

**PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSION AND ANXIETY
DISORDERS AMONG PRISON INMATES: CASE OF THYOLO PRISON IN MALAWI**

BY

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Abstract

Background: Research predominantly from high income countries suggests that depression and anxiety are highly prevalent among prison inmates. With limited available research from low and middle income countries, this study aimed to estimate the prevalence of possible anxiety and depression among Malawian inmates and identify factors associated with these conditions.

Methods: This cross-sectional study was conducted at Thyolo prison situated in the southernmost region in Malawi, from February to March 2018. A total of 378 male prison inmates were interviewed face-to-face using a general questionnaire examining socio-demographic characteristics, prisoners' previous and current involvement with the prison services, and self-reported mental health problems. Validated screening instruments were used, including the Center for Epidemiologic Studies Depression scale (CES-D) to measure depression; while the Beck Anxiety Inventory (BAI) was used to measure symptoms of anxiety. Multiple logistic regression analyses were conducted to determine the association between anxiety, depression and related variables.

Results: The prevalence of possible anxiety disorder and depressive disorder was 62.7% and 72.5% respectively. After adjusting for the effects of the other variables in the model, a multiple logistic regression found that anxiety was significantly associated with no support (AOR 1.65 95% CI: 1.02-2.66) and a previous mental disorder diagnosis prior to imprisonment (AOR 2.07 95% CI: 1.05-4.07); while depression was significantly associated with no support (AOR 5.19 95% CI: 2.66-10.14), and having two or more traumatic events (AOR 4.30 95% CI 1.65-11.23). However, being divorced (AOR 0.12, 95% CI: 0.04-0.35) was found to be a protective factor for depression. In addition to this, no support (AOR 2.24 95% CI: 1.36-3.69) and a previous mental disorder diagnosis prior to imprisonment (AOR 2.10 95% CI: 1.05-4.22) were significantly associated with comorbid depression and anxiety.

Conclusion: This study provided valuable insights into the prevalence and risk factors associated with possible depression and anxiety among prison inmates in Malawi. Therefore, regular screening of prison inmates for early detection and treatment of mental disorders would be beneficial to improve the quality of life of prison inmates.

List of abbreviations

AIDS	:	Acquired Immuno-deficiency Syndrome
ADIS-IV	:	Anxiety Disorders Interview Schedule
ART	:	Antiretroviral Therapy
ASPD	:	Antisocial Personality Disorder
AUDIT	:	Alcohol Use Disorders Identification Test
BDI	:	Beck Depression Inventory
CAGE	:	Cut down, Annoyed, Guilt, Eye opener
CES-D	:	Center for Epidemiological Studies Depression Scale
CIDI	:	Composite International Diagnostic Interview
CIS-R	:	Clinical Interview Schedule – Revised
C-SSRS	:	Columbia Suicide Severity Rating Scale
DALYs	:	Disability adjusted life years
DIS-IV	:	Diagnostic Interview Schedule for the DSM-IV
DSM	:	Diagnostic and Statistical Manual of Mental Disorders
GHQ	:	General Health Questionnaire
HICs	:	High income countries
HIV	:	Human Immunodeficiency Virus
LSAD	:	Leeds Scale for the Self-Assessment of Anxiety and Depression
LMIC	:	Low and middle income countries
MINI	:	Mini International Neuropsychiatric Interview
MMSE	:	Mini-Mental State Examination
NHSRC	:	National Health Sciences Research Committee
NOK	:	Ndetei-Othieno-Kathuku Scale
PSE	:	Present State Examination
PSQ	:	Psychosis Screening Questionnaire
PTSD	:	Posttraumatic Stress Disorder
SASH	:	South African Stress and Health Study
SCID	:	Structured Clinical Interview for DSM Disorders
SRQ	:	Self Reporting Questionnaire
SSMD	:	Shona Screen for Mental Disorders

SSQ : Shona Symptoms Questionnaire
THQ : Trauma History Questionnaire
WHO : World Health Organization
WMHS : World Mental Health Survey
YLD : Years lived with disability

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CHAPTER 1: INTRODUCTION

1.1 Background

Global evidence shows that prison populations are increasing in high-income countries (HICs). For example, in the United Kingdom the prison population rose from 41 800 in 1993, to 85 021 in 2013, comprising 81 128 males and 3893 females, (Goomany & Dickinson, 2015), and this figure is expected to reach 90 200 by the year 2020 (Walmsley, 2003). Similarly, the total prison population in the United States was 743 382, 1 355 748 and 2 217 000 in 1990, 2002 and 2013 respectively (World Prison Brief, 2013). Australia's prison population grew by 7% from 33 791 in 2014 to 36 134 in 2015 (World Prison Brief, 2016). Moreover, this population growth is not only limited to HICs. Data from African countries on prison populations also show an increase. For example, the South African prison population grew from 156370 in 2013 (Walmsley et al, 2013) to 159 563 in 2015 (World Prison Brief, 2015).

Similarly to the general population, prisoners face a number of health issues, including tuberculosis, asthma, HIV/AIDS and other infectious diseases, as well as mental health problems (Avenue, 2010). Research has shown that mental disorders are more prevalent among prison populations than the general population (Butler et al., 2005; Fazel & Danesh, 2002). The prevalence of mental disorders among prison inmates has been widely studied by researchers in HICs. For example, a number of studies have reported the prevalence of any lifetime mental disorder in prison inmates as being between 19.2% and 71.4% (Baillargeon et al., 2009; Wolff, 2005; Trestman et al., 2007; Morgan et al., 2012) compared to 15% to 47.4% in the general population (Lorito et al., 2018; Steel et al., 2014; Witchen et al., 2005; Kessler et al., 2007). In addition, a systematic review of 62 surveys conducted in Western prison populations found that among male prison populations, 3.7% had psychotic disorders, 10% had major depression, and 65% a personality disorder; while in female prison populations, 4% had psychotic illnesses, 12% had major depression, and 42% had a personality disorder. Moreover, the authors found that the leading cause of morbidity among prisoners is mental health problems (Fazel & Danesh, 2002).

At the present time, little has been documented in the African context on the prevalence of mental disorders among prison populations, although the reported data also shows a high prevalence. For example, one study conducted in South Africa at the Westville Correctional Centre found that the

prevalence of mental disorders among prisoners was 42.0% for substance and alcohol use disorders, 23.3% for psychotic, bipolar, and depressive and anxiety disorders; 9.8% for post traumatic stress disorder (PTSD) and 46.1% of prisoners had antisocial personality disorder (ASPD) (Naidoo & Mkize, 2012).

Malawi has not been an exception in experiencing a growing number of prisoners with mental health problems; although there has not been a prevalence study in this population. In a presentation during the 3rd Malawi Mental Health Research and Practice Development Conference, it was reported that the most commonly diagnosed mental disorders in Malawian prisons were substance-induced psychosis, contributing 30.6% of all diagnoses and schizophrenia accounting for 42.7% (Korste & Kawiya, 2013). However, despite the documented prevalence of increased mental health problems in prison populations compared to the general population, mental health services are insufficient in prisons in low- and middle-income countries (LMICs) (Dadi et al 2016). This is reflected in Malawi where mental health services in prisons or correctional settings are almost non-existent, and information about prisoners' health is scarce (Kawiya, 2013). However, it is very important to investigate mental health problems in prisoners, so that health services are placed within prisons to address a wide variety of mental health needs, and provide them with the same levels of care that people receive in the community (Dumont et al., 2012). There is little additional evidence from Malawi. The present study will fill this gap by investigating the prevalence and factors associated with probable depression and anxiety among prison inmates at Thyolo prison in Malawi.

1.2 Aim

To investigate the prevalence and factors associated with probable common mental disorders among prison inmates at Thyolo prison in Malawi.

1.3 Objectives

- a) To determine the prevalence of probable depression and anxiety among prison inmates at Thyolo prison.
- b) To determine the factors associated with probable depression and anxiety among prison inmates at Thyolo prison.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter commences by describing the global burden of mental disorders. Thereafter, the prevalence of mental disorders among the general population is presented. The available literature investigating the prevalence of mental disorders among the prison populations will then be highlighted. Also, in this chapter I will describe the factors associated with mental disorders among prison inmates. The chapter will conclude by describing the implications of untreated mental disorders among prison populations.

2.2 Global burden and prevalence of mental disorders

Mental and substance use disorders are notable contributors to the global burden of disease. According to the global burden of disease estimates for 2010, these disorders accounted for 258 million disability adjusted life years (DALYs) which is equivalent to 10.4% of all DALYs (Whiteford et al., 2015). Such disorders accounted for 2.3% of all YLLs. In addition to this, they also contributed 28.5% of all years lived with disability (YLDs) as the leading cause of YLDs (Whiteford et al., 2015). However, researchers have argued that mental disorders were underestimated in the Global Burden of Disease Study, for a number of reasons, including the attribution of all suicide deaths to self-harm injuries and not mental disorders. Analysis of published data generated different estimates for mental disorders (excluding neurological disorders), finding that these disorders contribute 32.4% of YLDs and 13.0% of DALYs (Vigo et al., 2016). There is available literature which indicates that these disorders are on the rise and that populations are placed at risk for mental disorder due to a range of social determinants such as low socioeconomic status, poor or inadequate social support, poor housing, over-crowding, violence, wars and tribal or political conflicts, fluctuation in climate, and urbanization, among others (Patel et al., 2016).

Globally, mental disorders are highly prevalent. Using data from 17 countries in the World Mental Health Survey, investigators report that the prevalence of common mental disorders (anxiety, mood and substance-related disorders) ranges from 18.1 to 36.1% of the general population (Kessler et al., 2009). The surveys found a 12-month prevalence of 6.0% - 27.0% for any mental disorder; 3.0%-19.0% for anxiety disorders; 1.1%-9.7% for mood disorders, and 0.2%-6.4% for any substance disorder (Kessler et

al., 2009). Another systematic review with 829 673 participants from 174 studies across 63 countries revealed similar 12-month and lifetime prevalence of common mental disorders, being 17.6% and 29.2% respectively. These disorders included mood disorders, anxiety disorders and substance-related disorders. The study found a 12-month prevalence of 5.4% and a lifetime prevalence of 9.6% for mood disorders; 12-month prevalence of 6.7% and lifetime prevalence of 12.9% for anxiety disorders; and 12-month prevalence of 3.8% and lifetime prevalence of 3.4% for substance related disorders (Steel et al., 2014).

Additionally, a number of studies have focused on LMICs like China, India, Colombia and South Africa and revealed a high prevalence of mental disorders in the general population. For instance, in the World Mental Health Surveys, LMICs were included from the Americas (Colombia and Mexico), Europe (Ukraine), Eastern Mediterranean (Lebanon) and Africa (Nigeria and South Africa). In Colombia and Ukraine, the lifetime prevalence of any mental disorder was 39.1% and 36.1% respectively (Kessler et al., 2009). Furthermore, a systematic review found that the overall median prevalence of common mental disorders in LMICs ranged from 20% to 30%. The review included eleven eligible studies from six countries in Africa (Lesotho and Zimbabwe), Asia (Indonesia and Pakistan) and Latin America (Brazil and Chile) (Patel & Kleinman, 2003). A further systematic review included 31 studies carried out in 37 LMIC settings. The review revealed lifetime prevalence of 22.7% for common mental disorders (Steel et al., 2014).

2.3 Prevalence of mental disorders in Africa

Relatively few studies have looked at the prevalence of common mental disorders in Africa. Two African countries were part of the World Mental Health surveys, namely South Africa and Nigeria. These two studies were the first two nationally representative studies investigating the prevalence of mental health in Africa. First, in South Africa, the South African Stress and Health (SASH) study used three-stage probability sampling. Of the recruited 4351 participants, 30.3% met criteria for a lifetime mental disorder using the WHO Composite International Diagnostic Interview (CIDI 3.0). In the same study, 11.2% of respondents had two mental disorders and 3.5% had three or more disorders. From this study, 15.8% of respondents had been diagnosed with an anxiety disorder, 9.8% a mood disorder and 13.3% were found to have a substance use disorder (Kessler et al., 2009; Stein et al., 2008). Additionally, the overall 12-month prevalence of mental disorder was 16.5% with major depressive

disorder, agoraphobia and alcohol related disorders having 12 month prevalences of 4.9%, 4.8% and 4.5% respectively (Williams et al., 2008). Secondly, in Nigeria, a World Mental Health Survey was done in a sample of 4894 participants. This study used four-stage stratified clustered sampling. The survey used the World Mental Health version of the Composite International Diagnostic Interview (WMH-CIDI) to assess the prevalence of mental disorders. The study found that the lifetime and 12-month prevalence of any mental disorder was 12.1% and 5.8% respectively, with anxiety being the most prevalent mental disorder at lifetime and 12-month prevalence of 5.7% and 4.1% respectively (Gureje et al., 2006).

Other studies investigating the prevalence of mental disorders in Africa have been conducted in countries such as Egypt, Morocco, Zimbabwe, Tanzania and Kenya. Two of the studies, from Egypt and Morocco recruited nationally representative samples, while the other studies utilized convenience sampling. The Egyptian and Moroccan studies used cluster sampling and systematic randomized sampling techniques to select 14 640 and 5498 participants respectively. Both studies used a structured diagnostic clinical interview, the Mini International Neuropsychiatric Interview (MINI). The results revealed a prevalence of 40.1% for current mental disorder in Morocco (Kadri et. al., 2010) and in Egypt, the prevalence for any mental disorder was 16.9% (Ghanem et. al., 2009) with mood disorders being most prevalent, ranging from 6.4% to 26.5% (Kadri et. al., 2010; Ghanem et. al., 2009). The Moroccan data revealed a much higher current prevalence for mental disorder (40.1%) than the World Mental Health Survey both in South Africa (16.5%) and Nigeria (5.8%) (Kadri et. al., 2010; Williams et al., 2008; Gureje et al., 2006).

Sub-Saharan African studies in Tanzania, Kenya and Zimbabwe recruited samples ranging from 172 to 2770 participants to assess the prevalence of mental disorders in communities. While the Kenyan and Zimbabwean investigators used convenience sampling, the study in Tanzania recruited the participants using systematic random sampling. All studies used different diagnostic tools, including the Composite International Diagnostic Interview (CIDI) (Ndetei et al., 2009), the Clinical Interview Schedule – Revised (CIS–R) (Jenkins et al., 2010) and the Present State Examination (PSE) (Patel & Kleinman, 2003). Additional screening tools, such as the Beck Depression Inventory (BDI), the Leeds Scale for the Self-Assessment of Anxiety and Depression (LSAD), the Ndetei-Othieno-Kathuku Scale (NOK), the Mini-Mental State Examination (MMSE) (Ndetei et al., 2009); the Shona Screen for Mental Disorders

(SSMD), the Shona Symptoms Questionnaire (SSQ) (Langhaug et al., 2010; Patel & Kleinman, 2003) and the Psychosis Screening Questionnaire (PSQ), Alcohol Use Disorders Identification Test (AUDIT) (Jenkins et al., 2010) were used in the respective studies. The investigators found that the prevalence of mental disorders ranged between 2.5% and 48% for common mental disorders (Ndeti et al., 2009; Jenkins et al., 2010); 21.4% and 51.7% for depressive disorders; and 11% and 30.8% for anxiety disorders (Langhaug et al., 2010; Patel & Kleinman, 2003; Ndeti et al., 2009).

