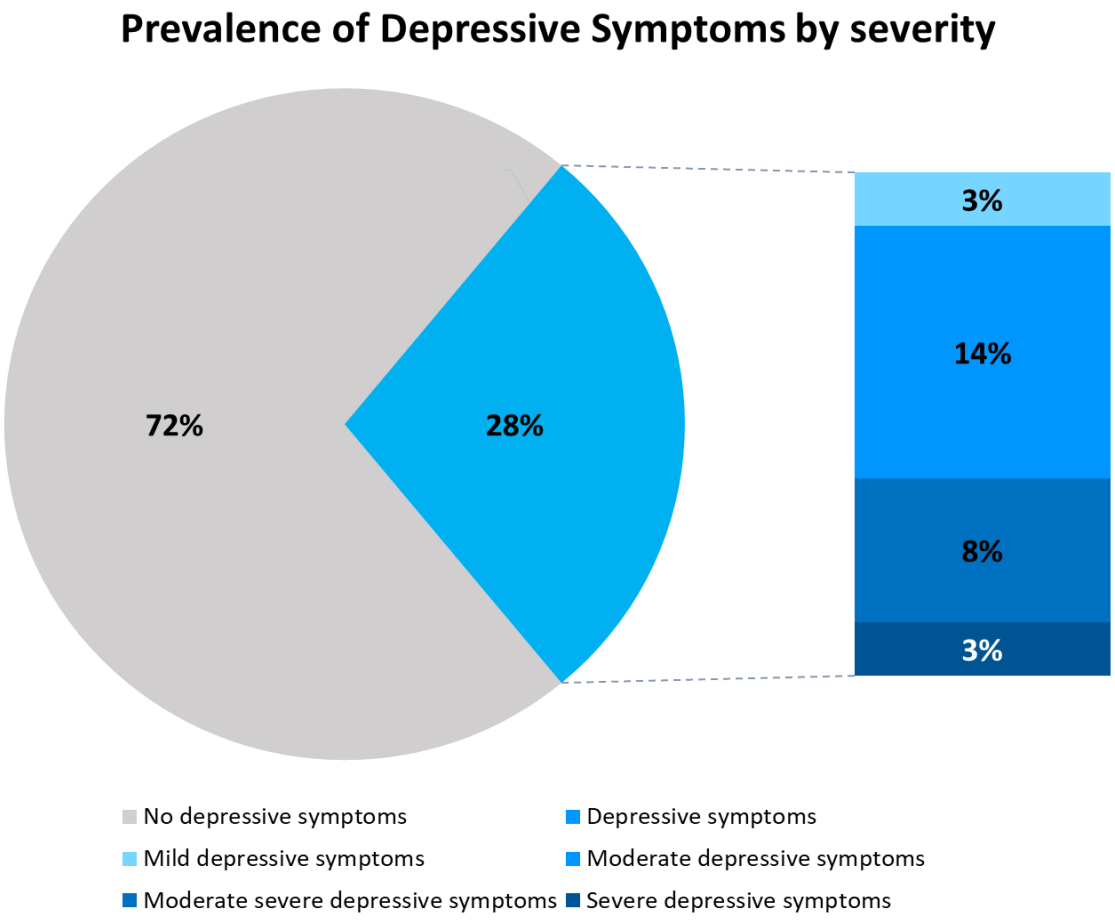


Figure 2: Prevalence of depressive symptoms among adults receiving outpatient care at PHC

4.5 Bivariate and Multivariate analysis for factors associated with Depressive symptoms among adults receiving outpatient care.

In the bivariate logistic regression analysis, several factors were statistically associated with depressive symptoms (p-value< 0.05). Individuals aged 40-59 years showed statistically significant with depressive symptoms (COR) of 2.24 (95% CI: 1.29-3.85) compared to those aged 18-39 years (P = 0.004). Females had significantly higher odds of 1.75 (95% CI: 1.074-2.839, P = 0.025) compared to males. Those divorce/separated show statistically significant with depression (COR 3.18 (1.61-6.29), P=0.001) who are unemployed 0.57 95%Cl: 0.34-0.94, p=0.027, and living alone 1.99 (95%Cl 1.13-3.51, p=0.017. Participants who residing in urban area showed notable significant association with depressive symptoms 0.5(95%CL; 0.28-0.91, P=0.022, who had positive family history of mental illness 3.39 (95%Cl; 1.99-5.75, p=<0.001), with current alcohol consumption 2.24 (95%Cl; 1.39-3.59, p=0.001), with presence of chronic illness 3.52 (95%Cl; 1.99-6.21, p=<0.001

