PREVALENCE OF UNDETECTED DEPRESSION AND ASSOSCIATED FACTORS AMONG PATIENTS ATTENDING PHYSIOTHERAPY AT KENYATTA NATIONAL HOSPITAL

By

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H58/75578/2014

MMed. Psychiatry

A proposal Submitted in Partial Fulfillment of the Requirements for the Award of Masters in Medicine Degree in Psychiatry in the School of Medicine,

University of Nairobi

June 2020

DECLARATION OF ORIGINALITY FORM

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SUPERVISORS' APPROVAL

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ACKNOWLEDGEMENT

I would like to thank my supervisors for their guidance and assistance in completing my proposal. I would also like to thank my colleagues for their support in my studies.

DEDICATION

I would like to dedicate this proposal to my family especially my Late Mother, Margaret Mwihaki Ng'ang'a. I would never have done this without her guidance, support, encouragement, mentorship and dedication.

I also want to dedicate this proposal to my wife and children for supporting and encouraging me through the trying times and their patience for the days that I was unavailable.

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ABBREVIATIONS

BDI - Becks Depression Inventory

COVID 19 - Coronavirus Disease of 2019

DALYS - Disability Life Adjusted Years

DSM 5 - Diagnostic and Statistical Manual of Mental Disorders 5

ICD 10 - International Statistical Classification of Diseases and Related Health Problems

KNH - Kenyatta National Hospital

SES - Socio-economic status

WHO - World Health Organization

ABSTRACT

Background: Globally depression is the leading cause of disability, with Kenya is ranking fifth with the highest number of depression cases among African countries. Despite literature showing a strong connection between physical well-being and mental health, the screening for depression or other mental health disorders is currently inconsistent and this greatly reduces their chance of accessing suitable treatment.

*Study Objective***:** This study aims to assess the prevalence of depression among patients attending the Physiotherapy clinic at Kenyatta National Hospital.

*Methodology***:** This study will make use of a descriptive cross-sectional design. Population of interest are patients receiving physiotherapy at Kenyatta National Hospital. Systematic random sampling will be used to get 300 respondents. A researcher designed socio-demographic questionnaire and the Becks Depression inventory (BDI II) will be used to collect the data

*Data Analysis***:** Data will be analyzed using SPSS version 25. Association between variables will be determined using Pearson's Chi square. Pearson's correlation (*r*) will be used to determine the direction of the relationships between continuous variables. Correlations between categorical variables will be determined using Cramer's Phi coefficient and Phi coefficient for binominal variables. Results will be presented in tables, pie charts and narrative.

*Study Significance***:** This study will be beneficial in that it will provide some much-needed local data on commonality of depression which will assist in coming up with guidelines on how to manage patients attending physiotherapy with co-morbid depression, as it has been noted that it also affects compliance to treatment. This may be of major importance in forecasting outcomes, adapting treatment strategies and maximizing patient benefit. Early detection and appropriate management are encouraged in current intervention guidelines on the premise that it's to improved outcomes, minimizing financial cost to the individual and society (Ali, Zangana, & Tahir, 2009).

The data from the study will also help the patients and the clinicians to better understand the association between physiotherapy and depression which can help in betterment of their management

CHAPTER ONE
INTRODUCTION

1.0   Background Information

The World Health Organization estimates on the number of people suffering from depression globally is 264 million (WHO, 2020). This number was reported from a systematic analysis of studies that have been done on global, regional and national incidence, prevalence and years lived with injuries from 195 countries and countries from the year 1990 to 2017 (WHO, 2020). It is defined as a mood disorder that can be long lasting with mild, moderate to severe intensity. Severe depression being quite debilitating if undetected or untreated upon diagnosis. Severe depression has also been associated with development of suicidal ideations, intent, para suicide and complete suicide especially amongst men (Freeman, et al., 2017).

Some studies have reported that one third of medical in-patients' report mild to moderate symptoms of depression as a comorbidity to their physiological or physical ailments (Gautman, Jain, Gautman, Vahia, & Grover, 2017). When depression co-exists with other medical or psychiatric symptoms, depressive symptoms have been found to be more treatment resistant compared to patients without other underlying disorders. It is therefore clear that depression is positively correlated with poor prognosis and hence poor treatment outcomes.

According to the WHO (2020), despite effective treatment being made available for patients with depression, one of the major draw backs in management of depression, has been inaccurate assessment and hence fewer overall diagnosed cases. This is more profound in cases where depression could be a comorbidity. This has been noted mostly among low and middle income

countries where poor resources, lack of adequately trained health care providers and social stigma is a major concern (Wang, 2007).

This study focuses or looks into depressive disorders among patients who seek physiotherapy services. Physiotherapy refers to the process where an individual is helped to restore movement and function when affected by illness, injury or disability. It can also help to reduce your risk of injury or illness in the future (APTA, 2008). There are many musculoskeletal injuries, that physiotherapy or physical therapy plays an integral part in management. The aim of physical therapy is to rehabilitate or treat an individual after an operation or injury to allow you to return to your normal level of function in the quickest time possible as well as to prevent additional injury and loss of fitness

Physiotherapy has been employed in treatment of mental illnesses (Probst, 2017). This is primarily because it has been proven that physical activities do have positive outcomes for patients diagnosed with mental illness. Physiotherapy in mental health care addresses human movement, function, physical activity and exercise in individual and group therapeutic setting.

However, studies that have reported positive impact of physiotherapy on management of mental illness have included patients with definitive diagnosis of mental illness. The question this study seeks to answer is whether physiotherapists are able to diagnose or detect presence of mental illness particularly depression amongst patients that seek their services? There is a serious paucity of data or literature on the same both globally and more so locally in Kenya.

1.2 Problem Statement

According to WHO (2003) global statistics, major depression is the leading cause of disability. Kenya is ranked fifth with the highest number of depression cases in African by a WHO report (WHO, 2017). It is estimated 19.1 million people suffered from depression in 2016. Research has demonstrated that depression is a major cause of lost productivity and pain caused to individual and families and more so the cost to human life through suicidal attempts and actual suicide. Depression affects all people across the races, social economic status and cultural backgrounds.

Despite the strong connection between physical well-being and mental health, screening for depression or other mental health disorders is currently inconsistent and this greatly reduces their chance of accessing suitable treatment. The screening of depression, and consequently treatment is essential in primary health care and more so for patients are undergoing physiotherapy. The objective of this study is to investigate the prevalence of depression among patients attending the Physiotherapy clinic at Kenyatta National Hospital.

CHAPTER TWO

LITERATURE REVIEW

2.1 An Overview of Depression and Medical Issues

An individual's mental health is influenced by a multifaceted interplay of various factors: biological, social, psychological, economic and environmental. Persons affected by mental health disorders have been found to have higher levels of morbidity and mortality, with an increased prevalence of hypertension, cardiovascular disease, diabetes, respiratory disease and suicide (Gureje, Ademola, & Olley, 2008; De Hert, et al., 2011). Gureje, et al., (2008) also found a strong association between mental health conditions and reporting multiple pain sites by patients.

Vermeer, et al.(2016), using a retrospective chart review assessed stroke deficits and lifestyle factors as independent predictors for depressive symptoms in post-stroke patients attending outpatient clinics. In the final analysis, 202 patients were used. Thirty-six percent of patients were found to have mild to severe depressive symptoms. Depressive symptoms were significantly associated with smoking, cognitive impairment, pain and therapy enrollment. Findings also showed that patients reporting cognitive impairment to be 4 times more likely to have high scores on the PHQ-9. This study concluded high levels of depressive symptoms were most common in the chronic phase post-stroke and were partially related to pain, cognition, lifestyle factors and therapy enrollment.

Azad, Gondal, Abbas, & Shahid (2014), carried out a study that aimed to see the frequency of depression in 110 patients with chronic type-2 diabetes. Depression and anxiety was assessed by Hospital Anxiety and Depression Scale. Almost 50% of patients were found to have depression and anxiety in our study. Depression and anxiety were found to be more affected in women, housewives and having low education. The duration of diabetes, treatment and control of

diabetes were found to have little effect on anxiety and depression in this group of patients. These findings suggested for the regular screening of this group.

A study by Assefa, Duko, Ayano, & Mihretie (2016) aimed to find out the magnitude of depression as well as associated factors among patients with chronic kidney disease receiving follow-up treatment in the renal units in two hospitals in Ethiopia. A total of 479 patients were recruited, 29.4% were found to have depression. Being a woman, older (>60), living alone, poor social support and having other comorbid illness such as (hypertension, diabetics) were associated with depression. This study concluded the need for training of health workers and guidelines for those in the renal unit in order to screen and manage depression.

A world survey done by Moussavi, et al., (2007), aimed to explore the effects of depression on overall health status. 60 countries from all over the world participated with over 245404 observations made. The findings showed an overall, 3.2% 1-year prevalence for depressive episode. For participants with one or more chronic physical disease between 9.3-23%, had comorbid depression, which suggested that depression in chronic disease is more prevalent They concluded that depression promotes poorer health outcomes compared with other chronic illness.

Studies done in Kenya have shown that depression is one of the commonest mental disorders presenting in patients attending primary healthcare clinics (Ndetei, et al., 2009; Allison, et al., 2014). They have found that few referrals were made due to the perceived stigma felt by these patients when they were diagnosed with depression (Othieno,2001). Aside from perceived stigma by patients upon diagnosis of depression, the poor clinician detection rate of depressive symptoms in patients attending primary health care clinics in Kenya was of major concern. In a study carried out to investigate the prevalence of mental disorders in 2,770 adult patients receiving in-patient and outpatient services from 10 medical facilities of different levels in Kenya, about 1,163 (42%) of the participants had mild to severe symptoms of depression. Only 114 of the 2,770 participants had a hospital record with a working diagnosis of a mental illness meaning that majority of the patients with mental illnesses are undiagnosed (Ndetei, et al., 2009).

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2.2   Depression and Physiotherapy

Literature suggests that depressive disorders are more popular in patients with physical illness (Mac Hale, 2002). Some medical conditions have been found to be strongly related with presence of psychiatric illness than others. Gureje, et al.,(2008), found 25% prevalence of depressive illness in patients with diabetes, cardiac or neurological disease. Those in medical in- patient wards are also more likely to have depression than those visiting out-patient clinics (Gureje, et al.,2008).

A study by Ali, Zangana, & Tahir, (2009) aimed to detect the occurrence, severity and type of depressive disorder among patients receiving care at the physiotherapy clinic and other related factors. Fifty-six percent (56%) of those recruited were found to be depressed, with 27% identified with mild depression, 20.5% moderate and 8.5% severe depression. Factors associated with depression included being old age, of female gender and married. The study recommended the screening of depression in patients attending physiotherapy should be considered.