While nationally representative data for Malawi is lacking, two recent studies conducted in primary health care were identified. In the first study among adult primary health care patients, clinics were randomly selected, and participants were selected through a two-staged cluster randomized sampling. The Self-Reporting Questionnaire (SRQ) was used as well as the Structured Clinical Interview for DSM-IV (SCID). Investigators found that 28.8% of patients were found to have a common mental disorder, including anxiety and depressive disorders, while 19% of the entire sample had depression (Kauye et al., 2014). Another study used a convenience sample of 501 women recruited from a district hospital child health clinic. The participants were interviewed using the SCID. The study found that prevalence of any current depressive episode (minor or major) was 30.4% while the prevalence of current major depression was 13.9% (Stewart et. al., 2014).

Although, the prevalence and burden of mental disorders is high among the general population, it is even higher among specific groups. These vulnerable groups include those with non-communicable conditions like diabetes (Ali et. al., 2006), those with communicable diseases like Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) (Freeman et. al., 2008), those exposed to trauma like abuse, wars, and tribal conflicts (Pham et. al., 2004), and prison populations (Vicens et al., 2011).

2.4 Mental health among prison populations

The prevalence of mental illness is significantly greater among prisoners than in the general population in the community both in HICs and LMICs. Most of the data on the prevalence of mental disorders among prisoners are from a number of studies done in HICs (Lorito et al., 2018; Fazel et al., 2012; Fazel et al., 2016 & Prins et al., 2014) and these included a range of disorders in their investigations, focusing on any mental disorder, mood disorders and anxiety disorders. These are discussed below.

A few studies have recorded the prevalence of any mental disorder in the population studied. This encompassed all Axis 1 disorders, according to the DSM-IV classification, as well as personality disorders. However, findings on any mental disorder vary considerably between studies with the reported prevalence ranging from 19% to 71.4% (Morgan et al., 2012; Trestman et al., 2007; Gonzalenz et al., 2014; Lorito et al., 2018; Baillargeon et al., 2009). A systematic review of nine studies which compared the prevalence between the general population and the prison population, found a higher prevalence of 38.4% for any mental disorders in prisoners compared to the 15% found in the general population (Lorito et al., 2018). This is supplemented by a comparison study conducted in Australia (8168 participants in the general population and 916 prison inmates) where the current prevalence of any mental disorders was 31% in the general population and 80% among prison inmates (Butler et al., 2006). Another high prevalence of 71.4% for any mental disorder was found in a large retrospective cohort study of 79211 prisoners done in USA in which data were extracted from the electronic health records (Baillargeon et al., 2009). Literature has also shown that the prevalence of mental disorders is often higher in female prisoners than in male prisoners. For instance, in a Brazilian study of 1809 prisoners, which used a stratified random sampling technique, the investigators reported that females had a higher prevalence of lifetime disorders than males (68.9%; 39.2%) as well as current mental disorders (56% , 22%) (Andreoli et al., 2014).

Research has shown that prevalence of mood disorders is usually lower in general populations, with a prevalence of 20.8% (Kessler et al., 2007) compared to 23% in prison populations (Cramer et al., 2014). Studies conducted in Norway, Brazil and Australia found that 18-22% of male prisoners had a mood disorder. The prevalence in males was found to be lower than the 27-40% prevalence among female prisoners (Cramer et al., 2014; Andreoli et al., 2014; Butler et al., 2005). Within these mood disorders, a number of reviews have reported prevalences of depression among prisoners which are higher than the community. For instance, lifetime prevalence of depressive disorders according to different reviews range between 6.7% to 10.8% in the community (Waraich et al., 2004; Witchen et al., 2011 & Lim et al., 2018) and this almost triples among prisoners with studies reporting the prevalence ranges of 21.0% to 42.0% (Lorito et al., 2018; Prins et al., 2014; Cramer et al., 2014).

Separated by a decade, two large-scale systematic reviews were conducted by Fazel (2002 & 2012) focusing on prevalence of mental disorders among prison inmates worldwide. The first one done in 2002

on 23 000 prisoners showed that 10% of males and 12% of females had depression (Fazel et al., 2002). The second one done in 2012 analyzed data on 33588 prisoners in 24 countries and reported similar prevalence of major depressive disorder of 10.2% in males and 14.1% in females (Fazel et al., 2012). A number of reviews have shown that females have higher prevalence (12% - 25%) for depression than their 10% - 21% in male counter-parts (Fazel et al., 2016; Fazel et al., 2002; Fazel et al., 2012; Cramer et al., 2014). Conflicting data arose from a national survey on depression which indicated a prevalence of 52.3% from the general population in HICs which is even higher than the prison population (42%) (Bromet et al., 2011). The highest prevalence of depression was documented in a nationally representative study in USA from 116 prisons (n=79 211) which reported a prevalence of 61.3% (Baillargeon et al., 2009). Fewer studies report the prevalence of bipolar disorders for both the community and the prison populations, but available data show ranges of 1% - 1.6% for the general population (Lorito et al., 2018; Cramer et al., 2014; Clemente et al., 2015) and 4.5% - 16.1% for prison inmates (Lorito et al., 2018; Prins et al., 2014; Cramer et al., 2014).

Anxiety disorders have been widely studied with systematic reviews recording prevalence ranges of 14.2% - 56.3% among prisoners (Lorito et al., 2018; Cramer et al., 2014). A number of studies focused more on current prevalence which tends to be higher in female prisoners with a prevalence ranging from 27.7% - 56.0%, while in male prisoners the ranges are 13.6% - 34.0% respectively (Andreoli et al., 2014; Butler et al., 2003). The reported lifetime prevalence for anxiety disorders was found in a study (n=1809) conducted at Sao Paulo in Brazil that used stratified random sampling. The prevalence came out to be 35.3% in males and 50% in females (Andreoli et al., 2014).

2.4.1 Prevalence of mental disorders among prisoners in low and middle-income countries

The majority of studies in LMICs used structured, validated tools such as the Structured Clinical Interview for Diagnostic and Statistical Manual (DSM-IV) Axis I disorders (SCID) (Assadi et al., 2006) and the MINI (Naidoo & Mkize, 2012; Abdulmalik et al., 2014), while the remaining studies used screening tools like the General Health Questionnaire (GHQ) (Abdulmalik et al., 2014). Most studies that have documented these prevalences are from Iran, India, Kenya, South Africa and Nigeria. While the majority of these studies included male and female prisoners in their samples, the samples were predominantly male (97.5%, 95.9%, 98.7%) (Kumar & Daria, 2013; Naidoo & Mkize, 2012; Abdulmalik et al., 2014).

Few studies in LMICs investigated lifetime mood disorders among prisoners, with one study reporting a high lifetime mood disorder prevalence of 48.7% (Assadi et al., 2006). Most studies reported a high current prevalence which ranged from 10.4% to 30.6% (Kumar & Daria, 2013; Assadi et al., 2006; Naidoo & Mkize, 2012; Abdulmalik et al., 2014). Major depressive disorder was the commonest mood disorder diagnosed among prisoners. A review conducted in prison populations shows a wide gap in the prevalence of depression between LMICs at 22.5% and HICs at 10.0% (Fazel et al., 2012). Studies conducted in Iran, India, South Africa and Nigeria found the current prevalence to range from 10.4% to 29.1% (Assadi et al., 2006; Kumar & Daria, 2013; Naidoo & Mkize, 2012; Abdulmalik et al., 2014). The highest prevalence of depressive disorders was found among 332 prison inmates in Ethiopia. In this study, participants were selected by a systematic random sampling technique and the prevalence was 41.9% (Abdu et al., 2018). Reports from India and Iran showed prevalences ranging between of 8.3%, and 7.7% for anxiety disorders (Kumar & Daria, 2013; Assadi et al., 2006; Mundt et al., 2013). Generalized anxiety disorders rated higher in all studies with ranges between 5.7% and 36.1% (Kumar & Daria, 2013; Assadi et al., 2006; Dadi et al., 2016). Other types like specific phobia, post-traumatic stress disorder, social phobia and obsessive–compulsive disorder ranged from 0.3% to 2.5% (Assadi et al., 2006; Kumar & Daria, 2013). The highest lifetime PTSD prevalence in female prisoners was 40.4% (Baranyi et al., 2018).

2.4.2 Summary on global prevalence of mental disorders among prisoners

Overall, the lifetime and current prevalence of mental disorders among prisoners in both HIC and LMIC ranged from 3.3% to 88.0% (Cramer et al., 2014; Assadi et al., 2006). Certain disorders were highly prevalent, such as substance use disorders ranging from 10.0% to 78.0% (Fazel et al., 2006; Assadi et al., 2006), mood disorders in general from 15.4% to 48.7% (Morgan et al., 2012; Assadi et al., 2006), depressive disorders from 6.1% to 42.0% (Mundt et al., 2013; Abdu et al., 2018) and anxiety disorders from 14.2% to 56.3% (Lorito et al., 2018). Some of the reasons for the variation would be settings where the studies took place. For instance, some studies were conducted in well-resourced prisons while others were done in prisons with minimal facilities and services. Cultural differences in disease experience, expression of symptoms and emotions associated with the disease could also cause variations in the reported data (Wagner et al., 2014). Additionally, some studies focused on sentenced prisoners (Kinyanjui & Atwoli, 2013; Butler et al., 2005), while others focused on unconvicted prisoners (Abdulmalik et al., 2014; Butler et al., 2005), which may have influenced the results.

Sampling strategies varied across the studies with most studies using stratified random sampling (Assadi et al., 2006; Butler et al 2005; Abdulmalik et al.,2014; Naidoo & Mkize, 2012; Sepehrmanesh et al., 2014) and simple random sampling (Lynch et al., 2014; Ghanem et. al., 2009; Kinyanjui & Atwoli, 2013; Kumar & Daria, 2013). Few studies used cluster randomized sampling (Kauye et al., 2014; Kadri et. al., 2010), systematic random sampling method (Abdu et al., 2018) and multi-staged stratified clustered sampling (Gureje et al., 2006). Some studies used structured and validated tools like the Structured Clinical Interview for Diagnostic and Statistical Manual (DSM-IV) Axis I disorders (SCID) (Vicens et al., 2011; Assadi et al., 2006), Composite International Diagnostic Interview (CIDI) (Lynch et al., 2014), while others employed the use of screening tools such as the General Health Questionnaire (GHQ) (Abdulmalik et al.,2014). Thus, a number of factors could account for the variation in prevalence across studies.

At the present time, no study has focused on the prevalence of depression and anxiety among inmates in Malawi. Therefore, this study aims to address this gap by investigating common mental disorders in male prisoners at Thyolo prison, using validated screening instruments which are capable of determining probable symptoms of depression and anxiety disorders in research and clinical settings.

2.5 Factors associated with mental disorders among prison inmates

This section begins by briefly describing studies conducted in HICs that have investigated the factors associated with mental disorders among prison inmates. It will then focus specifically on studies conducted in LMICs, particularly in African prison populations.

Nine studies identified from HICs reported various factors associated with mental disorders among prison inmates. The studies show that sociodemographic factors such as age, ethnicity, educational status and unemployment before imprisonment were related to mental disorders. Age has been associated with mental disorders among prison inmates in HIC. For example, in one study the results showed that older age (50 years and above) was a predictor for anxiety disorders, while the age group from 30 to 39 years was a predictor for substance-related disorders. The results also showed that having any mental disorder was associated with younger age (common in ages from 20 to 29 years), although this was not statistically significant (AOR 1.92 95% CI: 0.65-5.6) (Zabala-Baños et al., 2016). In another study, the results showed that younger age was a predictor for self-harm. On the other hand,

being older 40 -49 years (AOR 6.43 95% CI: 2.15-19.2) was identified as a predictor for completed suicide (Hawton et al., 2014). Another predictor of suicide identified in a study conducted among prison inmates in England and Wales was non-white ethnicity (AOR 2.56 95% CI: 1.22-5.37) (Humber et al., 2013). Regarding education status, it was found that having no or low education status (AOR 2.27,95% CI: 0.42-12.3) was linked to some mental disorders such as anxiety and substance-related disorders (Zabala-Baños et al., 2016). Additionally, it was found that the probability of having any mental disorder was associated with unemployment before imprisonment, although this association was not statistically significant (AOR 1.11, 95% CI: 0.33-3.8) (Zabala-Baños et al., 2016).

Substance abuse and previous mental disorder diagnoses have also been associated with mental disorders in a number of prison studies carried out in HICs. For instance, a study was conducted in a sample of 2484 male prisoners from eight prisons in Spain. The results revealed that substance use before imprisonment (AOR 6.90; 95% CI: 5.51-8.65) was one of the factors associated with mental disorders among prison inmates (Caravaca-Sánchez et al., 2015). Having previous mental disorder diagnoses (AOR 2.38 95% CI: 1.24-4.54) was identified as a risk factor of completed suicide among prison inmates (Humber et al., 2013).

Thirteen studies were found, which investigated factors associated with mental disorders among inmates in LMICs. Some of the factors including gender, history of mental disorders, substance abuse, type of offence, dissatisfaction with prison services, family support, duration of sentence, history of trauma, and repeated admission to prison were found to be associated with mental disorders among prison inmates. In these studies, there were conflicting reports regarding gender associations with mental disorder diagnoses. One study in India found that male gender (OR 20.628 95% CI: 2.98-142.66) was associated with mental disorders, although the confidence intervals were broad (Dutta et al., 2014). Another study identified female gender (AOR 3.27 95% CI: 1.05-10.22) as being associated with mental disorders among prisoners (Ali et al., 2016).

Previous mental disorder diagnoses, psychological trauma, as well as previous substance abuse, also emerged as factors associated with mental disorders among prisoners with adjusted odds ratios of 2.0 (95% CI:1.5-3.0) and 7.30 (95% CI: 2.96-18.01) (Ali et al., 2016; El-Gilany et al., 2016). One study found that substance abuse before imprisonment (AOR 2.7 95% CI 2.0-3.6) was associated with mental

disorders (El-Gilany et al., 2016), while another study revealed that cigarette smoking (AOR 2.6, 95% CI 1.08, 6.6) had a significant association with anxiety disorders (Dadi et al., 2016). Regarding history of trauma, one study revealed that a history of psychological trauma (AOR 2.02 95% CI: 1.23 - 3.37) was significantly associated with mental disorders (Ali et al., 2016).