In multivariate analysis, factors showed a statistical association and those with p-value <0.2 were considered. Where gender, residence area, family history of mental illness, alcohol consumption and presence of chronic illness were shown to have independent associations with depression. Where female participants had higher odds of 1.87 (95%CL; 1.05-3.32, P=0.024) of depressive symptoms compared to male participants, also participants reported having a family history of mental illness likelihood of having depression is two times the odds than those who didn't report (AOR 2.54, 95%Cl; 1.40-4.61, p=0.002). Furthermore, the presence of chronic illness was four times associated with depression (AOR 4.29, 95%Cl; 2.08-8.88, p=<0.001). Additionally, alcohol consumption, had two-fold odds of depression (AOR 2.53, 95%Cl; 1.41-4.55, p=0.005). Those participants reported residing in the urban area showed lower odds of depression (AOR 0.47, 95%Cl 0.23-0.94, p=0.023)

Table 2: Bivariate and multivariate analysis of factors associated for depressive symptoms

Variable	N (%)	Depression Status	Bivariate analysis		Multivariate analysis	
		Depressed n=99	Crude OR, 95% CI	P-Value	Adjusted OR, 95% CI	P-value
Age Categories						
40-59	73	36 (42.9%)	2.24 (1.29 - 3.85)	**0.004***	1.59 (0.80 - 3.15)	0.184
>60	19	4 (19.0%)	0.81 (0.26 - 2.52)	0.714	0.36 (.088 - 1.49)	0.159
18-39	258	59 (24.1%)	*Reference*		*Reference*	
Gender						
Female	200	33(22%)	1.75 (1.07 - 2.83)	**0.025***	1.87 (1.05 - 3.32)	**0.024***
Male	150	66 (33%)	*Reference*		*Reference*	
Marital Status						
Single	122	33 (27.0%)	1.18 (0.69 - 1.99)	0.536	1.86 (0.97 - 3.57)	0.062
Divorced/ Separated	44	22 (50%)	3.18 (1.61 - 6.29)	**0.001***	2.21 (0.89 - 5.49)	0.088
Married	184	44 (23.9%)	*Reference*		*Reference*	
Education Status						
Primary education	119	39 (32.8%)	2.19 (1.00 - 4.81)	0.05	2.45 (0.91 - 6.67)	0.078
Secondary education	176	50 (28.4%)	1.79 (0.84 - 3.82)	0.135	2.37 (0.95 - 5.93)	0.064
College/High Education	55	10 (18.2	*Reference*		*Reference*	
Employment Status						
Unemployed	131	28 (21.4%)	0.57 (0.34 - 0.94)	**0.027***	0.69 (0.35 - 1.35)	0.283
Employed	219	71 (32.4%)	*Reference*			
Living arrangement (whom do you live with)						
Alone	64	73 (25.5%)	1.99 (1.13 - 3.51)	**0.017***	1.52 (0.73 - 3.17)	0.268
Family or with a ,partner	286	26 (40.6%)	*Reference*		*Reference*	
Residence area						
Urban	294	76 (25.9%)	0.5 (0.28 - 0.91)	**0.022 ***	0.47 (0.23 - 0.94)	**0.023***
Rural	56	23 (41.1%)	*Reference*		*Reference*	
Family history of mental Illness						
Yes	77	38 (49.4%)	3.39 (1.99 - 5.75)	**< 0.001***	2.54 (1.40 - 4.61)	**0.002***
No	273	61 (22.3%)	*Reference*		*Reference*	
Alcohol Consumption						
Yes	135	52 (38.5%)	2.24 (1.39 - 3.59)	**0.001***	2.53 (1.41 - 4.55)	**0.005***
No	215	47 (21.9%)	*Reference*		*Reference*	
Presence of Chronic Illness						
Yes	62	32 (48.4%)	3.52 (1.99 - 6.21)	**< 0.001***	4.29 (2.075 - 8.88)	**<0.001***
No	288	67 (23.3%)	*Reference*		*Reference*	

CHAPTER FIVE

5.0 DISCUSSION

Depressive symptoms refer to the various emotional, cognitive, and physical manifestations associated with depression. These symptoms can vary in severity and may include sadness, loss of interest or pleasure, changes in appetite or weight, sleep disturbances, fatigue or loss of energy, feelings of worthlessness or guilt, difficulty concentrating, changes in physical activity, and thoughts or behaviours related to suicide. These symptoms can significantly impair daily functioning and quality of life and can be triggered by various biological psychological and social factors

The broad objective of this study was to determine the prevalence and factors associated with depressive symptoms among adults receiving outpatient care at primary health care in the Ilala district.