Negative consequences on outcomes and healthcare costs are influenced by poor adherence to treatment. In the area of physiotherapy, little is known about the barriers to treatment. A systematic review of 20 studies by Jack, McLean, Moffett, & Gardiner (2010), showed poor social support, low self-efficacy, low levels of physical activity, anxiety, depression, helplessness, low in-treatment adherence with exercise, increased pain levels during exercise as well as greater perceived number of barriers to exercise were strongly associated with poor treatment adherence.

Chronic musculoskeletal pain is a frequent and costly health problem which can be challenging to manage. A study carried out by Rahman, Reed, Underwood, Shipley, & Omar (2008), to identify factors influencing intensity of pain and self-efficacy of patients referred to a chronic pain clinic over 5years. Findings from this study suggested that the patients had high pain

intensity scores and low self-efficacy. Depressive symptoms and being unemployed were correlated with low self-efficacy, while pain intensity was correlated with depressive symptoms, extensive pain and low levels of education.

Sinyor et al (1986) assessed the impact of post-stroke depression on rehabilitation outcomes. Sixty-four patients presenting to a rehabilitation program within weeks of first stroke were recruited. A prevalence of depression of 47% was found in this population and evidenced greater functional impairment at both admission and discharge despite showing similar gains over the course of rehabilitation. Depressed patients were found to participate less in the rehabilitation process, indicating an association with a degree of functional impairment thus influencing the rehabilitation process and outcome.

A study to determine the effect of the psychiatric symptoms of anxiety and depression was carried out in Swansea by Khan, et al.,(2013), 108 women presenting with pelvic floor dysfunction and had been admitted to the 6-month physiotherapy program were recruited. Findings showed a strong positive relationship between the severity of the pelvic floor dysfunction and the severity of depression and anxiety symptoms.

Gureje, Oladeji, & Abiona (2011), carried out a study with the aim of assessing both the prevalence and effect of depressive symptoms in patients with musculoskeletal pain across different anatomical regions in a sample of 8,304. The prevalence of severe depression was found to be higher in women, as well as in patients who reported chronic pain or prior surgery, while lower rates were observed in patients older than 65 years or with upper- or lower-extremity pain. Severity of depression differed slightly based on the anatomical region experiencing musculoskeletal pain. Depressive symptoms were found to have effects on pain ratings and functional status. The symptoms also showed consistent negative effect on outcomes, except for those on discharge scores for the cervical anatomical region.

Findings from physiotherapy research suggest that depression is high among its patients and that they experience of depressive symptoms influences the effectiveness of the treatment. There are determinants have been identified to influence the susceptibility of one to depressive symptoms in this group; factors such as age, gender, severity of the disability/dysfunction, coping strategies and type of support the patient receives.

Focus groups and interviews explored participants' understanding of mental illness; their role in managing the physical health of people with Serious and persistent mental illness and the barriers and enablers to service delivery. Key themes were derived using an inductive approach. The survey was used to determine physiotherapists' attitudes and knowledge regarding mental illness; perceived role of physiotherapy in mental health; and need for professional development in the mental health area. Participant characteristics and survey information were analyzed using descriptive statistics.

2.3   Theoretical Framework

This study will be guided by Beck's Cognitive Theory of Depression (Beck, 2008) which relates depression to ongoing stressful life experiences. The cognitive theory recognizes that traumatic life experiences and their resultant construction of faulty or maladaptive cognitive beliefs as predisposing events to developing stress and depression later on in life.

Beck describes a cognitive triad that explains an individual's reaction to a stressor. The exposure to negative stimuli causes maladaptive thinking and emotional incongruence leading to a negative self-image of oneself. The triad explains how physical and emotional aspects of an individual are influenced by their maladaptive thinking patterns when they are experiencing stressful situations.

Beck's Cognitive Theory of Depression describes the role of stress as a key to activating previously dormant irrational cognitive schemas in an individual. Information processing in depressed people is based on silent cognitive assumptions of how other significant people in their

lives treat and/or view them. For those who are in physical therapy, the silent assumptions may be derived from the behavior of their significant others and their inability to perform as they were previously able to bring about feelings of inadequacy and self-blame.

Depression from the stress of the healing process develops over time with repetitive exposure to the physical therapy process, and the difficulties experienced through the exercise that may be aggravated when the victim's dormant pre-existing irrational cognitions are re-awakened, and the victim develops negative silent cognitive assumptions based on how they currently view themselves.

2.4   Research Questions

1. What is the prevalence of depression and associated factors among patients attending the physiotherapy clinic at Kenyatta National Hospital?
2. What are the socio-demographic profile of patients attending the Physiotherapy clinic at Kenyatta National Hospital?

2.5   Objectives
3   1   Broad Objective

The study's overall objective is to determine the prevalence of undetected depression among patients attending the Physiotherapy clinic at Kenyatta National Hospital.

3   2   Specific Objectives

1. To determine the prevalence of depression among patients attending the Physiotherapy clinic at Kenyatta National Hospital.
2. To determine the socio-demographic profile of patients attending the Physiotherapy clinic at Kenyatta National Hospital
3. To determine the association between depression and socio-demographic factors.
4. To determine the association between depression and the type of injury.

2.6   Justification of the Study

One of the main challenges of psychiatric co-morbidity with general medical conditions is adherence (compliance) to treatment to both the medical and the psychiatric condition. Research indicates the importance of addressing depression, citing it as a public-health priority in order to decrease disease burden and disability, and to enhance the overall health of populations. It is with this in mind that the diagnosis and treatment of depression in patients should be encouraged. Ndetei et al (2009), in a study to ascertain the incidence of mental disorders in adults in general medical facilities in Kenya, found a high prevalence of psychiatric co-morbidity (the bulk of which was depression) which to a large extent was not diagnosed and therefore not treated.

The outcomes of physiotherapy can be unpredictable and recognizing the predictors that promote success or failure is a key goal for management and service design. There is a dearth of information on the prevalence and treatment of mental health disorders among individuals dealing with physical ailments requiring physiotherapy, and there have been no studies conducted in this area in Kenya. This study will partially meet this deficit by aligning the prevalence of depression to the disabilities presented at the physiotherapy clinic.

2.7   Study Significance

This study will be beneficial in that it will provide some much-needed local data on commonality of depression which will assist in coming up with guidelines on how to manage patients attending physiotherapy with co-morbid depression, as it has been noted that it also affects compliance to treatment. This may be of major importance in forecasting outcomes, adapting treatment strategies and maximizing patient benefit. Early detection and appropriate management are encouraged in current intervention guidelines on the premise that it's to improved outcomes, minimizing financial cost to the individual and society (Ali, Zangana, & Tahir, 2009).

The data from the study will also help the patients and the clinicians to better understand the association between physiotherapy and depression which can help in betterment of their management

2.8   Conceptual Framework

Types of injuries/ physical complaints hence attending the physiotherapy is the *independent variable* in this study while the presence of depression is the *dependent variable*. Mediators shown in the framework may lead to increase one's susceptibility to developing depression. Factors such as Age, gender, one's socioeconomic status (SES), the severity/ degree of the disability/dysfunction, number of sessions one has to attend, coping strategies and social support are the *intervening variables* we feel may influence the development of depression in patients receiving physiotherapy.

Intervening variables

Age, Gender, SES, No. of physiotherapy sessions, coping strategies, social support

Independent variable

Physical Injury Requiring physiotherapy

Dependent Variable

Depression
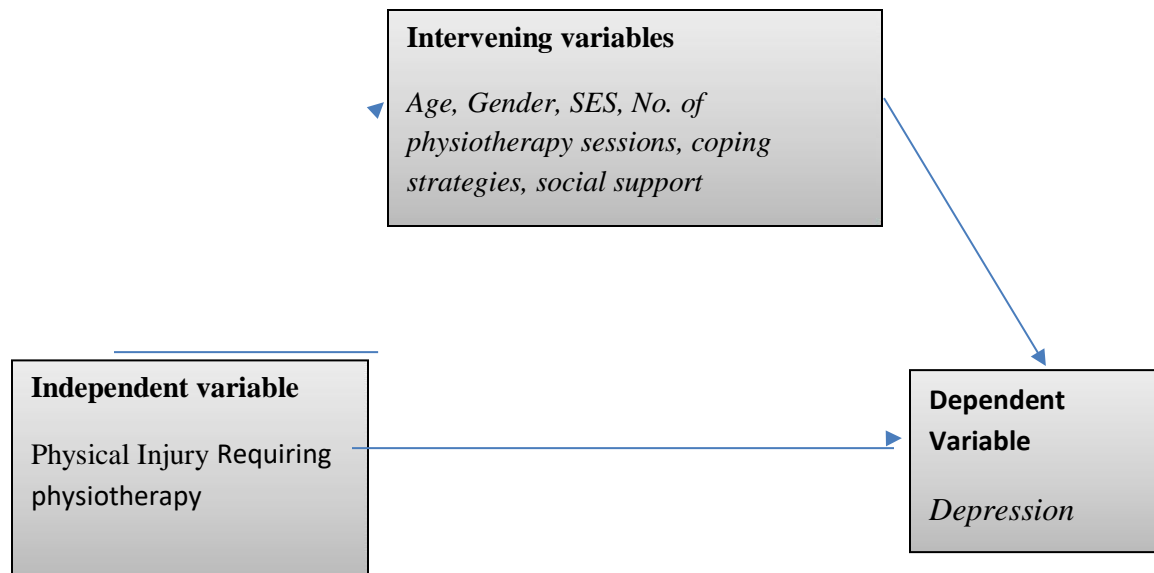
Figure 1: Conceptual framework

CHAPTER THREE

METHODOLOGY

3.1   Study Design

This study design will be cross-sectional. This will allow for collection of descriptive variables at one point and time.

3.2   Study Site Description

The study will be done at Kenyatta National Hospital (KNH) in Nairobi, Kenya. It is the largest and oldest referral hospital in East and Central Africa. KNH takes in referral cases mostly from private clinics and government hospitals within the country. This level 6 government hospital offers a plethora of services including Physiotherapy services for both in-patient and out- patients. The specific study site for this study is the physiotherapy clinic which receives approximately 2000 or more new patients annually, mostly (approximately 80%) with back pain. Patients recovering from stroke or reporting joint stiffness and burns etc. are less common and make up 20% of the cases seen at the department. The department has 13 physiotherapists including 2 administrators. No counselor is stationed at the department however, any persons presenting with psychological issues are normally referred to the patient support for counseling within the hospital. The clinic runs from 8 am to 4 pm, Monday to Friday.

3.3   Study Population

The study's population will be adult patients attending physiotherapy at the KNH either as outpatient or inpatients.

3.4 Inclusion Criteria

i. Patients aged 18 years and above

ii. Those who have given consent/assent to participate in the study.

iii. Patients who have attended at least 2 or more physiotherapy sessions.