A few studies in LMIC investigated other factors associated with mental disorders in prisoners such as duration of sentence, repeated admission to prison, type of offence, dissatisfaction with prison services, and family support. For example, duration of sentence of more than 10 years (OR 9.26 95% CI 3.03-28.30), was found to predict mental disorder symptoms (Gemeda, 2014). Additionally, repeated admission to prison was identified as a risk factor for mental disorder (AOR 2.6 95% CI: 1.1-6.1) (El-Gilany et al., 2016). The type of offence has also been identified as one of the factors associated with mental disorders among prison inmates. For instance, sex offences (AOR 2.41 95% CI: 1.14-5.11) were associated with a substance-related disorder; theft, abduction and extortion (AOR 2.29 95% CI: 0.97-5.40) with borderline personality disorder; planned robbery and killings (AOR 2.69 95% CI: 1.11-6.50) were associated with alcohol use disorder (Pondé et al., 2014). Furthermore, dissatisfaction with prison services (AOR 3.01 95% CI: 0.38-6.51) was a variable which reflected association with mental distress, although this was not statistically significant (Dachew et al., 2015). Finally, it was found that prison inmates who had weak family support (AOR 2.46 95% CI: 1.32 - 4.57) were more likely to suffer from depression than those who had strong family support (Constantino et al., 2016).

In summary, it has been noted that a number of studies have found factors associated with mental disorders among prison inmates. The studies show that sociodemographic factors such as age, gender, educational status, and unemployment before imprisonment were related to mental disorders. However, conflicting findings were noted regarding age (Hawton et al., 2014; Zabala-Baños et al., 2016) and gender (Dutta et al., 2014; Ali et al., 2016). Additionally, history of mental illness (Humber et al., 2013; Ali et al., 2016; El-Gilany et al., 2016), substance abuse (Pondé et al., 2014; Dadi et al., 2016; El-Gilany et al., 2016) and no or low education status (Zabala-Baños et al., 2016; Gemeda, 2014) were found to be associated with mental disorders among inmates. Further factors such as unemployment before imprisonment, family support, non-white ethnicity, type of offence, dissatisfaction with prison services, duration of sentence, history of trauma, and repeated admission to prison (Zabala-Baños et al.,

2016; Constantino et al., 2016; Ponde et al., 2014; Dachew et al., 2015; Gameda, 2014; Ali et al., 2016; El-Gilany et al., 2016) were also found to be associated with mental disorders among prison inmates.

2.6 Implications of untreated mental disorders among prison populations

The high prevalence of mental disorders in prisoners has a number of implications for their time in prison as well as their reintegration into communities. The affected prisoners do not cope well both in prison and on transition from prison to the community (Baillargeon et al., 2010). Some findings suggest that these individuals have poor reasoning and judgement which places them at risk of substance abuse, and may result in them committing different types of offences (Allnutt et al., 2008). Another study showed that even the minor offences committed by these prisoners are magnified and inappropriately criminalized which result in longer prison sentences (Lovell et al., 2002). Duration of imprisonment by these prisoners with severe mental disorder vary between 17 days and four months longer than other prisoners without mental disorder (McNiel et al., 2005). In addition, those with untreated mental disorder are vulnerable to have repeated admissions into prison more than their counterparts without mental disorder (Lynch et al., 2012; Greenberg & Rosenheck, 2008). Furthermore, these prisoners with untreated mental health problems are more likely to be homeless and stigmatized (McNiel et al., 2005; Greenberg & Rosenheck, 2008). It is important that health services be made available within prisons in order to address complex health needs of prisoners including mental health, similar to those provided in the community (Warrilow, 2012). Such basic interventions could facilitate an ex-prisoner's reintegration into their community and prevent further imprisonment (Baillargeon et al., 2010). Thus, the implications of untreated mental disorders in this vulnerable population affect these individuals and communities. In order to address these issues, it is important to conduct research to quantify the problem, identify associated factors and advocate for services.

While studies reporting factors associated with mental disorders among prison inmates were identified from HICs and LMICs, very little is known about Malawian prisons and how this will compare to findings elsewhere. The current study seeks to investigate sociodemographic, mental health and prison factors which may be associated with mental disorder symptoms among prison inmates in Malawi.

CHAPTER 3: METHODS

3.1 Study design

The study used a quantitative cross-sectional approach. This approach was preferred as it is the best way to determine prevalence and is useful at identifying associations (Mann, 2003), hence the most appropriate method for the objectives of the study.

3.2 Setting

The study was conducted at Thyolo prison, the only prison in Thyolo district. Thyolo district is one of the southernmost districts in Malawi, situated on the Shire highlands. It is bordered by Blantyre district to the north, Nsanje district to the south, and Mulanje district to the east, leading to another border with Mozambique. The district covers an area of 1715 km² and in January 2016 census, the population was 630182. The prison used to admit adult male and female prisoners from within the district with different types of offenses, but currently only accommodates male prisoners. The prison was intended to house 200 inmates (180 males and 20 females) but now holds approximately 400 inmates. The prison has a total of 23 prison staff, including 2 clinicians. This shows that there is understaffing taking into consideration the recommended warden to inmate ratio is one to five (Malawi, 2008).

3.3 Study population

Male prisoners aged 18 years and above were recruited as participants. Thyolo prison had a total number of 378 male prison inmates at the time the study was conducted. When this proposal was developed, it was our intention to include both male and female inmates. However, in April 2017, due to overcrowding, female inmates were moved to Chichiri prison in Blantyre district.

3.4 Inclusion and exclusion criteria

The inclusion criteria were those who gave their consent, and the study included prisoners serving different terms of prison sentence as well as those awaiting trial. The exclusion criteria were inmates who declined to give consent to participate in the study, who were not able to understand what is being asked of them and those who could pose a risk to the interviewer, as determined by the prison officials. During this study, no prisoners met the exclusion criteria.

3.5 Sample size

A sample size calculation was conducted to estimate the prevalence (P) of probable mental disorder with an error margin of ± 0.05 and a P at 0.50 (as we did not have an indication of the prevalence of probable mental disorders among prisoners in Malawi). The sample size was calculated by using the formula below (Israel, 1992).

$$n = \frac{Z^2_{1-\alpha/2} P (1-P)}{e^2}$$

Where:

n = number to sample

$Z^2 = (1.96)^2$ for 95% confidence interval ($\alpha = 0.05$)

P = “best guess” for prevalence (Base line level of the selected indicator). This was the anticipated proportion of inmates with a probable mental disorder.

1-P = Anticipated proportion of participants with no mental disorder

e = maximum tolerable error for the prevalence estimate (0.05)

The initial estimated sample size was:

$$n = \frac{1.96^2 * 0.5 (1-0.5)}{0.05 * 0.05} = 385$$

The calculated sample size for the study was 385.

3.6 Data collection

Although the required sample size for the study was 385, Thyolo prison had 378 male prison inmates. Therefore, all the prison inmates were approached to participate in the study. In order to limit the potential of prisoners feeling pressured to participate in the study, prison authorities allowed the MPhil student to address the prisoners in a group. The rationale for the study was explained in detail as well as the objectives of the study. A particular focus on informed consent was discussed to ensure comprehensive understanding that their participation would not be compulsory; therefore, they could decide not to participate at any point during the process. They were also informed that there would be no negative consequences if they refused to participate or if they agreed and then wanted to withdraw from the study. Then the prisoners were asked to make individual appointments with the MPhil student in case they wanted more information or clarification regarding their participation so that she could describe the research again in detail and then decide whether they wanted to participate in the study.

They were given time to consider participation. None came to seek individual clarification on research. All prisoners expressed willingness to participate in the study. Before the beginning of the individual interview, each participant was reminded whether or not they were willing to participate in the study to avoid coercion. During the interviews, trained research assistants described the study in detail to ensure the process of informed consent was clear. After obtaining consent (Appendix I), the interview commenced which lasted between thirty and forty five minutes. After finishing the interview, each participant was thanked for participating in the study. A gift-pack containing a soft drink and biscuits was provided for each participant as a token of appreciation for participating in the research process.

Even though the protocol did not include questions on suicidality, any participant who mentioned any suicidal thoughts, intentions or behaviours during the interview was further screened using Columbia Suicide Severity Rating Scale (C-SSRS) (see appendix VII), which is a tool used to assess the severity of suicidal ideation and behaviour as well as its intensity both in clinical and research settings. Anyone identified as low risk for suicide was referred to a mental health counselor while those identified as high risk for suicide were immediately referred to a mental health clinic at Thyolo District hospital, about 150 metres from the prison who then managed them according to the hospital policy. This extra step was put in place for participant's safety. Six participants mentioned suicidal thoughts or behaviours during the interview, and were screened using the Columbia Suicide Severity Rating Scale (C-SSRS). The C-SSRS has been found to be reliable and valid in the identification of suicide risk in several research studies (Posner et al., 2008). Regarding suicidality, if the participant answered YES to either questions 4, 5, or 6, they were considered at high risk for suicide. Although none of the six participants were identified as high risk for suicide with this measure, they were referred to the study counselor, who was based in the antiretroviral therapy (ART) clinic at Thyolo District Hospital for an appointment and counselling. Five prisoners had completed their counseling sessions within six weeks but the other one continued with the sessions for a further 2 months. None of these participants were referred for other services apart from counseling.

Eight participants became distressed during the interview, and those prisoners who scored 26-63 using BAI tool (indicating probable severe anxiety) and scored 24-60 on the CES-D (indicating probable severe depression), were referred immediately to the mental health staff at Thyolo District Hospital, who

then managed them according to the hospital policy. The hospital usually has one clinician and one mental health nurse on duty, and these were present throughout the data collection period.

3.7 Measures

The study survey design was based on the evidence identified in the literature review for this dissertation, particularly the evidence from LMICs. All the measures were administered by the MPhil student or a research assistant (Appendices III-VII). The first part of the questionnaire assessed socio-demographic factors, which included age, marital status, employment status and educational status. Other questions were related to the prisoners' previous and current involvement with the prison services. The prisoners were asked if they had been imprisoned before this recent admission as a juvenile or adult; the number of times they had been to prison; and the length of their full sentence.

3.7.1 Psychosocial factors

The prison inmates were also asked if they received support from family members or friends through visits; and whether or not they received financial/material support from them. Additionally, they were asked if they had ever been diagnosed or treated for any of the following mental disorders at any point during their lifetime: psychotic disorder, depression, anxiety disorder, bipolar (mania), personality disorder, eating disorder or substance-related disorder.

Two measures were used to ascertain the prevalence of symptoms of common mental disorders. These are validated screening instruments which are capable of determining symptoms of mental disorders in research and clinical settings. These measures were as follows:

The Beck Anxiety Inventory (BAI) was used to measure symptoms of anxiety. It is a screening instrument that consists of 21 items exploring symptoms of anxiety. The total score is calculated by finding the sum of the 21 items. Score of 0 – 7 indicates probable minimal anxiety, 8-15 indicates probable mild anxiety, 16-25 indicates probable moderate anxiety, while 26-63 indicates probable severe levels of anxiety (Beck & Steer, 1990). It has been validated for use in many developing countries including in sub-Saharan Africa (Sweetland et al., 2014). However, it had not been used in Malawi. Cronbach's α for the BAI was 0.918.

The Center for Epidemiological Studies Depression Scale (CES-D) is a 20-item tool which was used to measure symptoms associated with depression. It is a screening tool that has been validated for use when conducting research in household surveys and in psychiatric settings. CES-D uses a 4-point Likert scale, ranging from “rarely or none of the time” scoring 0 to “most or all of the times” scoring 3. After summing up the scores, if a person scores ≥ 16 on the CES-D, they are regarded as being at risk for a diagnosis of depression (Radloff, 1977). Although it has not been used in Malawi, it has been validated and found to be effective across different subgroups of general populations including populations in sub Saharan Africa (Atkins et al., 2014; Hamad et al., 2008). Cronbach’s α for CES-D was 0.734.

The Trauma History Questionnaire (THQ) was used to identify any exposure to psychological trauma at any point in the participant’s lifetime (Hooper et al., 2011). Respondents indicated the number of times they experienced each of several potentially traumatic events (e.g., accidents, sexual assaults, physical assaults). The tool was scored by adding the number of types of traumatic events endorsed by each participant. The THQ has not been used in Malawi, but has been validated, and used in refugee camps, disaster-stricken areas, in studies conducted in both community (Miranda et al., 2003) and clinical settings (Mueser et al 2001; Farley et al., 2004; Bonne et al., 2001; Golier et al., 2003), in rural areas (Lilly et al., 2009), in non-English speaking countries like Brazil (Fizman et al., 2005) as well as in diverse cultures (Jobson & Kearney, 2008). The test- retest reliability ranges from moderate to high (Mueser et al 2001).

3.8 Translation of the Tools

For the purpose of this study, all questionnaires and tools were translated from English to the local language, Chichewa and back translated to English by three bilingual members of the research team all of which have at least an undergraduate degree. This was done to check their consistency and to ensure equivalence of meaning. The translated questionnaires were studied by the other two members of the research team who were conversant with both languages. Then a consensus meeting was held to resolve the items where there was a wide disparity in the two back-translations. Feedback from this process indicated that the Chichewa version differed slightly from the original English questionnaires in terms of content and meaning. After all issues surrounding translation and back-translation were resolved, the final Chichewa version differed negligibly from the English version which almost had equivalence of meaning. Finally, the questionnaires were made available to participants in Chichewa.

3.9 Research assistant training

Data collection was done by the MPhil candidate and five research assistants in February and March 2018. These were qualified practicing nurses who were well trained by the MPhil candidate, who is a qualified mental health nurse and nursing college lecturer. Training was conducted for one day on the questionnaires and the processes of data collection. This was followed the next day by research ethics training, including consent of the prisoner to be interviewed, permission to have notes taken during the interviews and confidentiality of participant's information. The training also included sessions about security and safety of the interviewers in the prison setting. Afterwards, the research assistants role-played participant interviews with the MPhil student. The research assistants took turns playing the role of a client with mental disorder while others acted as those collecting data. This was followed by piloting the questionnaire with the first 5 prison inmates from Thyolo Prison. During the piloting process, the research team discussed what was going well and ironed out the problem areas. This piloting process assisted in identifying practical problems with research processes, e.g. errors in data entry. These were fixed before conducting the actual research to ensure consistency between the collection of data and high-quality data. There were no changes made to the study instruments following piloting and the data were included in the final analysis. There were few problems with variation in data quality as the screening tools did not require clinical judgement to conduct the interviews. The MPhil student had a Skype call with the supervisors Prof. Katherine Sorsdahl and Dr. Claire van der Westhuizen on the first day of data collection to oversee the data collection process. They were then available for scheduled Skype calls during data collection for advice. The research assistants were supervised daily by the MPhil student. Data collection took three weeks.