5.1 Prevalence of depressive symptoms among adults receiving outpatient care.

The prevalence of depressive symptoms in our study (28%). This implies that nearly three in every tenth of respondents had depressive symptoms at the time the study was conducted. This finding is similar to the Ethiopia study and Nigeria, 27.2%, (n= 384) and 29.1% respectively. (Haile and Sahile 2021) and (Ogunsemi et al., 2010). These similarities are explained by the use of validated PHQ-9 (Obadeji *et al.*, 2015), but slightly higher than the prevalence reported in a recent systematic review of studies conducted in LMIC (Fekadu *et al.*, 2022), Nepal (14.5%) (Luitel *et al.*, 2024) and Croatia (Milanović *et al.*, 2015). However the prevalence rate is lower than the prevalence reported in Malawi (30.3%, n=350), (Udedi, 2014), Saudi Arabia (74%, n=384) (Al Balawi *et al.*, 2019) and Botswana (n=40.9%, n=259) (Motlhatlhedi, Molebatsi and Wambua, 2021).

The observed difference in the prevalence rate in various studies could be attributed to variations in the social demographic characteristics of the studied population, variations in the background health status of the participants (healthy or patients), and the application of different tools to diagnose depression in various studies as well as cultural variation between different countries. (Evelyn J.Bromet, 2013), (Ghazisaeedi *et al.*, 2022)

Looking at the severity of depressive symptoms using PHQ 9 cut-off point of equal or more than 9 where by14%, report moderate depressive symptoms, 8% report moderate severe depressive symptoms, and 3% report having severe depressive symptoms. This also reflects the study done by ((OF, 2018) of those who have mild depression symptoms at 19.2%, moderate depression symptoms at 8.2%, moderately severe depression symptoms at 4.3%, and severe depression symptoms at 2.5%. These results did not concur with other studies on the severity of severity depression in Saudi Arabia which showed that people with mild depression 37.8%, followed by moderate, 20.8% with moderately severe and 15.4% had severe depression. The reason for the discrepancy is use cut -0ff score of 5 at PHQ-9 (Al Balawi *et al.*, 2019)

5.4 Factors associated with depressive symptoms among adults receiving outpatient care

Our analysis of the association between depression and bio-psychosocial factors indicates that the proportion of those with depression was higher in the female gender, having family members of mental illness, alcohol consumption, and presence of chronic illness. Also, we found that residing in urban was not associated with depression in this study population. The statistically significant relationships underscore the need to consider these factors to address the unique challenges faced by study groups in the development of support systems and targeted interventions for effective strategies for promoting mental well-being.

5.5 **Biological and psychosocial factors associated with depressive symptoms**

The findings of this study showed that a family history of mental illness significantly increases the risk of developing similar conditions (p-value <0.001). This finding was supported by a Saudi Arabian study, (Al Balawi *et al.*, 2019), an Ethiopian study (Haile, 2021), and another study conducted in Malaysia among 204 PHC attendees (Hashim *et al.*, 2016). This implies that hereditary characteristics may play a significant role in the development of mental illnesses in families. (Remes, Francisco and Templeton, 2021). Also (Weissman, 2016) reported, a family history of depression doubles the risk for depression when encountering environmental stressors and may be contributed by having stress, fear of the illness, stigma, and societal prejudices and depression. This highlights the understanding of these factors associated with depression at PHC

is essential to implement comprehensive strategies for the needs of individuals at risk for mental illness (Mbatia, Shah and Jenkins, 2009)

Depression was significantly associated with recent alcohol consumption. In this study Individuals reported with current alcohol consumption were more likely to develop depressive symptoms (P = 0.009). This is consistent with earlier findings of a strong association between alcohol consumption and depression (Åhlin *et al.*, 2015). This is also similar to Ethiopia where they reported that alcohol consumption was associated with depression (AOR: 5.43) (Haile and Sahile, 2021). This is explained by; Alcohol may be used as a coping mechanism for emotional distress (Hammerton *et al.*, 2023), which exacerbates neurotransmitter imbalances crucial for mood (Kuria *et al.*, 2012). This finding highlights the need for targeted interventions addressing the group's use of alcohol to alleviate depression within the studied population