3.5 Exclusion Criteria

i. Patients with severe debilitating illness as shown in the files. These patients may have pain and other symptoms that may be too stressful such that they cannot concentrate in the study.

ii. Patients currently on treatment for depression as the symptoms may be controlled or resolved.

3.6 Sample Size Determination

This study will use Cochran's (1977) sampling formula;

$$n = \frac{z^2 \, p \, (1\text{-}p)}{d^2}$$

Where: n –Estimated sample size

d –The level of precision

p - Proportion of those with the condition of interest

z –Confidence level

Using a confidence interval of 95%, expected prevalence of 50% (in a situation like this where the prevalence is not known) and a level of significance of 5% (0.05),

$$n = \frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05 \times 0.05}$$

n = 384

3.7 <mark>Sampling Method</mark>

Systematic sampling technique will be used to recruit the number of respondents needed for the study. The interval number will be determined by the following calculation

K= Total Number of patients seeking physiotherapy services registered yearly (N) / No of study participants/ patients needed (n)

Therefore: K= 1380/ 384 = 3.6 (4).

Therefore, every fourth participant will be approached and requested to participate in the study until the recommended sample size is met.

3.8 .8 Recruitment and Consenting Procedures

First, the researcher will ensure that the department follows COVID 19 prevention methods before undertaking the study. He will ensure that all the patients at the department are subjected to the temperature checks, hand washing, sanitization with alcohol based sanitizers and ensuring that everyone sits 1.5 meters apart. This will be important as it ensures that everyone is safe including himself.

The researcher, will ensure that he safeguards himself and the patient by; wearing a protective face mask, disinfecting prior to each and every participant; He will also ensure that a social distance of 1.5M is kept whilst ensuring that there is no physical contact.

The researcher will then request to be allocated a room that he can use to conduct his data collection. This will ensure that participants' confidentiality and privacy is maintained throughout the data collection process. The seating in that room will be 1.5 meters apart.

As indicated in the systematic sampling, the researcher will get there in the morning and have a look at the patient register for the day. He will then take the first patient then thereafter every 4th patient will be approached by the researcher in physiotherapy clinic waiting room. This will be done during normal clinic hours which begin at 8 to 4pm Monday to Friday.

Once a participant agrees to partake in the study, the researcher will ensure the participant meets

the inclusion criteria.

The researcher will also observe for any intense pain that could impede participation by the patient. in cases where the patient exhibits severe pain, they will be excluded from the study as this could interfere with concentration and participation could cause undue distress.

Once the study objectives have been explained to the study participants, they will be given the informed consent forms to sign. This will be evidence of their voluntary participation.

3.9 Study Variables

Independent variables

The exposure variable is the injuries/ complaints that patients suffer from hence the need for physiotherapy

Dependent variable

The outcome variable is depression.

3.10 Data Collection Instruments

Researcher designed questionnaire - The respondents will complete their information in a researcher designed questionnaire. The social demographic questionnaire will gather participant information such as age, religion, marital status, social economic status. The clinical information questions will include injury, time since injury, age of the respondent at time of accident,

Beck's Depression Inventory (BDI-II) - The BDI-II is a 21 item self-report instrument for measuring the presence and severity of depression in adults. The respondent will be required to select one of four options ranging from 0-3, with increasing scores reflecting higher severity of a given symptom of depression. The BDI-II is a paper and pencil test. It can be self-21 administered or examiner administered. Due to its brevity, ease of administration, scoring, congruence with the DSM-IV and its strong psychometric characteristics, the BDI-II is deemed to be the most appropriate test for depression. The cutoffs are represented as follows: 0–10: minimal depression; 11-16 mild depression; 17–30 moderate depression, 31–40 severe depression and >40 extreme depressions.

3.11   Data Collection Procedures

Once informed consent has been given, the participant will be shown to a secluded room where there is no disturbance and where seats are placed a meter apart to prevent Corona virus transmission. All the tools will be self-administered, so as to reduce researcher bias. The questionnaire filling will take approximately 15minutes. Once the participant is done filling the questionnaire they will be collected by the researcher, checked to ascertain completion and stored.

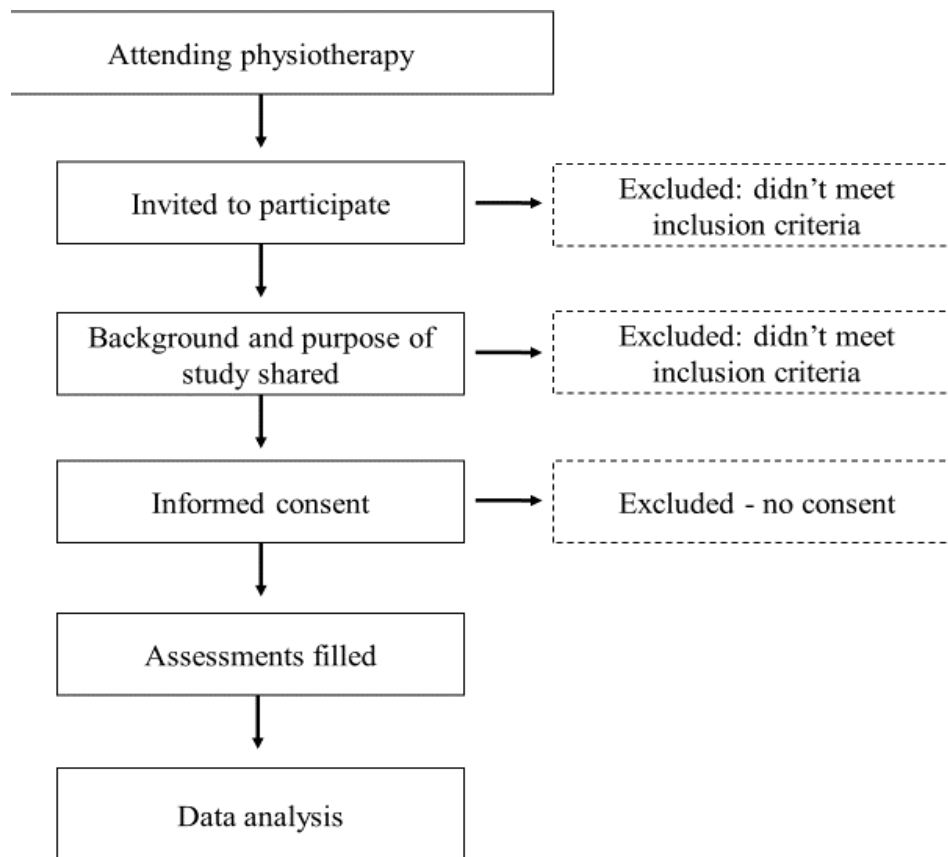## 3.12   Data collection Flow Chart

Figure 2: Participant recruitment, consenting and data collection flow chart

3.13   Quality Assurance Procedures

3.13.1 Pre-survey

A pre-survey was carried out by the researcher at the development stage of the proposal. This was important to determine the suitability of the clinic as a study site to conduct the research.

3.13.2 Pre-Testing

A pre-test will be done prior to data collection. This will entail issuing the questionnaire to 10 participants conveniently selected at the physiotherapy clinic and assessing their responses and views of the socio-demographic questionnaire which is researcher designed. Suggestions made and misunderstandings pointed out by the 10 participants will be addressed to create a comprehensive socio-demographic questionnaire.

3.14   Ethical Consideration

This study will be presented at the Department of Psychiatry before proceeding to the University of Nairobi/ Kenyatta National Hospital ethics research committee for approval to carry out the study. Once approval to carry out the study is granted by the ethical committee, written authority and clearance from the in charge at the physiotherapy clinic will be obtained.

Informed Consent

Before data collection is done, participants will be handed to the Informed Consent form and explained to the nature and requirement for the study to be conducted. They shall be given the Informed consent forms to read through in order to make an informed decision on whether to participate in the study. The researcher will give them as much time as they want to go through the forms and be at hand to answer and questions that may arise. The participant will then sign the informed consent forms. They will be informed that participation is voluntary, and the information collected is for the study alone. Those who refuse to participate or withdraw at any stage will not to be penalized and their withdrawal will in no way influence the services they seek at the institution.

Confidentiality and Anonymity

Participants will be assured that the data will be kept confidential and will only be used for research purposes. The researcher will maintain the anonymity of the participants. There will be no personal identifiers on the questionnaires and this will ensure that no participant can be traced. Secure serial

code will be used for questionnaires to identify participants as an alternative to names and they will be kept in secure password protected locked safe.

Compensation for participants

Participants will not receive any compensation for participating in the study as they will be involved during normal clinic visits hence will not incur any extra expenses on their part.

Potential study risks

There is no physical harm expected from this study. However, if the researcher notices any psychological distress in a participant, he will review and refer severe distress for further follow-up at the Mental Health department at the KNH.

Potential benefits to study participants

It is assumed that depression will be a secondary condition among the patients coming for physiotherapy in KNH. Therefore, the participants with depression will be referred for treatment and hence proper/ holistic management will be done. This will possibly result in better prognosis of their primary conditions.

3.15 Data Management

All research materials including informed consent and assent forms, questionnaires and results will be kept in a locked safe. Soft copies in the computer devices will be password protected. The room will be locked, and the researcher will be the only one to access the room.

3.16 Data Analysis

Data will be cleaned by reviewing the questionnaires at the end of the data collection on a daily basis. Data entry and analysis will be done using SPSS version 25. Measurement of central tendencies will be used to analyse continuous descriptive data like age. Frequency tables, bar graphs and pie charts will be used to present other socio-demographic factors and prevalence rates of depression among the respondents. Association between the variables will be presented using

Chi-square tests, correlation between variables will be determined by Pearson's correlation or Cramer's Phi coefficients for categorical variables.

Results will be presented in tables, pie charts and narratives (See dummy tables below)

Table 1: Prevalence of depression

	N (%)	*Mean (SD)*
Minimal depression		
Mild depression		
Moderate depression		
Severe depression		
Extreme depression		

Table 2: Association of demographic factors and depression

Demographic factors	*Presence of Depression (Yes/ No)*	*N (%)*	*T-tests*
Age			
Gender			
Type of disability			
Severity			
No of sessions			
Social support			

3.17   Study Limitations

The following study limitations are anticipated:
1. The study will rely on self-reported information from participants and there may be no way to ascertain the accuracy of the information. Scores may be minimized or exaggerated on the self-report questionnaires.
2. The findings of this study cannot be generalized to other smaller hospitals as KNH is a major referral hospital.

3.18   Dissemination of Study Findings

The results of the study will be presented to the Department of Psychiatry and the Department of Mental Health and Physiotherapy at KNH through a formal meeting where a copy of the same will be provided. To help improve the type of care of patients attending the physiotherapy are given to help improve their healing process. The results will also be disseminated in workshops and conferences as well as in academic peer-reviewed journals.