3.10 Data management

Once the research assistants collected data from the respondents, the questionnaires were handed to the MPhil student for verification to check if some questions had been skipped by mistake. She was able to enquire and discuss problem areas with the research assistants, if there were any. Upon verification, the data were then entered into the database.

3.11 Data analysis

Data was captured using the Statistical Package for Social Sciences (SPSS) version 22.0. Frequency distributions and descriptive statistics were conducted for categorical and continuous variables. Logistic regression was used to examine the unadjusted and adjusted associations of the independent variables with (i) probable depression as measured by the CESD with a score of 16 or above and (ii) probable anxiety as measured by Beck Anxiety Inventory (BAI) with a cut-off score of 16 or above for clinical relevance. Bivariate logistic regression analyses were used to examine the unadjusted associations between the independent variables of age, marital status, employment status, educational status, previous mental disorder diagnosis prior to imprisonment, support, history of childhood trauma, previous imprisonment, and duration of imprisonment and the dependent variable mental illness among prison inmates. The age variable and those variables which were significant at the $p < 0.05$ level in the unadjusted analyses were then entered into the multivariable logistic regression models. Independent variables were selected based on evidence from the literature review conducted for this dissertation.

3.12 Ethical considerations

The research proposal was submitted to the University of Cape Town (UCT) Human Research Ethics Committee (See Appendix XIV), before being submitted to National Health Sciences Research Committee (NHSRC) (See Appendix XV) for review and approval to ensure protection of the study participants. The Director of Thyolo prison had given permission for the study to be conducted at the institution (See letter in appendix XIII).

3.12.1 Informed consent

The prison authorities had given specific permission for the MPhil student to address the prisoners in a group which could result in prisoners feeling less pressure to participate. The MPhil student talked to the group about the research. The prisoners were asked to listen attentively to the information given about the research for them to make a voluntary and informed choice about participation in the research.

As described in the data collection section, the prisoners were fully informed about the purpose of the study and the whole process of interviewing was explained in detail and in simple local Chichewa language for them to understand the process according to their educational levels. They were also told

that their participation would not be compulsory; therefore they could decide not to participate at any point during the process. They were also informed that there were no negative consequences if they refused to participate or decided to withdraw from the study. They were given time to consider participation. If they needed more time, they were given an appointment for the following day to inform the research staff of their decision. After agreeing to participate in the study, written informed consent was obtained from each participant. If a participant could not read a consent form due to illiteracy, it was read to the participant in the presence of a witness identified by the participant, and this was then followed by signature or thumb print from the participant along with the witness.

3.12.2 Privacy and confidentiality

The whole consent and interview process took place in a quiet and relaxed setting. However, privacy was more challenging in the prison setting. Since the interviews were taking place in a room with the interviewer closest to the door (for the interviewer's safety), a prison warden was positioned in a place outside the room where he would have visual access to the interviewer and the participant, BUT would not have audio access to the conversation or the interview content. This means that the information was confidential, but the interview process was partially private. Throughout the research process, interviewers would record code numbers rather than participants' names. Consent forms were kept separately from questionnaires and kept in a locked cupboard. To avoid easy accessibility to the documents, the laptop used for the study had a password which was only accessed by the MPhil student. The MPhil student and research assistants did not disclose any participant information to the prison officials. The prisoners were made aware before signing the consent form that if a prison inmate was found to be suicidal or a danger to others, officials would be informed, and the participant would be referred for the safety of himself and others.

3.12.3 Benefits for participation

There were no monetary benefits for participating in the study. However, those with undiagnosed mental disorder were referred to a mental health service centre at Thyolo District Hospital. A gift-pack containing a soft drink and biscuits was provided to each participant at the end of the interviews to thank them for their time.

CHAPTER 4: RESULTS

4.1 Overview of the chapter

The first section of the chapter focuses on describing the sociodemographic information and prison-related characteristics of the sample. Additionally, descriptive statistics are presented regarding lifetime mental illness, support and psychological trauma. Thereafter, results are reported for the prevalence of clinically significant depression and anxiety symptoms. The final sections of the chapter describe the results of three logistic regression models predicting (i) clinically significant depression symptoms (ii) clinically significant anxiety symptoms and (iii) co-morbidity (clinically significant both depression and anxiety symptoms).

4.2 Socio-demographic and prison-related characteristics of the sample

Thyolo prison accommodated 378 male prisoners at the time the study was conducted, who when approached to participate in the study, agreed and provided informed consent. Hence, this gives a 100% response rate. The mean age of the respondents was 29.5 (SD \pm 9.3) years. The majority of the sample were married (66.9%) and 67.5% of the participants had primary level education only. Less than half of the sample (40.5%) had been employed before imprisonment. The mean duration of imprisonment of the respondents was 6.0 (SD \pm 3.2) years and more than half 294 (77.8%) of the respondents reported no history of previous imprisonment. See Table 1 below.

Table 1. Socio-demographic and prison-related characteristics of respondents

Characteristics	Frequency n (%)
Age (mean, sd)	29.5 (9.3)
Level of education	
None	26 (6.9)
Primary	255 (67.5)
Secondary	97 (25.7)
Marital status	
Single	99 (26.2%)
Married	253 (66.9%)
Divorced	26 (6.9%)
Employment status before prison	
Yes	153 (40.5%)
No	225 (59.5%)
Previous imprisonment	
Yes	84 (22.2%)

No	294 (77.8%)
Duration of imprisonment	
Less than 5 years	157 (41.5)
At least 5 years	221 (58.5)

4.3 Mental health characteristics of prisoners

Forty two (11.1%) of the prisoners had a previous mental disorder diagnosis prior to imprisonment. The majority 231 (61.1%) reported to have received support expressed either through provision of finances/materials or psychological support when visited by friends and relatives. Among study participants, 352 (93.1%) reported two or more traumatic life events. The mean number of traumatic events experienced was 6.0 (SD±3), with seeing someone seriously injured or killed being the most common traumatic event experienced by 252 prisoners and the least common being exposure to dangerous chemicals, experienced by only 36 prisoners. See Table 2 below.

Table 2. Mental health characteristics of prisoners

Characteristics	Frequency n (%)
Previous mental disorder diagnosis	
Yes	42 (11.1)
No	336 (88.9)
Support	
Yes	243 (64.3)
No	135 (35.7)
Traumatic Events	
One only	26 (6.9)
At least two	352 (93.1)
Type of traumatic event	
Robbery	189 (50)
Serious accident (at work, in a car, etc)	196 (51.9)
Natural disasters and Man-made disasters	79 (20.9)
Exposure to dangerous chemicals	36 (9.5)
Serious injury/illness, injury 2 ^o to attack with a weapon, beaten	112 (29.6)
Fear of being killed or seriously injured	185 (48.9)
Seeing someone seriously injured/ killed/ dead bodies	252 (66.7)
Death of romantic partner/child/family member/close friend	86 (22.8)
News of a serious injury, life-threatening illness or unexpected death of someone close to you	195 (51.6)
Sexual assault	40 (10.6)

4.4 Prevalence of possible depression and anxiety among prison inmates

Out of the 378 respondents, 274 (72.5%) were positive for possible depression on CES-D scale, scoring 16 or above. Scores ranged from 2 to 41, with a median score of 21. Using the Beck Anxiety Inventory (BAI), with scoring ranges of 0-7 (minimal), 8-15 (mild), 16-25 (moderate) and 26-63 (severe), 141 (37.3%) had possible minimal anxiety, 132 (34.9%) had possible mild anxiety, 59 (15.6%) had possible moderate anxiety, 46 (12.2%) possible severe anxiety. Additionally, 237 (62.7%) were categorized as having a possible anxiety disorder, i.e. mild, moderate or severe anxiety symptoms. For the BAI, scores ranged from 0 to 47, with a median score of 10. Of the whole sample, 278 respondents scored 16 or above on the CES-D, and 105 scored above 16 on the BAI indicating possible moderate and severe anxiety which is of clinical relevance. It is evident from the results that 95 (25.1%) of the sample had both possible depression and anxiety. See Table 3.

Table 3. Prevalence of possible depression, anxiety and co-morbidity among prison inmates

Psychiatric Morbidity	Frequency (%)
Possible anxiety disorder (mild/moderate/severe symptoms)	237 (62.7)
Minimal	141 (37.3)
Mild	132 (34.9)
Moderate	59 (15.6)
Severe	46 (12.2)
Depression	
Negative	100 (26.5)
Positive	278 (73.5)
Co-morbidity (possible depression and anxiety)	95 (25.1)

4.5 Predictors of possible depression

Table 4 presents the unadjusted and adjusted associations of predictors of possible depression. After adjusting for the effects of the other variables in the model, the results of multiple logistic regression indicate that inmates who reported no support (AOR 5.19 95% CI: 2.66-10.14) and having two or more traumatic events (AOR 4.30 95% CI: 1.65-11.23) were more likely to screen at risk for possible depression, while those inmates who were divorced were less likely to screen at risk for possible depression compared to those inmates who were single (AOR 0.12 95% CI: 0.04-0.35).

Based on the results, prison inmates who do not get support have high chances of being depressed as compared to those who get support in the form of finances/materials and psychological support when visited by friends and relatives. The odds of being depressed for prison inmates who do not get support is 5.19 times that of prison inmates who get social support. Furthermore, prison inmates who have at least two traumatic events have increased odds of being depressed, unlike those with at most one traumatic event. The odds of being depressed for prison inmates who have at least two traumatic events is 4.30 times that of those with at most one traumatic event. Lastly, it is evident that the odds of prison inmates who are divorced having possible depression are 88% less than those who are single. See Table 4 below.

Table 4. Logistic regression of associated risk factors with possible depression of prison inmates

Risk Factor	Unadjusted		Adjusted	
	OR [95% CI]	P-Value	OR [95% CI]	P-Value
Age	0.99 (0.97-1.01)	0.35	0.99 (0.97-1.02)	0.54
Education Level				
No Formal	1.00	-	1.00	
Primary	1.11 (0.46-2.66)	0.82	0.86 (0.32-2.27)	0.76
Secondary and above	1.83 (0.69-4.82)	0.23	1.30 (0.44-3.86)	0.64
Marital Status				
Single	1.00		1.00	
Married	0.85 (0.48-1.49)	0.56	0.98 (0.50-1.90)	0.95
Divorced	0.12 (0.05-0.31)	0.00	0.12 (0.04-0.35)	0.00*
Employment before Prison				
Yes	1.00		1.00	
No	1.15 (0.73-1.83)	0.55	1.26 (0.75-2.12)	0.39
Support				
Yes	1.00		1.00	
No	4.73 (2.57-8.74)	0.00	5.19 (2.66-10.14)	<0.00*
Mental Disorder				
Yes	2.33 (0.95-5.71)	0.06	-	-
No	1.00		-	-
Traumatic Events				
At most one traumatic event	1.00		1.00	
At least two Traumatic events	4.28 (1.90-9.68)	<0.00	4.30 (1.65-11.23)	0.00*

OR=Odds Ratio; CI=Confidence Interval, *=statistically significant

4.6 Predictors of possible anxiety

Investigations into the unadjusted and adjusted associations of predictors of possible anxiety among prison inmates are displayed in Table 5. Possible anxiety for this analysis was found by comparing minimal/mild (0 - 15) versus moderate/severe (16 -63). After adjusting for the effects of the other variables in the model, the results of multiple logistic regression indicate that no support (AOR 1.65 95% CI: 1.02-2.66) and previous mental disorder diagnosis prior to imprisonment (AOR 2.07 95% CI: 1.05-4.07) were significantly associated with possible moderate and severe anxiety among prison inmates. It is observed that prison inmates with no support were 1.65 times more likely to suffer from possible moderate and severe anxiety than prisoners with support in the form of finances/materials and psychological support when visited by friends and relatives. Finally, it was further observed that prison inmates with previous mental disorder diagnosis prior to imprisonment were 2.07 times more likely to have possible moderate and severe anxiety than those with no previous mental disorder diagnosis prior to imprisonment. See Table 5 below.

Table 5. Logistic regression of associated risk factors with possible anxiety of prison in mates

Risk Factor	Unadjusted		Adjusted	
	OR [95% CI]	P-Value	OR [95% CI]	P-Value
Age	0.99 (0.97-1.02)	0.48	0.99 (0.97-1.02)	0.56
Education Level				
No Formal	1.00		1.00	
Primary	1.31 (0.51-3.40)	0.58	1.24 (0.47-3.26)	0.67
Secondary and above	1.29 (0.47-3.55)	0.63	1.18 (0.42-3.33)	0.76
Marital Status				
Single	1.00		1.00	
Married	0.96 (0.58-1.60)	0.88	1.04 (0.60-1.79)	0.90
Divorced	0.44 (0.14-1.39)	0.16	0.50 (0.15-1.63)	0.25
Employment before prison				
Yes	1.00		1.00	
No	1.21 (0.76-1.93)	0.41	1.24 (0.77-2.00)	0.37
Support				
Yes	1.00		1.00	
No	1.70 (1.08-2.70)	0.02	1.65 (1.02-2.66)	0.04*
Mental Disorder				
Yes	2.15 (1.11-4.15)	0.02	2.07 (1.05-4.07)	0.04*
No	1.00		1.00	

OR=Odds Ratio; CI=Confidence Interval, *=statistically significant

4.7. Predictors of possible co-morbidity (both depression and anxiety)

Table 6 presents the unadjusted and adjusted associations of predictors of possible co-morbidity. After adjusting for effects of the other variables in the model, the results of multiple logistic regression indicate no support (AOR 2.24 95% CI 1.36-3.69) and having previous mental disorder diagnosis prior to imprisonment (AOR 2.10, 95% CI 1.05-4.22) were significantly associated with possible co-morbidity of both depression and anxiety. It is observed that prison inmates with no support were 2.24 times more likely to suffer from both possible depression and anxiety than prisoners with support in the form of finances/materials and psychological support when visited by friends and relatives. Finally, it was further observed that prison inmates with history of mental disorder were 2.10 times more likely to have possible depression and anxiety than those with no history of mental disorder. See Table 6 below.