Additionally, individuals reported to have at least one chronic disease were more likely to develop depressive symptoms, similar to studies done in China (Ma *et al.*, 2021) and Canada (Gutiérrez-Rojas *et al.*, 2020) compared to those who did not report the presence of chronic disease. Individuals with chronic conditions often experience severe pain, which significantly increases the likelihood of developing depressive symptoms((NIMH)- US, 2024) (Helgeson and Zajdel, 2017). Mechanisms by which chronic disease can predispose individuals to depressive symptoms are due to limited limit physical activity and social engagement, leading to withdrawal from rewarding activities and increased feelings of isolation and helplessness, (Dos Santos, Lazzari and Silva, 2017), and also depressive symptoms are believed to be influenced by inflammatory pathways and immune system changes (Miller, Maletic and Raison, 2010). Hence, offering suitable mental health support is one of the most effective intervention strategies for people with chronic disease

Women were 1.9 times more likely to experience depression compared with men. Similar to the studies done in Morocco (Oneib *et al.*, 2015), Nigeria (Salihu and Udofia, 2016) and Nepal (Luitel *et al.*, 2024). Reasons for high gender difference could be due to a combination of several factors including social and cultural factors that lead women to prioritize seeking medical help,

and reporting of symptoms compared to men (Güney *et al.*, 2024), amount of work performed such as to look after the family and perform household chores even if they are employed being (Lamichhane *et al.*, 2011), hormone changes which may disrupt brain chemicals like serotonin, which regulate mood (Albert, 2015), genetics factors which also play a role in the susceptibility to depression when interacting with the environment (Zhao *et al.*, 2020). Understanding the underlying factors contributing to the rise in female depression is essential for tailoring health interventions (Lim *et al.*, 2018)

Residing in an urban area is a protective factor for depressive symptoms (aOR = 0.47, p-value = 0.23.). Our results are consistent with studies conducted in China (He, Song and Jian, 2020). A possible reason could be explained by the availability of health facilities, specialized health services such as mental health, and access to health services (He, Song and Jian, 2020), also urban living leads to higher reported happiness due to greater social networks and interaction. This highlights the importance of integrating nature into an urban environment to promote mental well-being and mitigate the risk of depression among residents.

Other factors like age, sex marital status and whom you live with, did not independently contribute to depressive symptoms. However, it is essential to interpret these findings within the context of the study's limitations and the complex interplay of various factors influencing depression, since some studies reported different this, and linked age, sex, marital status and whom you live with to depression. (Aldabal, Koura and Alsowielem, 2015), (Al Balawi *et al.*, 2019).

CHAPTER SIX

6.0 STUDY LIMITATIONS, STRENGTH OF THE STUDY, CONCLUSION AND RECOMMENDATIONS

6.1 Study Limitations and Mitigation

1. Limited generalizability: The study was conducted in a specific district (Ilala) and among outpatient care attendees, which may limit the generalizability of the findings to other regions or populations, particularly those outside the healthcare setting.

2. Cultural and Social Influences; Cultural differences in the expression of depressive symptoms and societal stigma surrounding mental health may have affected how participants reported their symptoms, potentially underestimating the true prevalence of depression in the study population.

3. Limited Exploration of Protective Factors. The study focuses more on identifying associated factors rather than protective factors (e.g., social support, resilience) that could reduce the likelihood of depression. This could result in an incomplete picture of the factors influencing mental health in the PHC setting

6.2 Strength of the Study

1. Systematic random selection of participants used during data collection ensured equal participation opportunities for all participants, thereby reducing selection bias
2. Validated PHQ-9 used to assess depressive symptoms

6.3 Conclusion

The study found the prevalence of depressive symptoms to be higher at 28% among adults receiving outpatient care in the Ilala district, Dar es Salaam.

The likelihood of having depressive symptoms is associated with female gender, a family history of mental illness, alcohol consumption, and chronic illness. Residing in urban reduces like hood of having depressive symptoms.

These findings underscore the importance of the provision of regular health care along with mental health services.