Turnitin Originality Report

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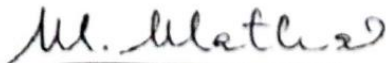Danielle Brittany Rice, Amanda McIntyre, Julianne Vermeer, Ricardo Viana, Steven Macaluso, Robert William Teasell. "Correlates of Depressive Symptoms in Stroke Outpatients", Archives of Physical Medicine and Rehabilitation, 2015

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http://www.dcf.state.fl.us

Prof. Anne Obondo, Chairman, Dept. of Psychiatry   29/10/2021

1st Supervisor   29/10/2021

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APPENDICES

Appendix 1: Participant Information Sheet And Consent Form – English Version

Topic: Prevalence of Undetected Depressive Disorders Among Patients Attending Physiotherapy at KNH

Principle Investigator: Dr. Gerald Ng'ang'a, University of Nairobi

Co-investigators: Prof. Muthoni Mathai and Dr. John Mburu, University of Nairobi

My name is Dr. Gerald Ng'ang'a, a Masters in Psychiatry student at the University of Nairobi. I am doing a study entitled *Prevalence of undetected depressive disorders among patients attending physiotherapy at KNH* as part of my master's degree program. My supervisors are Prof. Muthoni Mathai and Dr. John Mburu from the Department of Psychiatry, Faculty of Medicine, College of Health Sciences, University of Nairobi.

The purpose of the study is to assess the level of depression otherwise known as low mood distress among patients attending physiotherapy at KNH. This document explains further on what your role could be in this study and gives you the opportunity to agree (consent) or disagree to participate in the study. In either case, you shall still be attended to in the clinic as usual.

Once you consent to participate in the study, you will be given a questionnaire that will ask you questions regarding your feelings and accompanying mood over a period of 6 weeks. Answering the questionnaire may take you 30 – 45 minutes and will involve only paper and pencil tests

Benefits of this study: There is no direct benefit for participation in this study. However, the results of the study will help in gathering information that will enable better screening and management of people with depression in Kenya following physical disability/injury. You will not incur any costs by participating in the study.

Risk of the study: The risk is that due to individual varying appraisal of similar circumstances, you may find certain questions distressing. If you are found in need of further medical intervention, you will be referred to the appropriate clinic in KNH.

Voluntarism: Your agreement to enroll in the study is voluntary and you may withdrawal from the study at any time. There is no penalty or loss of benefit in which you are otherwise entitled due to refusal to participate in the study.

Confidentiality: All the information obtained from this study will be regarded with outmost confidentiality and privacy. Your name will not be recorded anywhere in the study or in the resulting publications.

After you read the explanation please feel free to ask any questions that will allow you to understand clearly the nature of the study. Thank you for participating in this research study.

CONTACTS:

Researcher: Dr. Gerald Ng'ang'a Telephone No. 0722973210

Supervisors: Prof. Muthoni Mathai Telephone No: 0727 329904

Dr. John Mburu Telephone No: 0733918774

You can also get in touch with the secretary/chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee on telephone no. 2726300 Ext 44102 or email uonknh_erc@uonbi.ac.ke.

CONSENT STATEMENT

Participant Statement

I the undersigned do hereby volunteer to participate in this research study. The nature and purpose have been fully explained to me by Dr. Gerald Ng'ang'a and he has answered questions I had.

I understand that all the information given / obtained will be treated with outmost confidentiality and used for this study only.

Participant Signature/Thumb stamp_____ Date _____

Researchers Statement

I have fully explained the study purpose and participant roles to the respondents as well as clarified any concerns they had.
I believe the participant has understood the study and what it entails and is willing to freely participate in the study

Researchers Signature/Thumb stamp_____Date _____

MAELEZO YA IDHINI

Kuenea kwa shida ya Unyogovu isiyoweza kutengwa kati ya Wagonjwa Kuhudhuria Tiba ya Viungo huko KNH

Mpelelezi wa kanuni: Dkt. Gerald Ng'ang'a, Chuo Kikuu cha Nairobi

Wachunguzi wa ushirikiano: Prof. Muthoni Mathai na Dkt. John Mburu, Chuo Kikuu cha Nairobi

Jina langu ni Dkt. Gerald Ng'ang'a, mwanafunzi wa Masters katika Psychiatry katika Chuo Kikuu cha Nairobi. Ninafanya utafiti uitwao Utangulizi wa shida za huzuni ambazo hazijaonekana kati ya wagonjwa wanaohudhuria mazoezi ya mwili kwa KNH kama sehemu ya mpango wa digrii ya bwana. Wasimamizi wangu ni Prof. Muthoni Mathai na Dkt. John Mburu kutoka Idara ya Saikolojia, Kitivo cha Tiba, Chuo cha Sayansi ya Afya, Chuo Kikuu cha Nairobi.

Madhumuni ya utafiti huo ni kutathmini kiwango cha unyogovu kingine kinachojulikana kama dhiki ya chini ya mhemko kati ya wagonjwa wanaohudhuria mazoezi ya mwili kwa KNH. Hati hii inaelezea zaidi juu ya nini jukumu lako katika utafiti huu na inakupa fursa ya kukubaliana (ridhaa) au kutokubali kushiriki katika utafiti. Kwa vyovyote vile, bado utahudhuriwa katika kliniki kama kawaida.

Mara tu ukikubali kushiriki kwenye utafiti, utapewa dodoso ambalo litakuuliza maswali kuhusu hisia zako na mhemko unaofuatia kwa muda wa wiki 6. Kujibu dodoso kunaweza kukuchukua dakika 30 - 45 na kutahusisha tu majaribio ya karatasi na penseli.

Faida za utafiti huu: Hakuna faida ya moja kwa moja kwa kushiriki katika utafiti huu. Walakini, matokeo ya utafiti huo yatasaidia katika kukusanya habari ambayo itawezesha uchunguzi bora na usimamizi wa watu walio na unyogovu nchini Kenya kufuatia ulemavu / jeraha la mwili. Hauwezi kupata gharama yoyote kwa kushiriki katika utafiti.

Hatari ya utafiti: Hatari ni kwamba kwa sababu ya tathmini tofauti za hali zinazofanana, unaweza kupata maswali kadhaa yanayokusumbua. Ikiwa unapatikana katika uhitaji wa uingiliaji zaidi wa matibabu, utapelekwa kliniki inayofaa katika KNH.

Kujitolea: Makubaliano yako ya kujiandikisha katika masomo ni ya hiari na unaweza kujiondoa kutoka kwa masomo wakati wowote. Hakuna adhabu au upotezaji wa faida ambayo una haki nyingine kwa sababu ya kukataa kushiriki katika utafiti.

Usiri: Habari yote inayopatikana kutoka kwa utafiti huu itazingatiwa kwa usiri na usiri wa karibu sana. Jina lako halitarekodiwa mahali popote kwenye utafiti au kwenye machapisho yanayosababisha.

Baada ya kusoma maelezo tafadhali jisikie huru kuuliza maswali yoyote ambayo yatakuruhusu kuelewa wazi aina ya masomo. Asante kwa kushiriki katika utafiti huu.

MAWASILIANO:

Mtafiti: Dkt. Gerald Ng'ang'a Simu Namba 0722973210

Wasimamizi: Prof. Muthoni Mathai Simu No: 0727 329904

              Dkt. John Mburu Namba ya simu: 0733-918-774

Unaweza pia kuwasiliana na katibu / mwenyekiti, Hospitali ya Kitaifa ya Maadili ya Kenya ya Chuo Kikuu cha Maadili na Utafiti wa Nairobi kwa simu no. 2726300 Ext 44102 au barua pepe u onknh_erc@uonbi.ac.ke.

TAARIFA YA IDHINI

Taarifa ya Mshiriki

Mimi waliowekwa chini ninajitolea kushiriki katika utafiti huu. Asili na kusudi nimeelezewa kikamilifu na Dkt. Gerald Ng'ang'a na amejibu maswali ambayo nilikuwa nayo. Ninaelewa kuwa habari yote iliyopewa / iliyopatikana itatibiwa kwa usiri wa nje na itatumika kwa utafiti huu tu.

Ishara ya Mshiriki / muhuri wa Thumb⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯Tarehe ⎯⎯⎯⎯⎯⎯⎯⎯

Taarifa ya Watafiti

Nimeelezea kikamilifu madhumuni ya utafiti na jukumu la mshiriki kwa waliohojiwa na pia nimeelezea wasiwasi wowote ambao walikuwa nao. Naamini mshiriki ameelewa utafiti na nini inajumuisha na yuko tayari kushiriki katika utafiti kwa uhuru

Watafiti Saini / muhuri wa Thumb⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯Tarehe ⎯⎯⎯⎯⎯⎯⎯⎯

Appendix 3: Researcher designed socio-demographic – English version

Age……….. In what year were you born? Year ………………………..

Marital status

Single	
Married	
Separated	
Divorced	
Widowed	
Other	

Religion

Christian ……… Muslim ……… Other (specify) ……………………………………

Level of Education

Please tick the option that applies to you	
No formal education	
Primary school education	
Secondary school education	
College education	
University education	

For completion of college education:

Please indicate (tick) which level applies to you.	
Certificate	
Diploma	
Bachelor's degree	
Masters	
Doctorate	
Post-doctorate	

Socio-economic Status

1. Occupation:

Please indicate (tick) the option that applies to you	
Employed	
Casual employment	
Self-employed	
Unemployed	

2. Income Range per Month:

Please indicate (tick) the option that applies to you.	
Less than Kshs. 3000	
Kshs. 3000 to Kshs. 6000	
Kshs. 6,000 to Kshs. 10,000	
Above Kshs. 10,000	

Type of injury

Please indicate (tick) the option that applies to you	
Fracture	
Burns reconstruction	
Road traffic accident	
Any major surgery Specify………………………………………	
Other Specify………………………………………	

Appendix 4: Researcher Designed Socio-demographic – Swahili version

Umri: ………

Ulizaliwa mwaka gani? Mwaka ……………………

Hali ya ndoa

Tafadhali chora alama kwa aina ya ndoa yako	
Bila mume	
Umeolewa	
Umeachana na mume wako	
Umepewa talaka na mumeo	
Mjane	
zingine	

Dini:

Mkristo ……… Muislamu ……… Ingine (Fafanua) ……………………………………

Masomo

Tafadhali chora alama katika aina ya masomo yako	
Hakusoma	
Shule ya Msingi	
Shule ya Upili	
Masomo ya Vyuo Vikuu	

Kwa walio maliza masomo ya vyuo:

Tafadhali chora alama katika aina ya masomo yako	
Cheti	
Diploma	
Shahada	

Shahada ya uzamili	
Shahada ya udaktari	
Shahada baada ya udaktari	

Hadhi ya kiuchumi na kijamii

1. Kazi:

Tafadhali chora alama kwa aina ya kazi yako	
Umeandikwa kazi	
Unashikia wengine kazi kwa muda mfupi	
Unajifanyia kazi mwenyewe	
Hauna kazi	

2. Mapato kwa Mwezi:

Tafadhali chora alama kwa aina ya mapato/mshahara yako	
Chini ya Kshs. 3000	
Kshs. 3000 hadi Kshs. 6000	
Kshs. 6,000 hadi Kshs. 10,000	
Zaidi ya Kshs. 10,000	

Aina ya jeraha

Tafadhali chora alama kwa aina ya mapato/mshahara yako		
Kuvunjika		
Ujenzi baada yakuchomeka		
Ajali za barabara za barabara		
Upasuaji wowote mkubwa		
Taja……………………………………		
Zingine		
Taja……………………………………		

Appendix 5: Becks Depression Inventory – English version

Please use one tick (✔) in each response that applies to you to indicate your answer.