Table 6. Logistic regression of associated risk factors with co-morbidity (possible depression and anxiety) of prison in mates

Risk Factor	Unadjusted		Adjusted	
	OR [95% CI]	P-Value	OR [95% CI]	P-Value
Age	0.99 (0.97-1.02)	0.66	1.00 (0.97-1.02)	0.77
Education Level				
No Formal	1.00		1.00	
Primary	1.14 (0.44-2.96)	0.79	0.97 (0.36-2.60)	0.95
Secondary and Above	1.10 (0.39-3.05)	0.86	0.89 (0.31-2.55)	0.82
Marital Status				
Single	1.00		1.00	
Married	1.11 (0.65-1.89)	0.48	1.28 (0.72-2.28)	0.40
Divorced	0.12 (0.02-0.92)	0.04	0.13 (0.02-1.04)	0.05
Employment before Prison				
Yes	1.00		1.00	
No	1.38 (0.85-2.24)	0.19	1.48 (0.89-2.46)	0.13
Support				
Yes	1.00		1.00	
No	2.17 (1.35-3.49)	0.00	2.24 (1.36-3.69)	0.00*
Mental Disorder				
Yes	2.25 (1.16-4.38)	0.02	2.10 (1.05-4.22)	0.04*
No	1.00		1.00	

OR=Odds Ratio; CI=Confidence Interval, *=statistically significant

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter will start by discussing the study's main findings on the prevalence and factors associated with probable depression and anxiety disorders among prison inmates at Thyolo prison in Malawi. It will then discuss the implications of the study findings for policy and practice. After highlighting the limitations of the present study, the chapter will conclude with some recommendations for future research.

5.2 Main findings

5.2.1 Prevalence of possible depression and anxiety

This study found a high prevalence of 72.5% for possible depression among prison inmates. The prevalence is higher than published findings from similar studies conducted in HICs. For instance, the prevalence of major depression in male prisoners was 61.3% in USA, 24% in France, and 6-11% in New Zealand and Australia (Brinded 2001, Falissard 2006, Baillargeon 2009, Butler 2003). In general, this observation is in line with an earlier observation by Mundt and colleagues that the prevalence of mental disorders among prison inmates in LMICs are higher than those in HICs (Mundt et al., 2013). In LMICs, the findings from this study are consistent with previous studies conducted in Nigeria which reported the prevalence of 72.6% and 85.3% respectively (Osasona & Koleoso, 2015; Fatoye et al 2006). However, the prevalence from the current study is much higher than other published studies in other LMICs, specifically South Africa and India which ranged from 10.4% to 29% (Assadi et al., 2006; Kumar & Daria, 2013; Naidoo & Mkize, 2012).

The study also found a prevalence of 62.7% for possible anxiety disorders. Compared to studies from some HICs, the current study's prevalence of these disorders is higher. For instance, a Spanish study found the prevalence of anxiety disorders to be 45.3% (Vicens et al., 2011). Studies conducted in France and Canada found prevalence of 17.7% and 18.3%, respectively (Falissard et al., 2006, Brink et al., 2001). Additionally, much lower rates were reported in other LMICs. For example, studies from India and Iran showed prevalences ranging between 8.3%, and 7.7% (Kumar & Daria, 2013; Assadi et al., 2006; Mundt et al., 2013).

There are a number of possible reasons for the high prevalence of depression and anxiety. First, the current experience of imprisonment could play a role. This is supported by the findings that only 42 (11.1%) of the respondents reported having a previous mental disorder diagnosis prior to imprisonment. Inability to work for economic gains as well as restricted access to friends and family may play a role in the development of depression and anxiety symptoms in inmates (Rutherford & Duggan, 2009; Bedaso et al., 2018). This may further be explained by the condition of Malawian prisons, which are extremely harsh with many of the following features: poor sanitation, lack of safe and clean water, poor ventilation, inadequate lighting, lack of food, scarcity of proper health care and overcrowding. In this case, Thyolo prison was intended to house 200 inmates but now holds approximately 400 inmates. The observed pattern is consistent with reports from other LMICs including Latin America and West Africa where the inmate capacity is often double or triple the maximum capacity, thereby increasing the stressors and consequently the likelihood of depressive and anxiety symptoms among inmates (Almanzar et al., 2015; Garcia-Guerrero et al., 2012).

Second, the high prevalence of depression and anxiety in this study may also partly be related to sampling. Comparing data with other studies even from the same region may be problematic because of variations in sampling. For instance, the current study recruited the total population of the prison. This may be different from similar studies conducted in LMICs that used other sampling techniques such as stratified random sampling (Assadi et al., 2006; Abdulmalik et al., 2014; Naidoo & Mkize, 2012) and simple random sampling (Kumar & Daria, 2013) where potential bias might occur due to the sampling technique. It is also possible that in other studies prisoners with depressive symptoms and anxiety were more likely to refuse participation, resulting in a lower prevalence of disorders being reported.

Third, although the CES-D and BAI had been found to be reliable and valid for use in sub-Saharan African studies (Atkins et al., 2014; Hamad et al., 2008; Sweetland et al., 2014; Kagee et al., 2015), the high prevalence of depression and anxiety observed in this population could be due to the use of screening tools in this study instead of diagnostic instruments. In some studies, the CES-D and BAI were found to have a good sensitivity of 80% and 89% respectively, but a low specificity (Vilagut et al., 2016; Quinonnes et al., 2016; Leyfer et al., 2005). Furthermore, other investigators have found that the CES-D and the BAI had poor positive predictive power for clinical caseness (Thomas 2001; Stockings

et al., 2015; Leyfer et al., 2006), thereby, leading to overestimation for prevalences. Additionally, the studies reporting the prevalence of mental disorders referenced above, used a range of tools, including Diagnostic Interview Schedule for the DSM-IV (DIS-IV) (Thomas, 2001), Beck Depression Inventory (BDI) (Stockings et al., 2015) and Anxiety Disorders Interview Schedule (ADIS-IV) (Leyfer et al., 2006), which may limit the comparability of the results.

Regarding co-morbidity, this study found that 95 (25.1%) of the respondents in the sample had both possible depression and a possible anxiety disorder. It is not uncommon to have co-occurring depressive and anxiety disorders and a number of studies have investigated this co-morbidity and the relationship between these disorders (Cummings et al 2014; Andreescu et al 2009; Axelson & Birmaher, 2001; Avenevoli et al 2001; Yorbik et al., 2004; Garber & Weersing 2010; Kaufman & Charney 2000; Lubman et al., 2007; Saatcioglu 2008; López-Pérez et al., 2018; Quarantini et al., 2009). Either a depressive disorder or an anxiety disorder may occur in an individual prior to the development of the second disorder. However, a number of studies have shown that anxiety disorders tend to commonly occur prior to depressive disorders (de Graaf et al., 2003; Melartin et al 2002; Lenze et al., 2005; Essau 2008; Burke et al., 2005) while only a handful of studies suggest otherwise (Moffitt et al., 2007; Moriarity et al., 2018). For instance, Lamers (2011) found that 57% of the study participants had a pre-existing anxiety disorder and 18% had a pre-existing depressive disorder before the onset of the second disorder (Lamers et al., 2011).

Studies have shown that individuals with comorbidity have a poorer prognosis than those with a single disorder. They present with severe symptomatology which eventually produces significant impairments in psychosocial and cognitive functioning (Wood 2011; Wüsthoff, 2014; Baillargeon 2009; Hasin et al 2007). For instance, clients with comorbid depressive and anxiety disorders may present with a number of episodes of severe symptoms of major depressive disorder with higher levels of suicidal tendencies unlike their counterparts with a depressive disorder or an anxiety disorder only (Seo et al., 2011; Fava et al., 2004). In addition, research reveals that self-harming behaviours are higher in clients with co-occurring severe anxiety and depressive disorders (25.5%) than their counterparts with only major depressive disorder (14.8%) or with panic disorder (5.2%) only (Roy-Byrne et al., 2000).

5.2.2 Predictors of possible depression, anxiety and co-morbidity

The study found that lack of social support and experiencing two or more traumatic events were significantly associated with possible depression while no support and previous mental disorder diagnoses were associated with both anxiety and co-morbidity among prison inmates. However, divorce was found to be a protective factor against possible depression.

5.2.2.1 Possible depression

In the multivariate model, the study found a significant association between prison inmates who had experienced two or more traumatic events and possible depression. The odds of being depressed for prison inmates who had at least two traumatic events was 4.30 times that of those with at most one traumatic event. A significant association was also found between prison inmates who did not get support and possible depression. The odds of being depressed for prison inmates who did not get support was 5.19 times that of prison inmates who received support. Finally, divorce was found to be a protective factor against possible depression.

Regarding trauma as a risk factor, a number of studies have found traumatic events to be highly associated with mental disorders (Ali et al., 2016; Steel et al., 2009; Murthy, 2007; Prince et al., 2008). This is supported by a study which showed that the higher the number of major life events the greater the potential stress elicited and the higher the probability of the occurrence of common mental disorders (Youngmann et al., 2008). Specifically in relation to anxiety disorders, the findings of the current study are consistent with a number of studies that have investigated the factors associated with trauma and different anxiety disorders, with a substantial body of this research focusing on post-traumatic stress disorders (Farhood & Dimassi, 2012; de Jong et al., 2001; Roberts et al., 2008; Johnson & Thompson, 2008). Apart from post-traumatic stress disorder, some studies have linked the exposure to trauma to the development of generalized anxiety disorders (Ghafoori et al., 2009; Amstadter et al., 2009; Grant et al., 2008). Traumatic experiences that have been linked with higher prevalences of anxiety include war (Priebe et al., 2010), natural disasters (Acierno et al., 2007; Pietrzak et al., 2012), and road traffic accidents (Grant et al., 2008), among others. The association between trauma and anxiety disorders in the current study may be aggravated by poor living conditions and socio-economic insecurity (Roberts & Browne, 2011) common in prison settings.

The finding that divorce was a protective factor against possible depression contradicts a number of studies involving prisoners and the community in general which found a strong association between divorce and mental disorders (Nseluke & Siziya, 2011; Butler et al., 2003; Ghanem et al 2009; Coid et al., 2006). For instance, studies conducted in the general population that compared divorced to married individuals found that divorced individuals experienced more symptoms of depression than those who were married (Bierman et al., 2006; Hetherington, 2003; Wood et al., 2007). However, consistent with the current study findings, some studies have shown that divorce, improves self-concept (as opposed to a negative self-concept common in depressive disorders) and that individuals feel more independent, in control of one's life and more competent, thereby preventing depression (Baum et al., 2005; Kalmijn & Monden, 2004). It is not clear why divorce status might protect against possible depression, however, Bottom (2013) hypothesized that divorcees would have improved levels of mental health if they maintained shared or full custody of their children. Other studies have also found that shared or full custody of children after divorce has a significant positive impact on divorcee's levels of psychological well-being (Williams & Dunne-Bryant, 2006; Bottom 2013).

Finally, the study found a significant association between lack of support and possible depression. The results of the current study are consistent with other previous studies (Constantino et al 2016; Abdu et al 2018; Abdulmalik et al 2014). Some investigators have also found that inadequate or absent social support may contribute to the development of mental health problems, including depressive disorders (Corrigan et al., 2015; Grav et al., 2012; Dennis & Ross, 2006; Westdahl et al., 2007). The occurrence of depression in prison inmates is often linked to the fact that they are likely to suffer in prison in different spheres of life and have problems adapting to prison life or life thereafter (Baillargeon et al., 2010; Haney et al., 2003). Additionally, the individual's perception of control over one's life and relationships are severely shaken (Harman et al., 2007; Breen, 2008). There is empirical evidence that links social relationships to positive health effects. A number of studies postulate that higher levels of social support from relatives and friends mitigate psychological problems in an individual when confronted with life stressors (Uchino 2006; Thoits, 2011; Holt-Lunstad et al., 2010). Furthermore, research has shown that adequate social support may hinder the development or progression of depressive disorders regardless of age and gender (Gariepy et al., 2016; Taylor & Lynch, 2004; Santini et al., 2015). In relation to the results found in this study, it is important therefore, that marginalized groups like prisoners are given enough support in order to buffer existing depressive symptoms and avoid the development of such

symptoms. Therefore, prisoners' social support from friends and families should not be undermined, but should rather be supported and enhanced in order to promote their psychological well-being.

5.2.2.2 Possible anxiety

The study found a significant association between prison inmates with a previous mental disorder diagnosis, and possible moderate and severe anxiety. It was also found in the present study that prison inmates with a previous mental disorder diagnosis were 2.07 times more likely to have a possible moderate and severe anxiety disorder than those with no previous mental disorder diagnosis. This is consistent with some studies that have found a significant association between a previous mental disorder diagnosis and an existing mental disorder (Mir et al., 2015; Melartin et al 2002; Burke et al., 2005, Bittner et al., 2004; Steffens et al., 2005). The possible reason behind this could be explained that some anxiety disorders found among these prison inmates may emerge from early adolescence (de Lijster et al 2017). In many people, anxiety disorder can be a chronic condition because of its tendency to relapse and co-occur with other mental disorders (Bruce et al., 2005).

Furthermore, the current study found a significant association between no support and possible moderate and severe anxiety among prison inmates. Previous studies support this result (Jean Trudel et al., 2009; Peter et al., 2017), although some studies have not found a significant association between social support and anxiety disorders (Levy et al., 2017). But generally, a number of studies have shown that perceived social support (material, financial and emotional) from family and friends have a protective effect on the development of anxiety disorders (Dour et al., 2014; Roohafza et al., 2014; Orpana et al., 2016). Thus, as for the prevention of anxiety symptoms, social support for prisoners from family and friends plays a vital role.

5.2.2.3 Possible depression and anxiety (co-morbidity)

This study found that prison inmates with no support were 2.24 times more likely to suffer from both possible depression and anxiety than prison inmates with support. Given that social support was a risk factor for depression and anxiety disorders, it is not surprising that it was also a risk factor for co-morbidity. Interestingly, a number of studies have provided evidence that social support from family and friends reduces this co-morbidity by instilling a sense of security and enabling efficient communication

skills which eventually buffers the negative impact of stress (Harandi et al., 2017; Cheng et al., 2014; Xu et al., 2013).

The current study further found that prison inmates with a previous mental disorder diagnosis were 2.10 times more likely to have possible depression and anxiety than those with no previous mental disorder diagnosis. Studies investigating the relationship between previous mental disorder diagnosis and both depression and anxiety are limited. However, a study in Nigeria, had similar results that previous mental disorder diagnosis predicted having more than one mental disorder (Osasona et al 2015). Fatoye and colleagues also found a significant association between previous mental disorder diagnosis and having comorbid mental disorders (Fatoye et al 2006). This association is also not surprising as depressive and anxiety disorders commonly co-occur and comorbidity is often preceded by the occurrence of one disorder, as described in section 5.2.1.