6.4 Recommendations

1. Enhance Accessibility to Mental Health Services within PHC settings by integrating mental health care into general health services. This can include creating dedicated mental health clinics within primary health care facilities and ensuring that mental health services are available.
2. Targeted Interventions for identified Risk Factors: Develop and implement targeted interventions addressing specific risk factors associated with depression-like those with chronic disease/conditions, family history of mental illness, and female gender, including tailored counselling services, support groups, and educational programs aimed to meet the specific needs and improve mental health and wellbeing
3. Research and Data Collection on Depression: Encourage further research on depression in diverse populations, focusing on the intersection of biological, psychological, and social factors, ensuring that findings inform policy and practice in PHC.

6.5 Dissemination of Finding

This research study is a partial fulfilment of a Master of Medicine in Psychiatry and Mental Health. On successful completion and acceptance, it will be disseminated to the MUHAS library as per the primary prerequisite of the University. However, results will also be disseminated to the Research Department – Dar es Salaam Region and Ilala District, staff members of the Department of Psychiatry and Mental Health, and the Medical In charge of Pugu and Chanika Health Centers. Publications in appropriate journals will eventually be done after the successful completion of MMED studies.

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APPENDICES

Appendix 1: Consent form

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR OF RESEARCH AND PUBLICATIONS

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

My name is Arafa Bakari I am a pursuing master's degree in psychiatry at Muhimbili University of Health and Allied Sciences. I am doing a study on depressive symptoms and factors associated among patients attending primary health care facilities at Ilala District in Dar es Salaam as part of my degree award fulfillment

I would like to ask you to participate in this study. First I will explain to you about the study and I will be ready to answer any question that you have. This study aims to determine the prevalence and factors associated with depressive symptoms among patients attending outpatient departments at PHC.

This study will be conducted by me under my supervisor.

This is academic research and you are required to understand the following which apply to all in the research; your participation is completely voluntary and you may withdraw consent at any time in the course of the interview. Refusal to participate will not in any way affect the health services/benefits to which you are entitled. After reading the explanation, don't hesitate to ask

any questions in case you need clarifications, I will assess you using an instrument which will take about 30 minutes

No invasive procedures such as drawing blood will be involved. All information obtained from this study will remain confidential. Code numbers instead of your name will be used.

Risks and Benefits

This study will have emotional distress to the participants.

If you would like to talk with counselors or mental health personnel after this interview it can be arranged for you.

There will be no direct benefits to you. However, the overall study will be of benefit for providing information that can be used to develop interventions and comprehensive care for patients with depressive symptoms to give out better outcomes for patients

If you have any questions related to this study or your health you can contact the principle principal researcher Arafa Bakari 0752 897979, or my supervisor Dr. Esther Steven at the Department of Psychiatry and mental health, Muhimbili University of Health and allied sciences. Or Mr. Isaac Lema clinical psychology at the Department of Psychiatry and mental health, Muhimbili University of Health you can also contact the chairperson of the Research Senate and Publication Committee, Dr. Nahya Salim Masoud 0713 250 074

P.O. Box 65001 Dar es Salaam

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

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

SIGNED----------DATE ----------

WITNESSED----------SIGNATURE----------DATE…….

Appendix II: Fomu ya ridhaa

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI -MUHIMBILI

FOMU YA RIDHAA KUSHIRIKI KWENYE UTAFITI KUHUSU: DALILI ZA SONONA NA SABABU ZINAZOHUSIANA NA DALILI ZA SONONA KWA WAGONJWA WA NJE KATIKA VITUO VYA AFYA ZA MSINGI

Jina langu ni Dr. Arafa Bakari

Ninatokea chuo kikuu cha Tiba na Afya Muhimbili katika Idara ya Afya na Magonjwa ya Akili ninafanya, utafiti kuhusu kiwango na sababu zinazohusiana na dalili za sonona na sababu zinazohusiana na dalili za sonona kwa wagonjwa wa nje katika vituo vya afya za msingi

Ikiwa huu ni utafiti wa sayansi ya tiba unapaswa ufahamu yafuatayo kabla ya kushiriki;

Dhumuni la Utafiti huu: Kama nilivyo sema hapo awali dhumuni nikufanya utafiti kuhusu kiwango na sababu zinazohusiana na dalili za sonona kwa wagonjwa wa nje katika vituo vya afya za msingi vilivyopo katika wilaya ya Ilala Jiji la Dar es salaam

Namna ya Kushiriki: Ushiriki wako kwenye utafiti huu ni wa hiyari kabisa na unaweza kukataa kushiriki au kusitisha mahojiano wakati wowote. Kukataa kushiriki hakutaingilia huduma zako za tiba wala faida unazotakiwa kuzipata.