1.

0	I do not feel sad.
1	I feel sad
2	I am sad all the time, and I can't snap out of it.
3	I am so sad and unhappy that I can't stand it.

2.

0	I am not particularly discouraged about the future.
1	I feel discouraged about the future.
2	I feel I have nothing to look forward to.
3	I feel the future is hopeless and that things cannot improve.

3.

0	I do not feel like a failure.
1	I feel I have failed more than the average person.
2	As I look back on my life, all I can see is a lot of failures.
3	I feel I am a complete failure as a person.

4.

0	I get as much satisfaction out of things as I used to.
1	I don't enjoy things the way I used to.
2	I don't get real satisfaction out of anything anymore.
3	I am dissatisfied or bored with everything.

5.

0	I don't feel particularly guilty.
1	I feel guilty for a good part of the time.
2	I feel quite guilty most of the time.
3	I feel guilty all of the time.

6.

0	I don't feel I am being punished.
1	I feel I may be punished.

	2	I expect to be punished.
	3	I feel I am being punished.

7.

	0	I don't feel disappointed in myself.
	1	I am disappointed in myself.
	2	I am disgusted with myself.
	3	I hate myself.

8.

	0	I don't feel I am any worse than anybody else.
	1	I am critical of myself for my weaknesses or mistakes.
	2	I blame myself all the time for my faults.
	3	I blame myself for everything wrong that happens.

9.

	0	I don't have any thoughts of killing myself.
	1	I have thoughts of killing myself, but I would not carry them out.
	2	I would like to kill myself.
	3	I would kill myself if I had the chance.

10.

	0	I don't cry any more than usual.
	1	I cry more now than I used to.
	2	I cry all the time now.
	3	I used to be able to cry, but now I can't cry even though I want to.

11.

	0	I am no more irritated by things than I ever was.
	1	I am slightly more irritated now than usual.
	2	I am quite annoyed or irritated a good deal of the time.
	3	I feel irritated all the time.

12.

	0	I have not lost interest in other people.
	1	I am less interested in other people than I used to be.
	2	I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13.

 0 I make decisions about as well as I ever could.

 1 I put off making decisions more than I used to.

 2 I have greater difficulty in making decisions more than I used to.

 3 I can't make decisions at all anymore.

14.

 0 I don't feel that I look any worse than I used to.

 1 I am worried that I am looking old or unattractive.

 2 I feel there are permanent changes in my appearance that make me look unattractive.

 3 I believe that I look ugly.

15.

 0 I can work about as well as before.

 1 It takes an extra effort to get started at doing something.

 2 I have to push myself very hard to do anything.

 3 I can't do any work at all.

16.

 0 I can sleep as well as usual.

 1 I don't sleep as well as I used to.

 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

 3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

 0 I don't get more tired than usual.

 1 I get tired more quickly than I used to.

 2 I get tired of doing almost anything.

 3 I am too tired to do anything.

18.

 0 My appetite is no worse than usual.

 1 My appetite is not as good as it used to be.

 2 My appetite is much worse now.

3 I have no appetite at all anymore.

19.

  0 I haven't lost much weight, if any, lately.

  1 I have lost more than five pounds.

  2 I have lost more than ten pounds.

  3 I have lost more than fifteen pounds.

20.

  0 I am no more worried about my health than usual.

  1 I am worried about physical problems like aches, pains, upset stomach, or

constipation.

  2 I am anxious about physical problems, and it's hard to think of much else.

  3 I am so worried about my physical problems that I cannot think of anything else.

21.

  0 I have not noticed any recent change in my interest in sex.

  1 I am less interested in sex than I used to be.

  2 I have almost no interest in sex.

  3 I have lost interest in sex completely.

Appendix 6: Becks Depression Inventory – Swahili version

Tafadhali tumia tiki moja (✔) katika kila jibu ambalo linatumika kwako kuonyesha jibu lako.

1.

   0 Sijihisi mwenye huzuni.

   1 Najihisi mwenye huzuni

   2 Mimi niko na huzuni wakati wote na siwezi kuiondoa.

   3 Mimi niko na huzuni sana na kwamba siwezi kusimama.

2.

   0 Mimi sijakata tamaa kuhusu siku zijazo.

   1 Nimekata tamaa kuhusu siku zijazo.

   2 Ninahisi kuwa hakuna kitu cha kutarajia.

   3 Najisikia siku zijazo haiko na matumaini na mambo hayawezi kuboresha.

3.

   0 Sijihisi kama kushindwa.

   1 Ninahisi nimeshindwa zaidi kuliko mtu wa wastani.

   2 Ninapoangalia nyuma juu ya maisha yangu, yote ninayoyaona ni kushindwa mengi.

   3 Ninahisi kuwa ni kushindwa kabisa kama mtu.

4.

   0 Niridhishwa sana na mambo kama kitambo.

   1 Siridhishwi na mambo kama kitambo.

   2 Sijihisi kuridhishwa na chochote tena.

   3 Sipendenzwi na lolote.

5.

   0 Sina hisia za hatia

   1 Niko na hisia za hatia muda kwa muda.

   2 Nina hisia za hatia mara kwa mara.

   3 Nina hisia za hatia wakati wote.

6.

   0 Sijihisi kama ninaadhibiwa.

1 Ninahisi nitaadhimbiwa.

2 Natarajia kuadhibiwa.

3 Nahisi kama naadhibiwa.

7.

0 Sina hisia za kukata tamaa.

1 Nina hisia za kukata tamaa.

2 Nimevunjika moyo na mimi mwenyewe.

3 najichukia mwenyewe.

8.

0 Sijihisi mmbaya zaidi kuliko mtu mwingine yeyote.

1 Mimi ninajijitenga mwenyewe kwa udhaifu wangu au makosa yangu.

2 Ninajihukumu wakati wote kwa makosa yangu.

3 Ninajihukumu mwenyewe kwa kila kitu kibaya kinachotokea.

9.

0 Sina mawazo yoyote ya kuua mwenyewe.

1 Nina mawazo ya kujiua, lakini siwezi kuyachukua.

2 Ningependa kujiua.

3 Ningependa kujiua ikiwa nilipata nafasi.

10.

0 Silii zaidi kuliko kawaida.

1 Nalia zaidi sasa kuliko nilivyokuwa.

2 Mimi nalia wakati wote sasa.

3 Nilikuwa na uwezo wa kulia, lakini sasa siwezi kulia hata kama nataka.

11.

0 Mimi sina hasira zaidi kwa vitu kuliko nilivyokuwa.

1 Mimi nikasirika zaidi sasa kuliko kawaida.

2 Napata hisia za hasira mara kwa mara.

3 Najisikia hasira wakati wote.

12.

0 Sijapoteza riba kwa watu wengine.

1 Mimi niko na nia kidogo kwa watu wengine kuliko nilivyokuwa.

2 Nimepoteza maslahi yangu kwa watu wengine.

3 Nimepoteza maslahi yangu kwa watu wengine.

13.

0 Ninafanya maamuzi kuhusu vile vile nilivyoweza.

1 Ninaacha kufanya maamuzi zaidi kuliko niliyokuwa nayo.

2 Nina shida kubwa katika kufanya maamuzi zaidi kuliko niliyokuwa nayo.

3 Siwezi kufanya maamuzi wakati wote.

14.

0 Sijihisi kuwa ninaonekana kuwa mbaya zaidi kuliko nilivyokuwa.

1 Nina wasiwasi kwamba mimi ni kuangalia zamani au kushindwa.

2 Ninahisi kuna mabadiliko ya kudumu katika muonekano wangu ambayo yanafanya nipate kuangalia kuwa haifai

3 Ninaamini kwamba ninaonekana kuwa mbaya.

15.

0 Ninaweza kufanya kazi kama vile kabla.

1 Inachukua juhudi zaidi ili kuanza kuanza kufanya kitu.

2 Ninahitaji kujisukuma sana kufanya kitu chochote.

3 Siwezi kufanya kazi yoyote wakati wote.

16.

0 Ninaweza kulala kama kawaida.

1 Silali kama nilivyokua nikilala.

2 Ninaamka masaa 1-2 mapema kuliko kawaida na ni vigumu kurudi kulala.

3 Ninaamka masaa kadhaa mapema kuliko nilivyokuwa na siwezi kurudi kulala.

17.

0 Sijihisi mchovu zaidi kuliko kawaida.

1 Najihisi mchovu zaidi kuliko nilivyokuwa.

2 Najihisi mchovu nikifanya karibu kila kitu.

3 nimechoka sana kufanya chochote.

18.

0 Nia yangu si mbaya kuliko kawaida.

1 Njaa yangu si nzuri kama ilivyokuwa.

2 Mlo wangu ni mbaya zaidi sasa.

3 Sina hamu ya yote tena.

19.

0 Sijawahi kupoteza uzito, kama ipo, hivi karibuni.

1 Nimepoteza zaidi ya paundi tano.

2 Nimepoteza zaidi ya paundi kumi.

3 Nimepoteza paundi zaidi ya kumi na tano.

20.

0 Mimi sio wasiwasi juu ya afya yangu kuliko kawaida.

1 Mimi nina wasiwasi kuhusu matatizo ya kimwili kama maumivu, maumivu, tumbo, au kuvimbiwa.

2 Nina wasiwasi sana juu ya matatizo ya kimwili na ni vigumu kufikiria mambo mengine.

3 Mimi nina wasiwasi juu ya matatizo yangu ya kimwili kwamba siwezi kufikiria kitu kingine chochote.

21.