5.3 Implications of findings: policy and practice

The study found a high prevalence of both possible depressive and anxiety disorders among prison inmates, with very few prisoners receiving a diagnosis prior to imprisonment. Given that untreated mental disorders have been found to lead to poorer prognoses, symptom recurrence, failure to integrate into the community and re-offending, addressing the mental health care needs of prisons inmates could have a significant impact on prison policy formulation and practice (Martin et al., 2016). There are numerous lessons that can be drawn from this study which may be relevant for mental health promotion, prevention and treatment in Malawian prison populations.

5.3.1 Implications for policy

One of the main barriers to developing a mental health policy for Malawian prisons is the lack of policy at a national level. Currently the Malawi national mental health policy is under review (WHO, 2011). If mental health programmes are to achieve their goals of promoting mental health and preventing mental disorders among prisoners, then it is of great importance to have a prison mental health policy that stems from a national mental health policy. A prison mental health policy should include preventive, curative, and rehabilitative services as well as mental health promotion. This is essential in providing direction for

the development and integration of mental health activities or programmes in prison settings, and in advocating for services.

When developing a mental health policy for prisons specifically, not only is it important to ensure that recommendations are in line with the national mental health policy, but matters relating specifically to the prison system should be considered. First, the Malawian prison service policy should embrace universally acceptable standards that incorporate issues concerning human dignity and safety of prisoners including prison environment (Lines, 2008). Therefore, the prison environment should be improved by providing adequate accommodation, adequate water supply, good sanitation, good ventilation, adequate lighting and adequate nutritional needs. This in turn promotes the well-being of prisoners, hence preventing the development of possible depression and anxiety among inmates.

Second, rehabilitation programmes in prisons should be included that are intended to reform the behaviour of prisoners. These include emotional and mental health counseling programmes, religious programmes, educational training programmes, vocational skills training programmes, agricultural training programmes and prison-visiting programmes (Miriti & Kimani, 2017). A broad range of programmes can be offered which prisoners can access according to their needs and have proven to be effective in African prison settings (Miriti & Kimani, 2017). Such programmes are tailored towards behavioural modification and reformation of prisoners rather than additional punishment, such as solitary confinement, which induces hyper-responsiveness, hostile fantasies, panic attacks and hallucinations eventually leading to anxiety disorders (Fellner, 2006). Prisoners engaged in programmes like educational, vocational skills and agricultural training programmes would benefit by increasing their chances of effectively re-integrating into the community by reshaping them into productive citizens prepared for gainful employment upon release, thereby preventing re-offending. On the other hand, innovative prison-visiting programmes (externally, visits from family and friends and internally, ensuring access to mental health professionals and referral), as well as emotional and mental health counseling using evidence-based approaches also play a critical role. The former promotes bonding, peer social support, motivates the prisoner and improves personal growth (Schubert et al, 2016), while the latter builds an inner self-motivation and provides new insight into one's goals, thereby assisting in learning positive behaviour (Wormith, 2007). In turn, this would improve the inmate's functioning in prison, compliance with rehabilitation programmes, decrease re-offending and increase an inmate's

chances of successfully re-integrating into the community (De Claire & Dixon, 2017; Burnett, 2011; Robinson & Crow, 2009).

Third, it is important that the government take the responsibility to improve the almost non-existent mental health care services in Malawian prisons. Prison mental healthcare should be integrated with the mental healthcare system in Malawi. There is a great need, therefore, to increase capacity in prison staff and clinicians to detect and treat mental disorders among prison inmates (this is discussed further in section 5.3.2). This would improve prisoner outcomes through early and improved recognition of these disorder symptoms within the prison settings. Thus, prison mental health policies should inform future interventions in the prison system.

5.3.2 Implications for practice

Although depression and anxiety are treatable conditions, it was noted that prison inmates with these mental disorders received no treatment. Moreover, many prisoners with mental disorders are probably undiagnosed. This situation may not be different from other prisons in Malawi. This study highlights an important gap in the Malawian prison health services that would be filled by the following activities.

First, all prisoners and prison officials should be provided with mental health literacy. For its effectiveness, it is worthwhile to incorporate mental health literacy into national health literacy programmes to improve help-seeking and hopefully treatment. This in turn, improves quality of life and earning potential reduction in stigma at an individual, community and institutional levels including prison settings (Walsh & Freshwater, 2009). Much of the focus should be on understanding the relationship that exists between the risk factors and mental disorders. This can lead to improvement in client outcomes and subsequent use of mental health services (Corrigan & Watson, 2003).

Second, prisoners could undergo health screening upon admission to prison including mental health screening, and other screening such as cervical screening, diabetic screening or TB screening to identify physical health and mental health needs (Champion, 2018). Nurses and general health practitioners could be trained through in-service trainings, refresher courses and continuing professional development (CPD) programmes on how to identify prisoners with mental disorders, those at risk of developing these mental disorders and appropriate treatment. This can eventually lead to improvement in the health

worker's knowledge and competence in managing prisoners with mental health problems, thereby improving client outcomes (Parker, 2015; Rüscher et al., 2011; Henderson et al., 2013). Above all, the earlier the detection of risk factors, the faster the identification of preventive interventions that address those determinants, thereby preventing the occurrence of depression and anxiety disorders.

Third, although this study only looked at the prevalence of depression and anxiety among inmates, it is reasonable to suggest that prisoners may also be suffering from other mental disorders (Naidoo & Mkize, 2012; Abdulmalik et al., 2014). Prisoners who screen positive for any mental health condition should be assessed by a trained mental health provider and an individualized treatment regime should be considered. There are a number of treatment options which could be provided for prisoners with these disorders including pharmacotherapy, psychotherapy and mental health counseling (Hills et al., 2004; Adams & Ferrandino, 2008). These interventions could aid an ex-prisoner's re-integration into their community, hence preventing further imprisonment (Baillargeon et al., 2010).

Fourth, released prisoners with anxiety and depressive disorders should be referred to community mental health workers for follow-up and support upon re-entry into the community. The coordination with community mental health workers would assist the ex-prisoner to be connected to community services such as community rehabilitation programmes that include volunteering and support groups that are likely to enhance social support and positive interactions which facilitates re-integration into the society. Improving access to community mental health resources for prisoners who receive treatment for mental health problems is essential for continuity of care. This in turn prevents the relapsing of depression and anxiety symptoms, thereby improving quality of life (Wallace et al., 2014; Pettus-Davis et al., 2011; Cosden et al., 2003; Freudenberg et al., 2008).

Overall, the current study, being the first of its kind in Malawi, provides some prevalence data from one prison and highlights possible risk factors which could inform future larger prison studies in Malawi.

5.4 Limitations

The study has a few limitations. First, the sample size was relatively small, and the study was conducted in just one prison and only among male prison inmates. Therefore, this makes it difficult to generalize the results. Secondly, the study only included CMDs, namely depression and anxiety and not severe

mental disorders such as psychotic disorders, personality disorders, etc which are found in prison populations (Fazel & Danesh, 2002). Third, the use of screening instruments in this study (CES-D 20 and BAI) rather than diagnostic instruments such as the SCID or MINI did not allow the diagnosis of mental disorders and thus could not provide a true prevalence of depressive and anxiety disorders in this population. However, self-report screening tools such as those employed in this study, are easy to administer and could be used in prisons to identify prisoners at-risk for disorders. Furthermore, although they have not been validated in Malawi, the CES-D 20 and BAI screening tools are standardized and have been found to be effective in many settings. Fourth, the social support questions used in the study were not a validated tool. For this study, social support was operationalized as the prisoner having received material or financial support, or visits from family members or friends.

5.5 Conclusion and recommendations

This study provided valuable insights into the prevalence and risk factors associated with possible depression and anxiety among prison inmates in Malawi. Regular screening of prison inmates for early detection and treatment of mental disorders would be beneficial to improve the quality of life of prison inmates. Therefore, this research evidence indicates that there is need for effective mental healthcare programmes in prisons which could include staff training in the proper detection of mental disorders and effective provision of mental health care. Future research is required to validate mental health screening tools in Malawian prison populations for use by prison staff and healthcare workers. Additionally, further treatment needs of prison inmates should be investigated, given the high prevalence of possible depression and anxiety disorders detected in this study. Such needs may include those which should be addressed by specialist mental health services as well as multidisciplinary mental health and social services. These services could provide care to inmates and coordinate with community mental health services for follow-up of individuals once they are released back into the community. Above all, further enquiry should look into the social support needs of prisoners and possible interventions.

REFERENCES

- Abdu, Z., Kabeta, T., Dube, L., Tessema, W., & Abera, M. (2018). Prevalence and Associated Factors of Depression among Prisoners in Jimma Town Prison, South West Ethiopia *Psychiatry Journal*, 2018, 5762608, <https://doi.org/10.1155/2018/5762608>
- Abdulmalik, J., Adedokun, B., & Baiyewu, O. (2014). Prevalence and correlates of mentalhealth problems among awaiting trial inmates in a Prison facility in Ibadan, Nigeria. *African Journal of Medicine and Medical Sciences*, 43(Suppl 1), 193–199.
- Acierno, R., Ruggiero, K. J., Galea, S., Resnick, H. S., Koenen, K., Roitzsch, J., ... Kilpatrick, D. G. (2007). Psychological Sequelae Resulting From the 2004 Florida Hurricanes: Implications for Postdisaster Intervention. *American Journal of Public Health*, 97(Suppl 1), S103–S108. <https://doi.org/10.2105/AJPH.2006.087007>
- Adams, K., & Ferrandino, J. (2008). Managing Mentally Ill Inmates in Prisons. *Criminal Justice and Behavior*, 35(8), 913–927. <https://doi.org/10.1177/0093854808318624>
- Ali, S., Stone, M. A., Peters, J. L., Davies, M. J., & Khunti, K. (2006). The prevalence of co-morbid depression in adults with Type 2 diabetes: a systematic review and meta-analysis. *Diabetic Medicine: A Journal of the British Diabetic Association*, 23(11), 1165–1173. <https://doi.org/10.1111/j.1464-5491.2006.01943.x>
- Ali, Y., Yigzaw, N., Bekana, L., & Mekonen, S. (2016). Prevalence of Common Mental Disorders and Associated Factors among Prisoners in Debre Markos Town Correctional Institution, North-West, Ethiopia. *International Journal of Mental Health & Psychiatry*, 2016. <https://doi.org/10.4172/2471-4372.1000118>
- Allnutt, S., Wedgwood, L., Wilhelm, K., & Butler, T. (2008). Temperament, Substance Use and Psychopathology in a Prisoner Population: Implications for Treatment. *Australian and New Zealand Journal of Psychiatry*, 42(11), 969–975. <http://doi.org/10.1080/00048670802415350>
- Almanzar, S., Katz, C. L., & Harry, B. (2015). Treatment of Mentally Ill Offenders in Nine Developing Latin American Countries. *The Journal of the American Academy of Psychiatry and the Law*, 43(3), 340–349.
- Amstadter, A. B., Acierno, R., Richardson, L., Kilpatrick, D. G., Gros, D. F., Gaboury, M. T., ... Galea, S. (2009). Post-Typhoon Prevalence of Post-traumatic Stress Disorder, Major Depressive Disorder, Panic Disorder and Generalized Anxiety Disorder in a Vietnamese Sample. *Journal of Traumatic Stress*, 22(3), 180–188. <https://doi.org/10.1002/jts.20404>

- Andreoli, S. B., dos Santos, M. M., Quintana, M. I., Ribeiro, W. S., Blay, S. L., Taborda, J. G. V., & de Jesus Mari, J. (2014). Prevalence of Mental Disorders among Prisoners in the State of Sao Paulo, Brazil. *PLoS ONE*, *9*(2). <https://doi.org/10.1371/journal.pone.0088836>
- Andreescu, C., Butters, M., Lenze, E. J., Venkatraman, V. K., Nable, M., Reynolds, C. F., ... Aizenstein, H. J. (2009). fMRI Activation in Late-Life Anxious Depression: a Potential Biomarker. *International Journal of Geriatric Psychiatry*, *24*(8), 820. <https://doi.org/10.1002/gps.2327>
- Arboleda-Flórez, J. (2009). Mental patients in prisons. *World Psychiatry*, *8*(3), 187.
- Åslund, C., Larm, P., Starrin, B., & Nilsson, K. W. (2014). The buffering effect of tangible social support on financial stress: influence on psychological well-being and psychosomatic symptoms in a large sample of the adult general population. *International Journal for Equity in Health*, *13*. <https://doi.org/10.1186/s12939-014-0085-3>
- Assadi, S. M., Noroozian, M., Pakravannejad, M., Yahyazadeh, O., Aghayan, S., Shariat, S. V., & Fazel, S. (2006). Psychiatric morbidity among sentenced prisoners: prevalence study in Iran. *The British Journal of Psychiatry*, *188*(2), 159–164. <https://doi.org/10.1192/bjp.188.2.159>
- Atkins, R. (2014). Validation of the Center for Epidemiologic Studies Depression Scale in Black Single Mothers. *Journal of Nursing Measurement*, *22*(3), 511–524.
- Avenevoli, S., Stolar, M., Li, J., Dierker, L., & Ries Merikangas, K. (2001). Comorbidity of depression in children and adolescents: models and evidence from a prospective high-risk family study. *Biological Psychiatry*, *49*(12), 1071–1081.
- Avenue, H. R. W. | 350 F., York, 34th Floor | New, & t 1.212.290.4700, N. 10118-3299 U. |. (2010, April 27). Unjust and Unhealthy | HIV, TB, and Abuse in Zambian Prisons. Retrieved September 13, 2018, from <https://www.hrw.org/report/2010/04/27/unjust-and-unhealthy/hiv-tb-and-abuse-zambian-prisons>
- Axelson, D. A., & Birmaher, B. (2001). Relation between anxiety and depressive disorders in childhood and adolescence. *Depression and Anxiety*, *14*(2), 67–78. <https://doi.org/10.1002/da.1048>
- Baillargeon, J., Binswanger, I. A., Penn, J. V., Williams, B. A., & Murray, O. J. (2009). Psychiatric disorders and repeat incarcerations: the revolving prison door. *The American Journal of Psychiatry*, *166*(1), 103–109. <https://doi.org/10.1176/appi.ajp.2008.08030416>