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

Madhara: Ikiwa wakati unajieleza ukipata kikwazo na kuona unahitaji mshauri nasaha 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.

Mwisho wa ufafiti taarifa hizi zitafungiwa na baadaye kuharibiwa baada ya kuwekwa na kutunzwa kwenye mfumo wa elektroniki

Kumbuka: Hakutakuwa na faida ya moja kwa moja kwako kutokana na utafiti huu ila matokeo ya utafiti yatasaidia katika mpango wa tiba kwa wagonjwa wa hisia mseto walio na upugufu wa ufahamu juu ya magonjwa ya hisia mseto.

Nani wa kumuuliza: Kama una maswali zaidi ambayo ungependa kuuliza kuhusiana na utafiti huu, tafadhali wasiliana na

Mtafiti Mkuu
Arafa Bakari 0752 897979
Idara ya magonjwa ya akili
Chuo Kikuu cha afya Muhimbili

Dr. Nahya Salim Masoud 0713 250 074
Mwenyekiti wa kamati ya utafiti na machapisho ya chuo
S.L.P. 65001 Dar es salaam, Tanzania

Nimesoma au nimeambiwa kuhusu yaliyomo humu ndani. Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.
Sahihi……

Mshiriki amekubali……

Appendix III: Questionnaire – English Version

I. Demographic characteristics of participant

Fill or circle the correct answer appropriately.

Questionnaire serial No: .....

1. Age of the participant in a year's ……..
2. Sex of the participant
    a. Male
    b. Female
3. What are Currently permanent residence area
    a. Urban
    b. Rural
4. What is your currently marital status
    a. Single
    b. Married/cohabiting
    c. Divorce/separated/ widow
5. What is your highest level of education attained?
    a. Primary
    b. Secondary
    c. College/higher education
6. Whom do you live with?
    a. Alone
    b. Family/partner/friends
7. What is your currently employment status
    a. Employed
    b. Unemployed

8. Is there anyone in your family who has mental illness?
    a. Yes
    b. No
9. Do you have any chronic illness like HTN, DM, HIV, CANCER etc.?
    a. Yes
    b. No
10. Do you drink alcohol?
    a. Yes
    b. No

4.3.1 Patient Health Questionnaire-9 (PHQ-9)

	Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all Several	Several days	More than half the days	Nearly every day
1.	Little interest or pleasure in doing things	0	1	2	3
2.	Feeling down, depressed, or hopeless	0	1	2	3
3.	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4.	Feeling tired or having little energy	0	1	2	3
5.	Poor appetite or overeating	0	1	2	3
6.	Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7.	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8.	Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9.	Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

For office coding: Total Score _____ = _____ + _____ + _____

Total Score _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

☐ Not difficult at all ☐ somewhat difficult ☐ Very difficult ☐ extremely difficult

Appendix IV- Dodoso kwa Kiswahili

I. **TAARIFA BINAFSI ZA MSHIRIKI**

Namba ya dodoso ……..

Jaza au zungushia jibu sahihi

1. Umri wa mshiriki …….
2. Jinsia ya mshiriki
    a. Kiume
    b. Kike
3. Eneo lako la makazi ya kudumu kwa sasa ni wapi?
    a. Mjini
4. Hali yako ya ndoa kwa sasa ni ipi?
    a. Sijaoa/Sijaolewa
    b. Nimeoa/Nimeolewa/Naishi pamoja
    c. Nimeachika/Ametengana/Mjane"
5. Kiwango gani cha juu zaidi cha elimu ulichopata?
    a. Shule ya msingi
    b. Shule ya sekondari
    c. Chuo/Elimu ya juu
6. Unaishi na nani?
    a. Peke yangu
    b. Familia/Mwenza/Marafiki
7. Hali yako ya ajira kwa sasa ni ipi?
    a. Nina ajira
    b. Sina ajira
8. Je, kuna mtu yeyote katika familia yako ambaye ana ugonjwa wa akili?
    a. Ndiyo
    b. Hapana

9. Je, una ugonjwa wowote sugu kama vile shinikizo la damu, kisukari, VVU, saratani n.k.?
    a. Ndiyo
    b. Hapana
10. Je, unakunywa pombe?
    a. Ndiyo
    b. Hapana

UDADISI KUHUSU DALILI ZA SONONA (PHQ-9)