0 Sijaona mabadiliko yoyote ya hivi karibuni kwa nia ya ngono.

1 Mimi siko nia ya ngono kuliko nilivyokuwa.

2 Sina karibu nia ya ngono.

3 Nimepoteza maslahi ya ngono kabisa

Appendix 7: Study Time Line

January – September, 2020	Proposal Development
August – September, 2020	Finalizing Individual Proposal, Proposal Presentation in Department of Psychiatry (UoN), Corrections
February – April, 2020	Approval by KNH –UON Ethics Committee, Corrections
April – June , 2020	Data collection
June – July, 2020	Data analysis, report writing, results presentation
September, 2020	Submission of report
September, 2020	Results presentation in participating institutions

Appendix 8: Study Budget

	CATEGORY/ITEM	TOTAL COST FOR ITEMS (Kshs.)
1	Charges for the KNH/UoN-ERC Proposal Review	2,000
2	For data collection purposes; stationery to input data in the questionnaires i.e. Pencils, Pens, Pencil sharpener, Erasers, Stapler, Storage boxes etc.	3,000
3	Operating expenses that may be incurred by the researcher: a) Input of data @ 2,000/= b) Report writing @ 2,000/= c) Transport costs @ 1,000 per week for 8 weeks	12,000
4	Hard copies of the Data Collection Tools for the participants - BDI - Socio-demographic Questionnaire	6,000
5	For hard copies of the Consent and Assent Forms for the participants	2,000
6	a) Document printing and copying, b) Proposal copies (3copies) c) Copying and binding of the final research dissertation; (5 copies)	8,000
7	For efficient and accurate data analysis	20,000
	Grand Total	**53,000**

CHAPTER FOUR: STUDY RESULTS

4.1   Introduction

The results are presented according to the study objectives which were:

1. To determine the socio-demographic profile of patients attending the Physiotherapy clinic at Kenyatta National Hospital.

2. To determine the Type of injuries in patients attending the Physiotherapy clinic at Kenyatta National Hospital

3. To determine the prevalence of depression among patients attending the Physiotherapy clinic at Kenyatta National Hospital.

4. To determine the association between depression and socio-demographic factors.

5. To determine the association between depression and the type of injury.

4.2   Response Rate

The calculated sample size 300 participants were recruited but 1 respondent's questionnaire was excluded due to incompletion or missing data after he/she opted out of the study. The response rate was 99.6%.

4.3   Respondents' Socio Demographic Profiles

As indicated in Table 4.1, 157 (52.5%) of the respondents were male while 47.5% (142) were female. The mean age of the respondents was 36.74yrs (SD. ±13.783), the mode was 30yrs and the median 34yrs. As indicated in figure 4.1, the respondents' age distribution was skewed towards the left with most of the respondents between the age of 20 and 40yrs. Figure 4.1 further illustrates the respondents in respective categories.

Fifty-six point five percent (169) were married while 30.4% (91) were single. Six percent (18) were widowed while 8 (2.7%) were divorced. 4.4% were separated. Majority of the respondents (84.6%) were Christians. Islam was represented by only 7% of the study population. As indicated, most of the respondents had reached secondary school level in their education 107 (35.8%). Twenty-six percent 78 (26%) of the respondents had also reached college while 34 (11.4%) had no formal education. The percentage of respondents that was unemployed was78 (26.1%), employed respondents were 60 (20.1%). Twenty-three point seven 71 (23.7%) of the respondents were in casual employment while 84 (28.1%) were self-employed. Most of the respondents 116 (38.8%), earned more than kshs. 10000, a month.
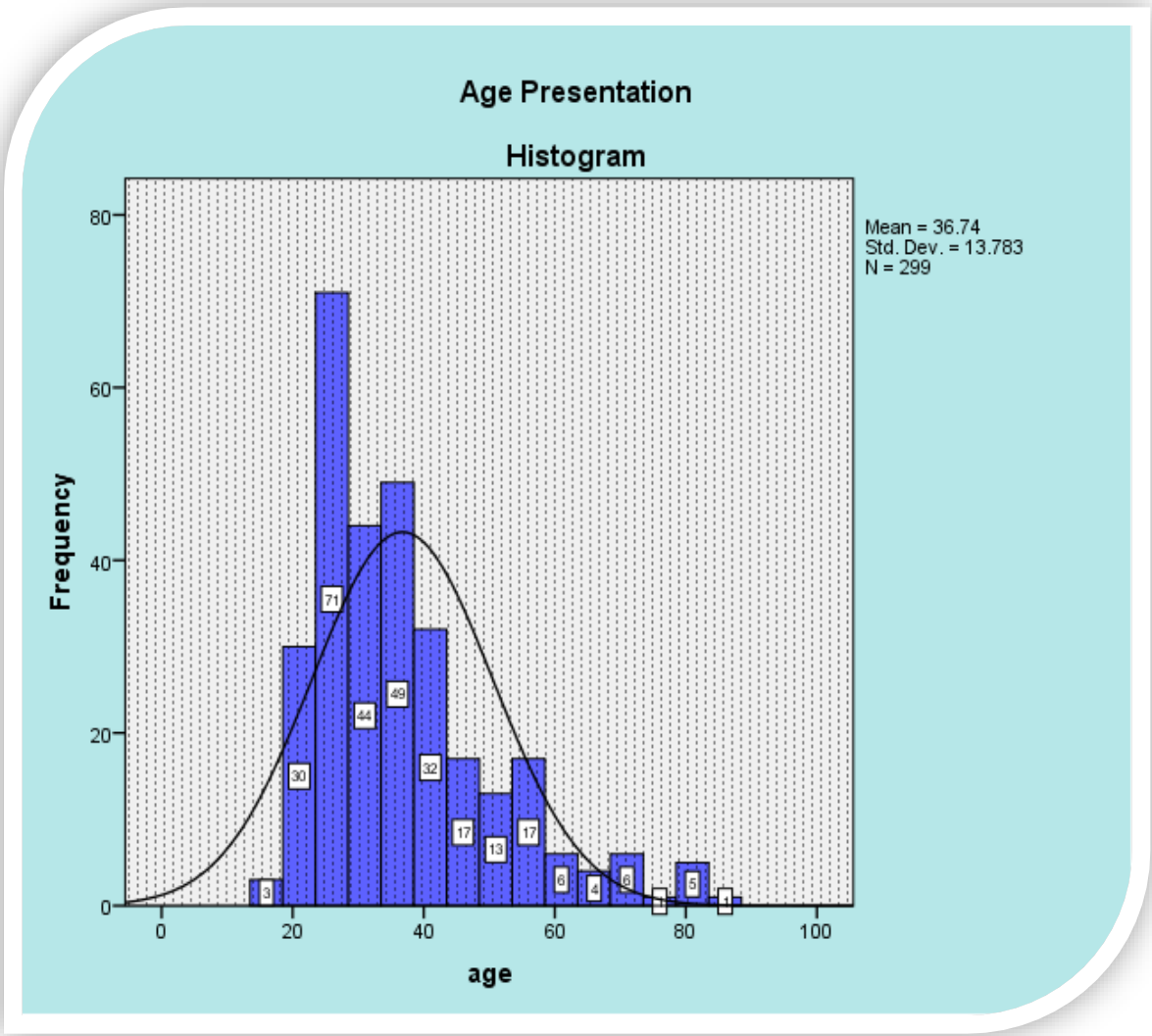
Figure 4. 1: Respondents Age Representation

Table 4. 1 : Respondents socio-demographic profile

Variable		Outcome 299/100%	
		Frequency (n)	Percentage (%)
Gender	Male	157	52.5%
	Female	142	47.5%
	NR	1	0.5%
Age	<20yrs	9	3.0%
	20 -29yrs	98	32.8%
	30-39yrs	96	32.1%
	40-49yrs	43	14.4%
	50-59yrs	30	10.0%
	60 & above	23	7.7%
Marital Status	Married	91	30.4%
	Single	169	56.5%
	Divorced	18	6.0%
	Widowed	8	2.7%
	Separated	4	4.4%
Religion	Christian	253	84.6%
	Muslim	21	7.0%
	Others	8	2.7%
	NR	17	5.7%
Level of education	No Formal Education	34	11.4%
	Primary School Education	44	14.7%
	Secondary School Education	107	35.8%
	College Education	78	26.1%
	University Education	35	11.7%
	NR	1	.3%
Source of livelihood/ Occupation status	Employed	60	20.1%
	Casual Employment	71	23.7%
	Self- Employed	84	28.1%
	Unemployed	78	26.1%
	NR	6	2.0%
Income Range	less than 3000	81	27.1%
	kshs. 3000 to 6,000	32	10.7%
	Kshs. 6000 to 10,000	64	21.4%
	Above kshs. 10000	116	38.8%
	NR	6	2.0%

4.4   Types of Injuries/ Complaints Among Patients Seeking Physiotherapy Services at KNH

The study sought to determine the common types of injuries that respondents who went for

physiotherapy had. As shown in Figure 4.2, most of the respondents reported to be having fractures

(84.8%), Burns (10.7%), Major surgeries (0.7%) and others (3.8%). Respondents that indicated