- Baillargeon, J., Hoge, S. K., & Penn, J. V. (2010). Addressing the challenge of community reentry among released inmates with serious mental illness. *American Journal of Community Psychology, 46*(3–4), 361–375. <https://doi.org/10.1007/s10464-010-9345-6>
- Baranyi, G., Cassidy, M., Fazel, S., Priebe, S., & Mundt, A. P. (2018). Prevalence of Posttraumatic Stress Disorder in Prisoners. *Epidemiologic Reviews, 40*(1), 134–145. <https://doi.org/10.1093/epirev/mxx015>
- Baum, N., Rahav, G., & Sharon, D. (2005). Changes in the Self-Concepts of Divorced Women. *Journal of Divorce & Remarriage, 43*(1–2), 47–67. https://doi.org/10.1300/J087v43n01_03
- Baxter, A. J., Scott, K. M., Vos, T., & Whiteford, H. A. (2013). Global prevalence of anxiety disorders: a systematic review and meta-regression. *Psychological Medicine, 43*(5), 897–910. <https://doi.org/10.1017/S003329171200147X>
- Beck & Steer (1990). Beck anxiety inventory. Retrieved from http://link.springer.com/10.1007/978-0-387-79061-9_3159
- Bedaso, A., Kediro, G., & Yeneabat, T. (2018). Factors associated with depression among prisoners in southern Ethiopia: a cross-sectional study. *BMC Research Notes, 11*. <https://doi.org/10.1186/s13104-018-3745-3>
- Bierman, A., Fazio, E. M., & Milkie, M. A. (2006). A Multifaceted Approach to the Mental Health Advantage of the Married: Assessing How Explanations Vary by Outcome Measure and Unmarried Group. *Journal of Family Issues, 27*(4), 554–582. <https://doi.org/10.1177/0192513X05284111>
- Bittner, A., Goodwin, R. D., Wittchen, H.-U., Beesdo, K., Höfler, M., & Lieb, R. (2004). What characteristics of primary anxiety disorders predict subsequent major depressive disorder? *The Journal of Clinical Psychiatry, 65*(5), 618–626, quiz 730.
- Bonne, O., Brandes, D., Gilboa, A., Gomori, J. M., Shenton, M. E., Pitman, R. K., & Shalev, A. Y. (2001). Longitudinal MRI Study of Hippocampal Volume in Trauma Survivors With PTSD. *The American Journal of Psychiatry, 158*(8), 1248.
- Bottom, T. L. (2013). The Well-Being of Divorced Fathers: A Review and Suggestions for Future Research. *Journal of Divorce & Remarriage, 54*(3), 214–230. <https://doi.org/10.1080/10502556.2013.773802>
- Breen, J. (2008). Prisoners' Families and the Ripple Effects of Imprisonment. *Studies: An Irish Quarterly Review, 97*(385), 59–71.

- Brinded, P. M., Simpson, A. I., Laidlaw, T. M., Fairley, N., & Malcolm, F. (2001). Prevalence of psychiatric disorders in New Zealand prisons: a national study. *Australian and New Zealand Journal of Psychiatry*, 35(2), 166–173.
- Brink, J. H., Doherty, D., & Boer, A. (2001). Mental disorder in federal offenders: A Canadian prevalence study. *International Journal of Law and Psychiatry*, 24(4–5), 339–356. [https://doi.org/10.1016/S0160-2527\(01\)00071-1](https://doi.org/10.1016/S0160-2527(01)00071-1)
- Bromet, E., Andrade, L. H., Hwang, I., Sampson, N. A., Alonso, J., de Girolamo, G., ... Kessler, R. C. (2011). Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine*, 9(1), 90. <https://doi.org/10.1186/1741-7015-9-90>
- Brooke, D., Taylor, C., Gunn, J., & Maden, A. (1996). Point prevalence of mental disorder in unconvicted male prisoners in England and Wales. *Bmj*, 313(7071), 1524–1527.
- Bruce, S. E., Yonkers, K. A., Otto, M. W., Eisen, J. L., Weisberg, R. B., Pagano, M., ... Keller, M. B. (2005). Influence of psychiatric comorbidity on recovery and recurrence in generalized anxiety disorder, social phobia, and panic disorder: a 12-year prospective study. *The American Journal of Psychiatry*, 162(6), 1179–1187. <https://doi.org/10.1176/appi.ajp.162.6.1179>
- Burke, J. D., Loeber, R., Lahey, B. B., & Rathouz, P. J. (2005). Developmental transitions among affective and behavioral disorders in adolescent boys. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 46(11), 1200–1210. <https://doi.org/10.1111/j.1469-7610.2005.00422.x>
- Burnett, R. (2011). Transitions to Better Lives: Offender Readiness and Rehabilitation by A. Day, S. Casey, T. Ward, K. Howells, and J. Vess. *The Howard Journal of Criminal Justice*, 50(2), 225–226. <https://doi.org/10.1111/j.1468-2311.2011.00661.x>
- Butler, T., Indig, D., Allnutt, S., & Mamoon, H. (2011). Co-occurring mental illness and substance use disorder among Australian prisoners. *Drug and Alcohol Review*, 30(2), 188–194. <https://doi.org/10.1111/j.1465-3362.2010.00216.x>
- Butler, T., Andrews, G., Allnutt, S., Sakashita, C., Smith, N. E., & Basson, J. (2006). Mental disorders in Australian prisoners: a comparison with a community sample. *The Australian and New Zealand Journal of Psychiatry*, 40(3), 272–276. <https://doi.org/10.1080/j.1440-1614.2006.01785.x>

- Butler, T., Allnutt, S., Cain, D., Owens, D., & Muller, C. (2005). Mental disorder in the New South Wales prisoner population. *The Australian and New Zealand Journal of Psychiatry*, 39(5), 407–413. <https://doi.org/10.1080/j.1440-1614.2005.01589.x>
- Caravaca-Sánchez F., Falcón Romero M., & Luna, A. (2015). [Prevalence and predictors of psychoactive substance use among men in prisons]. - PubMed - NCBI. Retrieved September 12, 2017
- Champion, J. (2018, July). National Screening Programmes in the Prison Setting: A Guide. NHS Scotland. <https://www.nphn.scot.nhs.uk/national-screening-services-in-prisons/>
- Chaudhuri, S. B., Mandal, P. K., Chakrabarty, M., Bandyopadhyay, G., & Bhattacharjee, S. (2017). A study on the prevalence of depression and its risk factors among adult population of Siliguri subdivision of Darjeeling district, West Bengal. *Journal of Family Medicine and Primary Care*, 6(2), 351–355. https://doi.org/10.4103/jfmmpc.jfmmpc_326_16
- Cheng, Y., Li, X., Lou, C., Sonenstein, F. L., Kalamar, A., Jejeebhoy, S., ... Ojengbede, O. (2014). The association between social support and mental health among vulnerable adolescents in five cities: findings from the study of the well-being of adolescents in vulnerable environments. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 55(6 Suppl), S31-38. <https://doi.org/10.1016/j.jadohealth.2014.08.020>
- Clemente, Adauto S., Breno S. Diniz, Rodrigo Nicolato, Flavio P. Kapczinski, Jair C. Soares, Josélia O. Firmo, and Érico Castro-Costa. “Bipolar Disorder Prevalence: A Systematic Review and Meta-Analysis of the Literature.” *Revista Brasileira De Psiquiatria (Sao Paulo, Brazil: 1999)* 37, no. 2 (June 2015): 155–61. <https://doi.org/10.1590/1516-4446-2012-1693>.
- Coid, J., Yang, M., Tyrer, P., Roberts, A., & Ullrich, S. (2006). Prevalence and correlates of personality disorder in Great Britain. *The British Journal of Psychiatry: The Journal of Mental Science*, 188, 423–431. <https://doi.org/10.1192/bjp.188.5.423>
- Constantino, P., Assis, S. G. de, Pinto, L. W., Constantino, P., Assis, S. G. de, & Pinto, L. W. (2016). The impact of prisons on the mental health of prisoners in the state of Rio de Janeiro, Brazil. *Ciência & Saúde Coletiva*, 21(7), 2089–2100. <https://doi.org/10.1590/1413-81232015217.01222016>
- Corrigan, C. P., Kwasky, A. N., & Groh, C. J. (2015). Social Support, Postpartum Depression, and Professional Assistance: A Survey of Mothers in the Midwestern United States. *The Journal of Perinatal Education*, 24(1), 48–60. <https://doi.org/10.1891/1058-1243.24.1.48>

- Corrigan, P. W., & Watson, A. C. (2003). Factors that explain how policy makers distribute resources to mental health services. *Psychiatric Services (Washington, D.C.)*, *54*(4), 501–507. <https://doi.org/10.1176/appi.ps.54.4.501>
- Cosden, M., Ellens, J. K., Schnell, J. L., Yamini-Diouf, Y., & Wolfe, M. M. (2003). Evaluation of a mental health treatment court with assertive community treatment. *Behavioral Sciences & the Law*, *21*(4), 415–427. <https://doi.org/10.1002/bsl.542>
- Cramer, V. (2016). The Prevalence of Mental Disorders among Convicted Inmates in Norwegian Prisons. <http://sifer.no/publikasjoner/detalj/the-prevalence-of-mental-disorders-among-convicted-inmates-in-norwegian-pri>.
- Cummings, C.M., Caporino, N.E. & Kendall, P.C. (2014). Comorbidity of Anxiety and Depression in Children and Adolescents: 20 years after. *Psychology Bulletin*.<https://doi.org/10.1037/a0034733>
- Dachew, B. A., Fekadu, A., Kisi, T., Yigzaw, N., & Bisetegn, T. A. (2015). Psychological distress and associated factors among prisoners in North West Ethiopia: cross-sectional study. *International Journal of Mental Health Systems*, *9*. <https://doi.org/10.1186/s13033-015-0033-7>
- Dadi, A. F., Dachew, B. A., Kisi, T., Yigzaw, N., & Azale, T. (2016). Anxiety and associated factors among prisoners in North West of Amhara Regional State, Ethiopia. *BMC Psychiatry*, *16*. <https://doi.org/10.1186/s12888-016-0792-y>
- De Claire, K., & Dixon, L. (2017). The Effects of Prison Visits From Family Members on Prisoners' Well-Being, Prison Rule Breaking, and Recidivism: A Review of Research Since 1991. *Trauma, Violence & Abuse*, *18*(2), 185–199. <https://doi.org/10.1177/1524838015603209>
- de Graaf, R., Bijl, R. V., Spijker, J., Beekman, A. T. F., & Vollebergh, W. a. M. (2003). Temporal sequencing of lifetime mood disorders in relation to comorbid anxiety and substance use disorders--findings from the Netherlands Mental Health Survey and Incidence Study. *Social Psychiatry and Psychiatric Epidemiology*, *38*(1), 1–11. <https://doi.org/10.1007/s00127-003-0597-4>
- de Jong, J. T., Komproe, I. H., Van Ommeren, M., El Masri, M., Araya, M., Khaled, N., ... Somasundaram, D. (2001). Lifetime events and posttraumatic stress disorder in 4 postconflict settings. *JAMA*, *286*(5), 555–562.
- de Lijster, J. M., Dierckx, B., Utens, E. M. W. J., Verhulst, F. C., Zieldorff, C., Dieleman, G. C., & Legerstee, J. S. (2017). The Age of Onset of Anxiety Disorders. *Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie*, *62*(4), 237–246. <https://doi.org/10.1177/0706743716640757>

- Dennis, C.-L., & Ross, L. (2006). Women's perceptions of partner support and conflict in the development of postpartum depressive symptoms. *Journal of Advanced Nursing*, 56(6), 588–599. <https://doi.org/10.1111/j.1365-2648.2006.04059.x>
- Di Lorito, C., Völlm, B., & Dening, T. (2018). Psychiatric disorders among older prisoners: a systematic review and comparison study against older people in the community. *Aging & Mental Health*, 22(1), 1–10. <https://doi.org/10.1080/13607863.2017.1286453>
- Dour, H., Roy-Byrne, P., Wiley, J.F. & Stein, M.B. (2014). Perceived Social Support Mediates Anxiety and Depressive Symptom Changes Following Primary Care Intervention | <http://dx.doi.org/10.1002/da.22216>
- Ducrocq, F., Vaiva, G., Cottencin, O., Molenda, S., & Bailly, D. (2001). [Post-traumatic stress, post-traumatic depression and major depressive episode: literature]. *L'Encephale*, 27(2), 159–168.
- Dumont, D. M., Brockmann, B., Dickman, S., Alexander, N., & Rich, J. D. (2012). Public Health and the Epidemic of Incarceration. *Annual Review of Public Health*, 33, 325. <https://doi.org/10.1146/annurev-publhealth-031811-124614>
- Dutta, S., Saha S.K., Chatterjee, S., Chakraborty, P., Kumar, S., Mukherjee, A. (2014). A Study on Mental Health Morbidities with Socio-Demographic Correlates If Any, Among the Inmates at Bankura Prisons, West Bengal. Retrieved October 4, 2016, from <http://saspublisher.com/wp-content/uploads/2014/03/SJAMS-22D882-885.pdf>
- El-Gilany, A., Khater, M., Gomaa, Z., Hussein, E., & Hamdy, I. (2016). Psychiatric Disorders among Prisoners: A National Study in Egypt. *East Asian Archives of Psychiatry: Official Journal of the Hong Kong College of Psychiatrists = Dong Ya Jing Shen Ke Xue Zhi: Xianggang Jing Shen Ke Yi Xue Yuan Qi Kan*, 26(1), 30–38.
- European Monitoring Centre for Drugs and Drug Addiction. (2009). *Annual report 2009: the state of the drug problem in Europe*. Luxembourg: Office for Official Publications of the European Communities.
- Farhood, L. F., & Dimassi, H. (2012). Prevalence and predictors for post-traumatic stress disorder, depression and general health in a population from six villages in South Lebanon. *Social Psychiatry and Psychiatric Epidemiology*, 47(4), 639–649. <https://doi.org/10.1007/s00127-011-0368-6>