Katika kipindi cha wiki mbili zilizopita, ni mara ngapi umesumbuliwa na matatizo yafuatayo? Tumia "√" ili kuashiria jibu lako	Hakuna kabisa	Siku kadhaa	Zaidi ya nusu ya siku zote	Karibu kila siku
1. Kutokuwa na hamu au raha ya kufanya mambo	0	1	2	3
2. Kuvunjika moyo, kuhuzunika au kukata tamaa	0	1	2	3
3. Matatizo ya kutopata usingizi au kulala mfululizo au kulala sana	0	1	2	3
4. Kujiskia kuchoka choka au kutokuwa na nguvu	0	1	2	3
5. Kutokuwa na hamu ya kula au kula sana	0	1	2	3
6. Kujisikia vibaya nafsi yako, kujiona umeshindwa kutimiza malengo yako ya maisha au kuhisi umejidunisha wewe au familia yako	0	1	2	3
7. Matatizo ya kumakinika katika mambo fulani kwa mfano unaposema gazeti au kuangalia runinga	0	1	2	3
8.Kuenda au kuongea taratibu sana mpaka watu wakawa wameona tofauti au kinyume chake kwamba hutulizani na unahangaika sana kuliko kawaida	0	1	2	3
9.Kuwaza kuwa ni afadhali zaidi ufe au ujidhuru kwa namna fulani	0	1	2	3

FOR OFFICE CODING

Total _____ Score

Haijatokezea Siku Zaidi ya Takriban kabisa kadhaa nusu ya kila siku

Ikiwa umetia alama kwa matatizo yoyote, ni kwa kiwango kipi matatizo haya yamekupa ugumu kufanya kazi yako, kushughulikia vitu nyumbani, au kutangamana na watu wengine

☐ Sio ugumu ☐ Hata kidogo ☐ Ngumu kiasi ☐ Ngumu sana ☐ Ngumu Zaidi

Appendix V- 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/1831 Date: 28/07/2023

MUHAS-REC-07-2023-1831
ARAFA ALLY BAKARI
SCHOOL OF MEDICINE
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG ADULTS RECEIVING OUTPATIENT CARE AT PRIMARY HEALTH CARE FACILITIES IN ILALA DISTRICT -DAR ES SALAAM.

Reference is made to the above heading.

I am pleased to inform you that the Chairperson 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: 28/07/2023
EXPIRATION DATE OF APPROVAL: 28/07/2024

STUDY DESCRIPTION:

Purpose:

The purpose of this observational cross-sectional study is to determine the prevalence of and factors associated with depressive symptoms among adults receiving outpatient care at primary health care in Ilala District- Dar es Salaam