"others" were mostly suffering from different forms of cancer that required them to attend
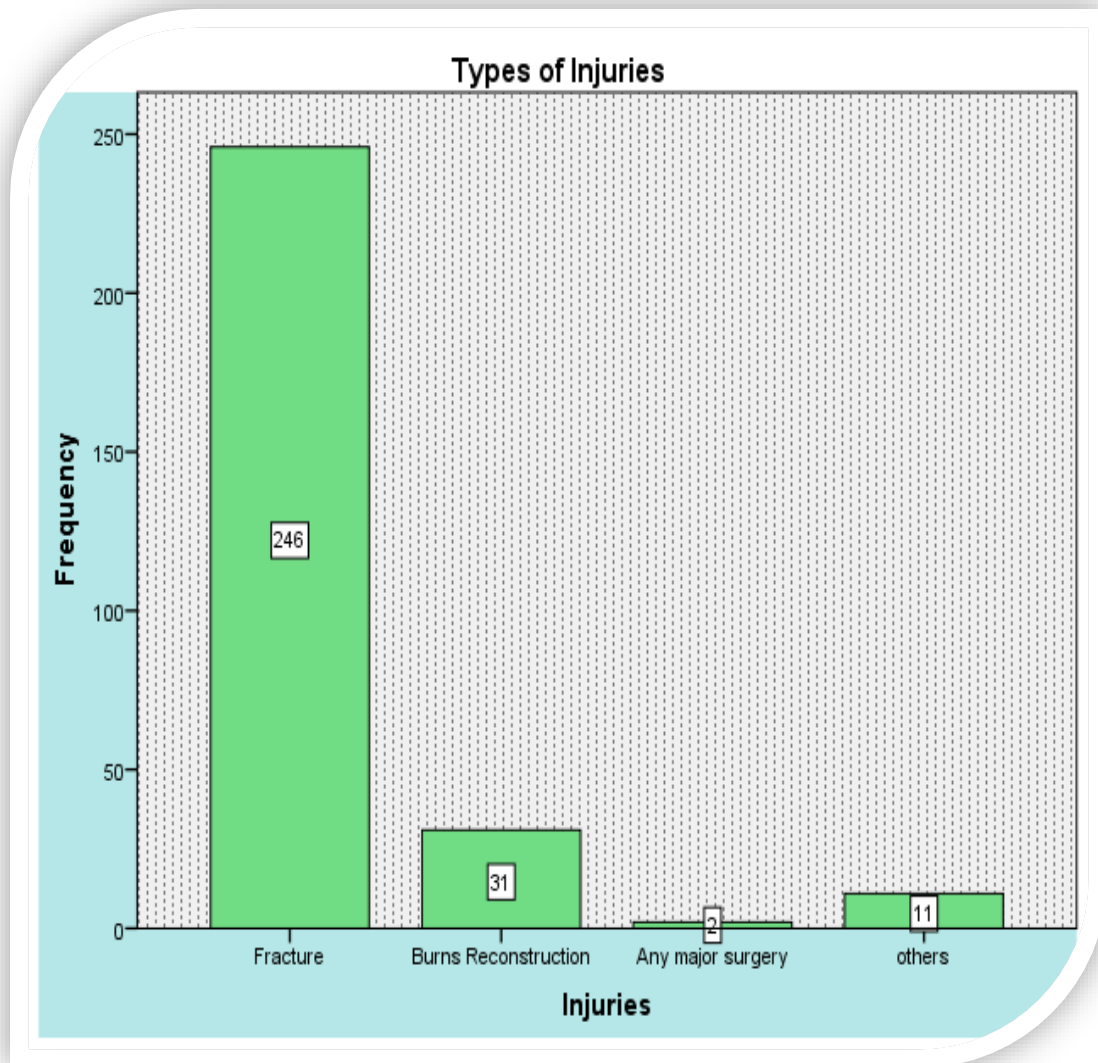
physiotherapy sessions.

Figure 4. 2: Type of injuries Representation

4.5   BDI scores & Level of depression among patients attending the Physiotherapy clinic at Kenyatta National Hospital.

As illustrated in figure 4.3, The mean BDI scores of the respondents was 11.82 (SD. ±10.650), the mode score was 5 and the median 9. The respondents BDI scores were skewed towards the left with most of the respondents having minimal scores of below 12 on average; which is indicative of NO depression.
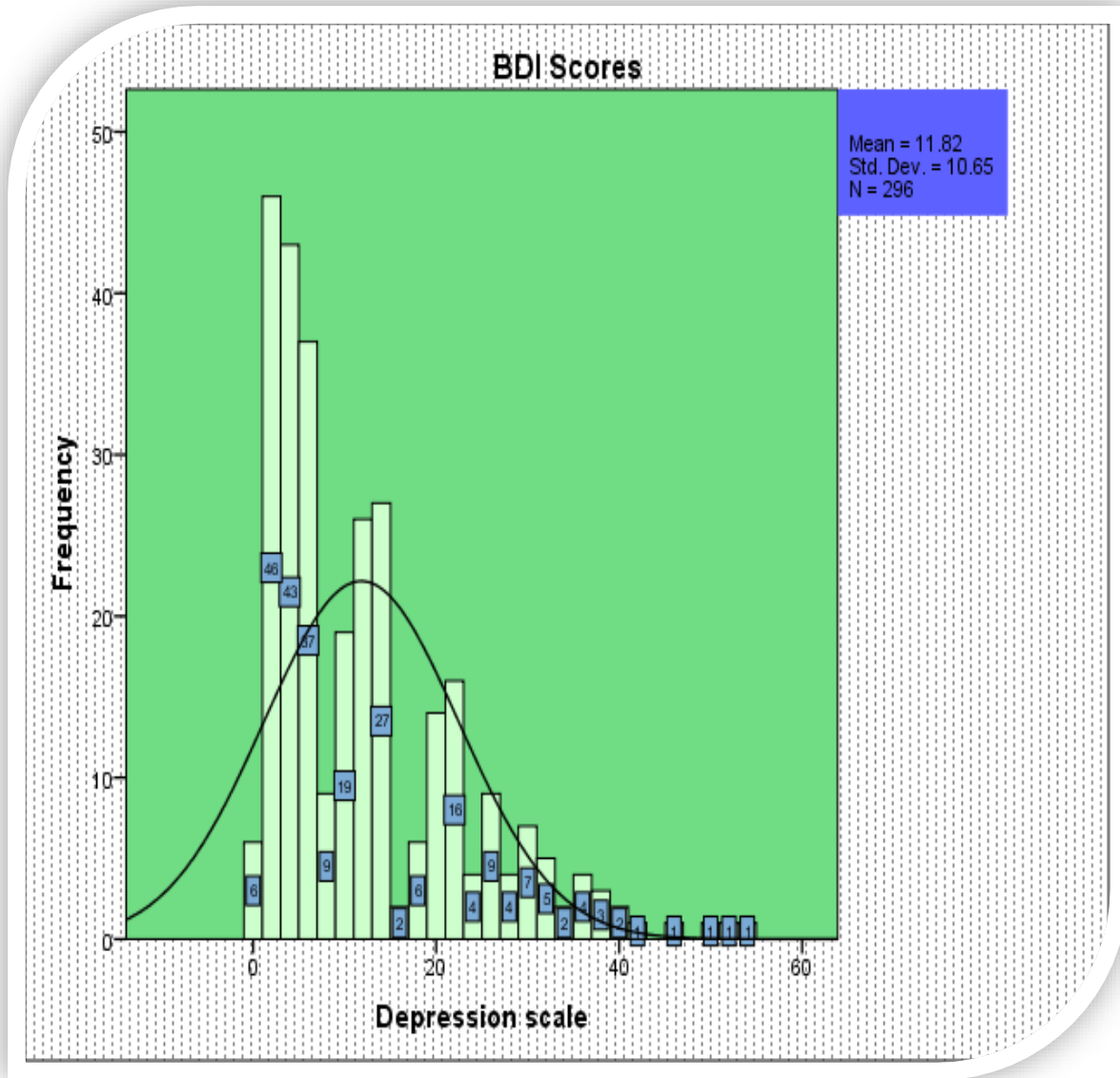

Figure 4. 3: BDI scores range

Respondents Depression levels (Categories as per BDI interpretation)

As shown on table 4.2, majority of the respondents 205 (69.3%) had scores less than 10 on the BDI.

Hence they were not depressed. Eight percent 24 (8.1%) had mild depression while 43 (14.5%) were found to be having moderate depression with scores between 20-28. Finally, 24 (8.1%) of the respondents with scores above 29 were diagnosed with severe depression.

The cutoffs are represented as follows: 0–10: minimal depression; 11-16 mild depression; 17–30 moderate depression, 31–40 severe depression and >40 extreme depressions (see table 4.2).

Table 4. 2: Respondents' Depression Levels

	Frequency	Percent
No depression (0-13)	205	69.3
Mild depression(14-19)	24	8.1
Moderate depression(20-28)	43	14.5
Severe depression(29-63)	24	8.1
Total	296	100.0

Prevalence of Depression Among the Respondents

The prevalence of depression was arrived at by taking into consideration the respondents with mild to severe depression. As shown in Figure 4.4; the prevalence was 31%.
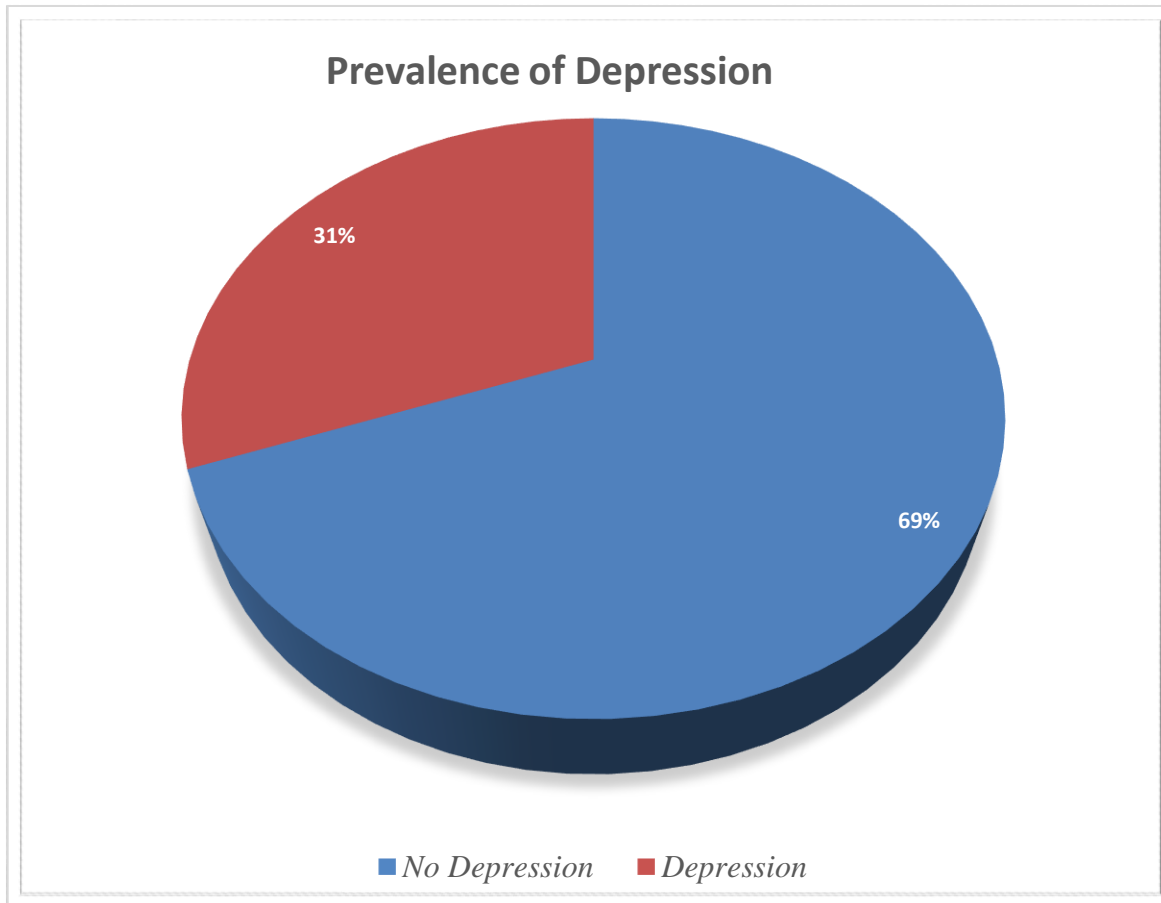
Figure 4. 4: Prevalence of Depression

Association and Correlation Among Variables

Socio-Demographic Factors and Level of Depression

As indicated in Table 4.4, age was significantly associated with depression at a *p*= 0.003. As indicated respondents below the age of 20yrs and those who were above 60yrs old seemed to be suffering from depression more than other age groups.