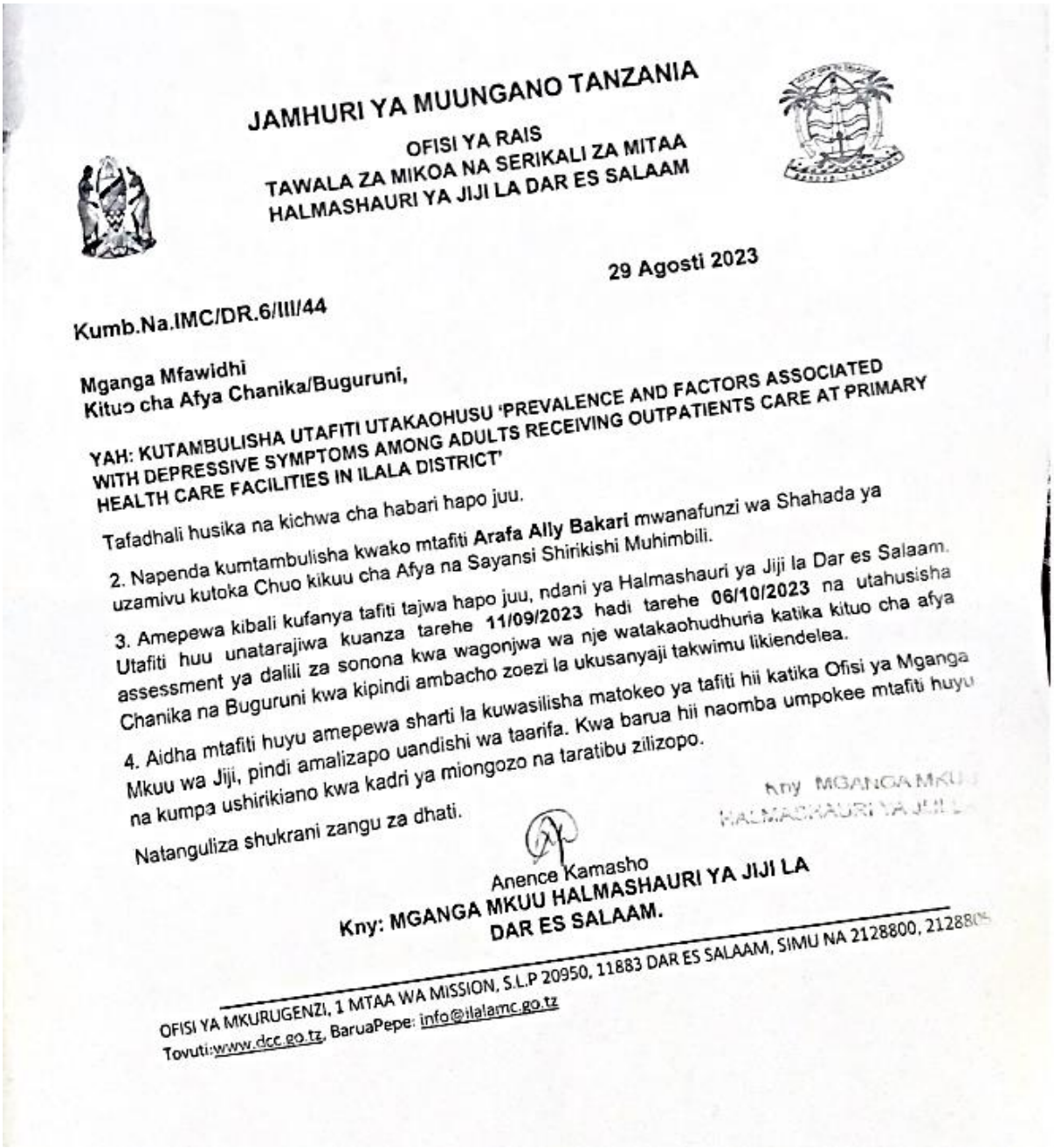
The PI is required to:

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. 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)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. 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

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research, Publications & Innovations
Box 65001

Appendix VI- Permission Letter



JAMHURI YA MUUNGANO TANZANIA

OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA
HALMASHAURI YA JIJI LA DAR ES SALAAM

29 Agosti 2023

Kumb.Na.IMC/DR.6/III/44

Mganga Mfawidhi
Kituo cha Afya Chanika/Buguruni,

YAH: KUTAMBULISHA UTAFITI UTAKAOHUSU 'PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG ADULTS RECEIVING OUTPATIENTS CARE AT PRIMARY HEALTH CARE FACILITIES IN ILALA DISTRICT'

Tafadhali husika na kichwa cha habari hapo juu.

2. Napenda kumtambulisha kwako mtafiti **Arafa Ally Bakari** mwanafunzi wa Shahada ya uzamivu kutoka Chuo kikuu cha Afya na Sayansi Shirikishi Muhimbili.

3. Amepewa kibali kufanya tafiti tajwa hapo juu, ndani ya Halmashauri ya Jiji la Dar es Salaam. Utafiti huu unatarajiwa kuanza tarehe **11/09/2023** hadi tarehe **06/10/2023** na utahusisha assessment ya dalili za sonona kwa wagonjwa wa nje watakaohudhuria katika kituo cha afya Chanika na Buguruni kwa kipindi ambacho zoezi la ukusanyaji takwimu likiendelea.

4. Aidha mtafiti huyu amepewa sharti la kuwasilisha matokeo ya tafiti hii katika Ofisi ya Mganga Mkuu wa Jiji, pindi amalizapo uandishi wa taarifa. Kwa barua hii naomba umpokee mtafiti huyu na kumpa ushirikiano kwa kadri ya miongozo na taratibu zilizopo.

Natanguliza shukrani zangu za dhati.

Kny MGANGA MKU
HALMASHAURI YA JIJI L

Anence Kamasho
Kny: MGANGA MKUU HALMASHAURI YA JIJI LA DAR ES SALAAM.

OFISI YA MKURUGENZI, 1 MTAA WA MISSION, S.L.P 20950, 11883 DAR ES SALAAM, SIMU NA 2128800, 2128[illegible]
Tovuti:www.dcc.go.tz, BaruaPepe: info@ilalamc.go.tz