To explain the correlation between the variables, the Crammer's Phi coefficient (Crammer's V) was calculated. It was appropriated as the age variable was categorical. As indicated in the table, Crammer's V =0.244, hence implying that the impact of age on depression or vice versa was positive

but moderate. Therefore, it is expected that if more respondents were older or younger, they would then report higher numbers of depression.

As indicated, Education level was significantly associated with depression at a $p= <0.001$. As indicated respondents with no formal education seemed to be more depressed. It was also notable that respondents with higher levels of education (college and University levels) generally seemed less depressed.

As indicated in the table, Crammer's V =0.284, hence implying that the impact of education level on depression or vice versa was positive but moderate. Similarly, employment was significantly associated with depression at a $p= <0.001$. Unemployed respondents seemed to be more depressed. Individuals that had unstable form of employments also seemed to be affected. The least depressed group was the employed respondents. As indicated in the table, Crammer's V =0.320, hence implying that the impact of employment level on depression or vice versa was positive and strong in that, if the more respondents reported being employed, then there would less number of depressed persons.

Income range was found to be significantly associated with depression at a *p= <0.001*. Respondents earning less than 3000 shillings seemed to be most affected.

As indicated in the table, Crammer's V =0.302, hence implying that the effect of low income on depression or vice versa was positive and strong.

Gender was found not to be significantly associated with depression at a $p= 0.255$.

Marital status was also found not to be significantly associated with depression at a $p= 0.557$.

Table 4. 3: Association & Correlation between Socio-Demographic Factors & Level of Depression

Variable		Depression		Chi Square (P Value)	Correlation statistics (Cramer's V)
		No	Yes		
Age	<20yrs	2(0.7%)	7(2.4%)	$X^2=17.636$	$\varphi_c =0.244$
	20 -29yrs	72(24.3%)	23(7.8%)		

	30-39yrs	65(22.0%)	31(10.5%)	*Df=5*	
	40-49yrs	32(10.8%)	11(3.7%)	*P=0.003*	
	50-59yrs	23(7.8%)	7(2.4%)		
	60 & above	11(3.7%)	12(4.1%)		
Gender	Male	113(38.3%)	42(27.1%)	*X²=2.736*	
	Female	93(31.3%)	49(16.5%)	*Df=2* *P=0.255*	
Marital Status	Single	63(22.0%)	26(8.8%)	*X²=6.812*	
	Married	119(40.1%)	50(16.8%)	*Df=8*	
	Separated	7(2.4%)	6(2.0%)	*P=0.557*	
	Divorced	7(2.4%)	1(0.3%)		
	Widowed	10(3.4%)	8(2.7%)		
Employment	Employed	54(18.4%)	6(2.0%)	*X²=29.959*	$\varphi_c =0.320$
	Casual Employment	46(15.7%)	25(8.5%)	*Df=3*	
	Self- Employed	64(21.8%)	20(6.8%)	*P=<0.001*	
	Unemployed	38(13.0%)	40(13.7%)		
Income Range	less than 3000	38(13.0%)	43(14.7%)	*X²=26.702*	$\varphi_c =0.302$
	kshs. 3000 to 6,000	26(8.9%)	6(2.0%)	*Df=3*	
	Kshs. 6000 to 10,000	46(15.7%)	18(6.1%)	*P= <0.001*	
	Above kshs. 10000	92(31.4%)	24(8.2%)		
Level of education	No Formal Education	15(7.1%)	19(6.4%)	*X²=23.731*	$\varphi_c =0.284$
	Primary School	23(7.8%)	21(7.1%)	*Df=4*	
	Secondary School	77(26.1%)	30(10.2%)	*P=<0.001*	
	College Education	62(21.0%)	13(4.4%)		
	University Education	27(9.2%)	8(2.7%)		

Association and correlation between Common Types of Injuries& Depression

As indicated in table 4.5, The type of injury was found to be significantly associated with depression

at a *p= <0.001*. Respondents who had undergone burns reconstruction seemed to be most affected.

The same was noted for respondents who had indicated that they were recovering from fractures.

As indicated in the table, Crammer's V =0.414, hence implying that the effect of the type of injuries

on depression or vice versa was positive and very strong.

Table 4. 4: Type of Injuries and Depression

Type of Injuries	Prevalence of Depression		Chi Square	Correlation statistics
	No Depression	Depression	(P Value)	(Cramer's V)
Fracture	190(77.2%)	56(22.8%)	*X²=49.598*	$\varphi_c=0.414$
Burns reconstruction	6(19.4%)	25(80.6%)	*Df=3*	

			P=<0.001	
Any major surgery	1(50.0%)	1(50.0%)	*P=<0.001*	
Others	4(36.4%)	7(63.6%)		
Total	201(69.3%)	89(30.7%)		

CHAPTER 5: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1   Discussion

5.1.2   Prevalence of Depression among patients attending physiotherapy clinics

The study found that the prevalence of depression among patients attending physiotherapy sessions at

KNH was 30.4%. Overall, eight percent (8.0% (24)) had mild depression while 14.4% (43) had

moderate depression. Finally, 8% (24) of the respondents were diagnosed with severe depression. The prevalence reported in this Kenyan study was considerably low compared to the findings in the few published studies on the same.

A study that was conducted in Erbil City in Iraq among patients attending physiotherapy reported an overall prevalence of 56% with 20.5% respondents having moderate depression, 27% reported to have mild depression and finally 8.5% having severe form of depression (Ali, Zangana, & Tahir, 2018). The study which adopted a cross sectional research design included 200 patients attending physiotherapy clinic in Hawler and Rizgary Teaching Hospitals in Erbil City from January - March 2009. Depression was measured using the Patient Health Questionnaire (PHQ-9).

A study that was conducted in the USA among patients that had undergone treatment for traumatic non-neurological injuries reported that 68.4% of the participants had some form depression (Bell, Vetor, & Zarzaur, 2016), Clearly indicating that individuals seeking physiotherapy services did suffer from depression. The study adopted a longitudinal study design where patients were followed over a period of 1yr indicating when they actually screened positive for depression. It included 500 participants. The researchers also reported only 22% were on treatment for depression (Bell, Vetor, & Zarzaur, 2016).

In another study that was conducted in Bangladesh, India, among post stroke patients who were also attending physiotherapy, it was established that 70% of the respondents had some form of depression. The study found that 32% of them had severe depression. Depression was measured using the Hamilton Depression Rating Scale (Ariful Islam, Rahman, & Aleem, 2016). Near similar prevalence rates were reported in another study that was undertaken in Bangladesh. Notably the study also used the Hamilton Depression Rating scale. The researchers reported that the prevalence of depression among this group

of respondents was 65%. Overall, 30% had severe depression and rest 17% mild, 18% moderate depression (Salahuddin, Shabnam, Nandeeta, & Russell, 2019).

In a similar study that focused on screening for symptoms of post stroke depression among stroke survivors: an appraisal of psychiatry needs and care during physiotherapy rehabilitation in Nigeria, it was established that out of the 50 stroke survivors, 21 (42.0%) had symptoms of various levels of depression, whereas 29 (58.0%) had no clinical indication of depression. Out of the 21 stroke survivors that had symptoms of depression, 10 (47.62%) had symptoms of moderate depression, while 11 (52.38%) had symptoms of borderline clinical depression (Diksic et al., 2016). This study used Becks Depression Index to assess for depression.

5.1.2   Association between Socio-Demographic Profile of Respondents & Depression

Overall, the number of male and female patients that generally went for physiotherapy was more or less similar; slightly above 50% for the male gender and slightly below 50% for the female gender. The age range of most of the respondents was between 23yrs and 50yrs. The outliers were the under 20yrs and over 65yrs. Most of the respondents were married, however that could be explained by the age criteria as well. As for the respondent's education levels, most had just reached secondary school levels and also either unemployed or in casual employment. As for salaries, it was established that most respondents earned more than Kshs. 10,000.

With regards to association between social-demographic factors and the level of depression among the patients attending physiotherapy, it was established that gender and marital status were not significantly associated with depression. Other studies reported contrary findings for example in the Iraqi study, it was found that gender and marital status were significantly associated with depression (Ali, Zangana, & Tahir, 2018).   The researchers found that female and married respondents were

mostly affected. This Kenyan study also established that education level, employment, income range were significantly associated with depression. The Iraqi study doesn't delve into association between the variables.

It should be noted that, the discussion of findings in comparison to what is already published is quite limited due to serious paucity in data. Nevertheless, Ariful, Islam, Rahman, & Aleem (2016) in their study, found that other factors such as living in a joint family or being unable to perform daily activities individually and having comorbid dysphasia and hypertension were significantly associated with depression. More studies need to be conducted and published on the same.

5.1.3   Common types of injuries among patients attending physiotherapy/ depression

This current study established that most patients attending physiotherapy sessions were healing from fractures. The type of injuries was found to be significantly associated to depression, Respondents who had undergone burns reconstruction seemed to be most affected. The same was noted for respondents who had indicated that they were suffering from other diseases like cancer. Most studies referred to in this chapter have one commonality, which is, the researchers mainly focused on patients with a particular injury or illness and they sought physiotherapy services. Therefore, studies that can be referred to, to compare whether different type of injuries would cause likelihood of developing depression or not are scarce. However, based on the studies mentioned, high rates of depressions were reported by participants having various illnesses or traumatic injuries.

5.2   Conclusions

The study concludes that indeed depression is a significant health problem among patients that attend physiotherapy clinic for various issues or as part of the healing process after sustaining injuries.

Therefore, holistic management of these patients which include diagnosis and treatment of depression will probably result in better patient outcome.

5.3   Recommendations

The recommendations based on the study findings are:

1. Screening for common disorders e.g. Depression, Anxiety, Post-Traumatic Stress Disorder.

2. Should be done or considered before commencing physiotherapy sessions with a patient.

3. Referrals should be done to psychiatrists and psychologists whenever necessary.

4. There is need for physiotherapists to be well equipped with skills and knowledge in mental health to facilitate greater involvement.

5. Continuous learning should be done to ensure physiotherapists understand their role in mental health. This should include training in administering basic screening/assessments for the common mental disorders patients could present with.

5.4   Recommendation for Further Studies

More studies that give a general outlook on depression or presence of other disorders such PTSD among patients that seek physiotherapy services should be undertaken in Africa. There is paucity of published research on the same. The researcher could consider assessing for PTSD and anxiety in the same study site (Kenyatta National hospital- physiotherapy department).