- Farley, M., Golding, J. M., Young, G., Mulligan, M., & Minkoff, J. R. (2004). Trauma history and relapse probability among patients seeking substance abuse treatment. *Journal of Substance Abuse Treatment*, 27(2), 161–167. <https://doi.org/10.1016/j.jsat.2004.06.006>
- Fatoye, F. O., Fatoye, G. K., Oyebanji, A. O., & Ogunro, A. S. (2006). Psychological characteristics as correlates of emotional burden in incarcerated offenders in Nigeria. *East African Medical Journal*, 83(10), 545–552.
- Fava, M., Alpert, J. E., Carmin, C. N., Wisniewski, S. R., Trivedi, M. H., Biggs, M. M., ... Rush, A. J. (2004). Clinical correlates and symptom patterns of anxious depression among patients with major depressive disorder in STAR*D. *Psychological Medicine*, 34(7), 1299–1308.
- Fazel, S., Bains, P., & Doll, H. (2006). Substance abuse and dependence in prisoners: a systematic review. *Addiction (Abingdon, England)*, 101(2), 181–191. <https://doi.org/10.1111/j.1360-0443.2006.01316.x>
- Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23000 prisoners: a systematic review of 62 surveys. *Lancet (London, England)*, 359(9306), 545–550. [https://doi.org/10.1016/S0140-6736\(02\)07740-1](https://doi.org/10.1016/S0140-6736(02)07740-1)
- Fazel, S., Hayes, A. J., Bartellas, K., Clerici, M., & Trestman, R. (2016). The mental health of prisoners: a review of prevalence, adverse outcomes and interventions. *The Lancet. Psychiatry*, 3(9), 871–881. [https://doi.org/10.1016/S2215-0366\(16\)30142-0](https://doi.org/10.1016/S2215-0366(16)30142-0)
- Fazel, S., & Seewald, K. (2012). Severe mental illness in 33 588 prisoners worldwide: systematic review and meta-regression analysis. *The British Journal of Psychiatry*, 200(5), 364–373. <https://doi.org/10.1192/bjp.bp.111.096370>
- Fazel, S., Yoon, I. A., & Hayes, A. J. (2017). Substance use disorders in prisoners: an updated systematic review and meta-regression analysis in recently incarcerated men and women. *Addiction (Abingdon, England)*, 112(10), 1725–1739. <https://doi.org/10.1111/add.13877>
- Fellner J. (2006). A Conundrum for Corrections, A Tragedy for Prisoners: Prisons As Facilities for the Mentally Ill - Retrieved January 20, 2019, from <https://docplayer.net/66322030->
- Fiszman, A., Cabizuca, M., Lanfredi, C., & Figueira, I. (2005). The cross-cultural adaptation to Portuguese of the Trauma History Questionnaire to identify traumatic experiences. *Revista Brasileira De Psiquiatria (Sao Paulo, Brazil: 1999)*, 27(1), 63–66. <https://doi.org/S1516-44462005000100014>

- Freeman, M., Nkomo, N., Kafaar, Z., & Kelly, K. (2008). Mental disorder in people living with HIV/AIDS in South Africa. *South African Journal of Psychology*, 38(3), 489–500.
- Garber, J., & Weersing, V. R. (2010). Comorbidity of Anxiety and Depression in Youth: Implications for Treatment and Prevention. *Clinical Psychology: A Publication of the Division of Clinical Psychology of the American Psychological Association*, 17(4), 293–306. <https://doi.org/10.1111/j.1468-2850.2010.01221.x>
- García-Guerrero, J., & Marco, A. (2012). [Overcrowding in prisons and its impact on health]. *Revista Espanola De Sanidad Penitenciaria*, 14(3), 106–113. <https://doi.org/10.4321/S1575-06202012000300006>
- Gariépy, G., Honkaniemi, H., & Quesnel-Vallée, A. (2016). Social support and protection from depression: systematic review of current findings in Western countries. *The British Journal of Psychiatry: The Journal of Mental Science*, 209(4), 284–293. <https://doi.org/10.1192/bjp.bp.115.169094>
- Gemeda, T. T. (2014). Prevalence and Predictors of Psychopathological Symptoms among Inmates in Dilla Correction Center, SNNPR, Ethiopia. *International Journal of Criminal Justice Sciences*, 9(1), 110.
- Ghafoori, B., Neria, Y., Gameroff, M. J., Olfson, M., Lantigua, R., Shea, S., & Weissman, M. M. (2009). Screening for generalized anxiety disorder symptoms in the wake of terrorist attacks: a study in primary care. *Journal of Traumatic Stress*, 22(3), 218–226. <https://doi.org/10.1002/jts.20419>
- Ghanem, M., Gadallah, M., Meky, F. A., Mourad, S., & El-Kholy, G. (2009). National Survey of Prevalence of Mental Disorders in Egypt: preliminary survey. *Eastern Mediterranean Health Journal = La Revue De Sante De La Mediterranee Orientale = Al-Majallah Al-Sihhiyah Li-Sharq Al-Mutawassit*, 15(1), 65–75.
- Golier, J. A., Yehuda, R., Bierer, L. M., Mitropoulou, V., New, A. S., Schmeidler, J., ... Siever, L. J. (2003). The relationship of borderline personality disorder to posttraumatic stress disorder and traumatic events. *The American Journal of Psychiatry*, 160(11), 2018–2024. <https://doi.org/10.1176/appi.ajp.160.11.2018>
- Gonzalez, J. M. R., & Connell, N. M. (2014). Mental Health of Prisoners: Identifying Barriers to Mental Health Treatment and Medication Continuity. *American Journal of Public Health*, 104(12), 2328. <https://doi.org/10.2105/AJPH.2014.302043>

- Goomany, A., & Dickinson, T. (2015). The influence of prison climate on the mental health of adult prisoners: a literature review. *Journal of Psychiatric and Mental Health Nursing*, 22(6), 413–422. <https://doi.org/10.1111/jpm.12231>
- Grant, D. M., Beck, J. G., Marques, L., Palyo, S. A., & Clapp, J. D. (2008). The structure of distress following trauma: posttraumatic stress disorder, major depressive disorder, and generalized anxiety disorder. *Journal of Abnormal Psychology*, 117(3), 662–672. <https://doi.org/10.1037/a0012591>
- Grav, S., Hellzèn, O., Romild, U., & Stordal, E. (2012). Association between social support and depression in the general population: the HUNT study, a cross-sectional survey. *Journal of Clinical Nursing*, 21(1–2), 111–120. <https://doi.org/10.1111/j.1365-2702.2011.03868.x>
- Greenberg, G. A., & Rosenheck, R. A. (2008). Jail incarceration, homelessness, and mental health: a national study. *Psychiatric Services (Washington, D.C.)*, 59(2), 170–177. <https://doi.org/10.1176/ps.2008.59.2.170>
- Gunter, T. D., Chibnall, J. T., Antoniak, S. K., McCormick, B., & Black, D. W. (2012). Relative Contributions of Gender and Traumatic Life Experience to the Prediction of Mental Disorders in a Sample of Incarcerated Offenders. *Behavioral Sciences & the Law*, 30(5), 615–630. <https://doi.org/10.1002/bsl.2037>
- Gureje, O., Lasebikan, V. O., Kola, L., & Makanjuola, V. A. (2006). Lifetime and 12-month prevalence of mental disorders in the Nigerian Survey of Mental Health and Well-Being. *The British Journal of Psychiatry*, 188(5), 465–471. <https://doi.org/10.1192/bjp.188.5.465>
- Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2008). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology & Community Health*, 62(6), 538–544.
- Hardy, T., & Snowden, M. (2010). Familial impact of imprisonment and the community specialist practitioner. *Community Practitioner*, 83(10), 21+.
- Haney, C. (2002). Psychological Impact of Incarceration: Implications for Post-Prison Adjustment. National Criminal Justice Reference Service. <https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=244714>
- Harandi, T. F., Taghinasab, M. M., & Nayeri, T. D. (2017). The correlation of social support with mental health: A meta-analysis. *Electronic Physician*, 9(9), 5212–5222. <https://doi.org/10.19082/5212>

- Harlow, C. W. (2003). Education and correctional populations. Bureau of Justice Statistics Special Report, U.S. Department of Justice. NCJ 195670.
- Harman, J. J., Smith, V. E., & Egan, L. C. (2007). The Impact of Incarceration On Intimate Relationships: *Criminal Justice and Behavior*. <https://doi.org/10.1177/0093854807299543>
- Hartwell, S. W. (2004). Comparison of offenders with mental illness only and offenders with dual diagnoses. *Psychiatric Services (Washington, D.C.)*, 55(2), 145–150. <https://doi.org/10.1176/appi.ps.55.2.145>
- Hasin, D. S., Stinson, F. S., Ogburn, E., & Grant, B. F. (2007). Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry*, 64(7), 830–842. <https://doi.org/10.1001/archpsyc.64.7.830>
- Haug, T. T., Mykletun, A., & Dahl, A. A. (2004). The association between anxiety, depression, and somatic symptoms in a large population: the HUNT-II study. *Psychosomatic Medicine*, 66(6), 845–851. <https://doi.org/10.1097/01.psy.0000145823.85658.0c>
- Hawton, K., Linsell, L., Adeniji, T., Sariaslan, A., & Fazel, S. (2014). Self-harm in prisons in England and Wales: an epidemiological study of prevalence, risk factors, clustering, and subsequent suicide. *The Lancet*, 383(9923), 1147–1154. [https://doi.org/10.1016/S0140-6736\(13\)62118-2](https://doi.org/10.1016/S0140-6736(13)62118-2)
- Heffernan, E., Anderson, K., Dev, A., & Kinner, S. A. (2012). Prevalence of mental illness among Aboriginal and Torres Strait Islander people in Queensland prisons. *Medical Journal of Australia*, 197(1), 37–41. <https://doi.org/10.5694/mja11.11352>
- Henderson, C., Evans-Lacko, S., & Thornicroft, G. (2013). Mental Illness Stigma, Help Seeking, and Public Health Programs. *American Journal of Public Health*, 103(5), 777–780. <https://doi.org/10.2105/AJPH.2012.301056>
- Hetherington, E. M. (2003). Intimate Pathways: Changing Patterns in Close Personal Relationships across Time. *Family Relations*, 52(4), 318–331.
- Hills, H., Siegfried, C., & Ickowitz, A. (2004). EFFECTIVE PRISON MENTAL HEALTH SERVICES Guidelines To Expand and Improve Treatment. National Institute of Corrections. <http://www.nicic.org>
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social Relationships and Mortality Risk: A Meta-analytic Review. *PLoS Medicine*, 7(7). <https://doi.org/10.1371/journal.pmed.1000316>

- Hooper, L. M., Stockton, P., Krupnick, J. L., & Green, B. L. (2011). Development, Use, and Psychometric Properties of the Trauma History Questionnaire. *Journal of Loss and Trauma, 16*(3), 258–283. <https://doi.org/10.1080/15325024.2011.572035>
- Humber, N., Webb, R., Piper, M., Appleby, L., & Shaw, J. (2013). A national case–control study of risk factors among prisoners in England and Wales. *Social Psychiatry and Psychiatric Epidemiology, 48*(7), 1177–1185. <https://doi.org/10.1007/s00127-012-0632-4>
- Israel, G. D. (1992). *Determining sample size*. University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS. Retrieved from <http://zulsidi.tripod.com/pdf/DeterminingSampleSizes.pdf>
- Jäggi, L. J., Mezuk, B., Watkins, D. C., & Jackson, J. S. (2016). The Relationship between Trauma, Arrest, and Incarceration History among Black Americans: Findings from the National Survey of American Life. *Society and Mental Health, 6*(3), 187–206. <https://doi.org/10.1177/2156869316641730>
- Jenkins, R., Mbatia, J., Singleton, N., & White, B. (2010). Common Mental Disorders and Risk Factors in Urban Tanzania. *International Journal of Environmental Research and Public Health, 7*(6), 2543–2558. <https://doi.org/10.3390/ijerph7062543>
- Jobson, L., & O’Kearney, R. (2008). Cultural differences in personal identity in post-traumatic stress disorder. *British Journal of Clinical Psychology, 47*(1), 95–109. <https://doi.org/10.1348/014466507X235953>
- Johnson, H., & Thompson, A. (2008). The development and maintenance of post-traumatic stress disorder (PTSD) in civilian adult survivors of war trauma and torture: a review. *Clinical Psychology Review, 28*(1), 36–47. <https://doi.org/10.1016/j.cpr.2007.01.017>
- Joukamaa, M. (1995). Psychiatric morbidity among Finnish prisoners with special reference to socio-demographic factors: results of the Health Survey of Finnish Prisoners (Wattu Project). *Forensic Science International, 73*(2), 85–91.
- Kadri, N., Agoub, M., Assouab, F., Tazi, M. A., Didouh, A., Stewart, R., & Moussaoui, D. (2010). Moroccan national study on prevalence of mental disorders: a community-based epidemiological study. *Acta Psychiatrica Scandinavica, 121*(1), 71–74. <https://doi.org/10.1111/j.1600-0447.2009.01431.x>
- Kagee, A., Coetzee, B., Saal, W., & Nel, A. (2015). Using the Beck Anxiety Inventory Among South Africans Living With HIV: Exploratory and Higher Order Factor Analyses. *Measurement and*

- Evaluation in Counseling and Development*, 48(3), 204–213.
<https://doi.org/10.1177/0748175615578734>
- Kalmijn, M., & Monden, C. (2004). Are there positive effects of divorce on health? Reconsidering the role of marital quality. Retrieved November 29, 2018, from https://www.researchgate.net/publication/228891525_
- Kaufman, J., & Charney, D. (2000). Comorbidity of mood and anxiety disorders. *Depression and Anxiety*, 12 Suppl 1, 69–76. [https://doi.org/10.1002/1520-6394\(2000\)12:1+<69::AID-DA9>3.0.CO;2-K](https://doi.org/10.1002/1520-6394(2000)12:1+<69::AID-DA9>3.0.CO;2-K)
- Kauye, F., Jenkins, R., & Rahman, A. (2014). Training primary health care workers in mental health and its impact on diagnoses of common mental disorders in primary care of a developing country, Malawi: a cluster-randomized controlled trial. *Psychological Medicine*, 44(03), 657–666. <https://doi.org/10.1017/S0033291713001141>
- Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Chatterji, S., Lee, S., Ormel, J., ... Wang, P. S. (2009). The global burden of mental disorders: An update from the WHO World Mental Health (WMH) Surveys. *Epidemiologia E Psichiatria Sociale*, 18(1), 23.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593–602. <https://doi.org/10.1001/archpsyc.62.6.593>
- Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, Severity, and Comorbidity of Twelve-month DSM-IV Disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry*, 62(6), 617–627. <https://doi.org/10.1001/archpsyc.62.6.617>
- Kinyanjui, D. W., & Atwoli, L. (2013). Substance use among inmates at the Eldoret prison in Western Kenya. *BMC Psychiatry*, 13, 53. <https://doi.org/10.1186/1471-244X-13-53>
- Kortse, G. & Kawiya, H. (2013). Kawiya, personal communication: 3rd Malawi Mental Health Research and Practice Development Conference. Retrieved from <http://in2mentalhealth.com/2013/04/27/malawi-mental-health-research-and-practice-development-conference/>
- Kumar, V., & Daria, U. (2013). Psychiatric morbidity in prisoners. *Indian Journal of Psychiatry*, 55(4), 366. <https://doi.org/10.4103/0019-5545.120562>
- Lamers, F., van Oppen, P., Comijs, H. C., Smit, J. H., Spinhoven, P., van Balkom, A. J. L. M., ... Penninx, B. W. J. H. (2011). Comorbidity patterns of anxiety and depressive disorders in a large

- cohort study: the Netherlands Study of Depression and Anxiety (NESDA). *The Journal of Clinical Psychiatry*, 72(3), 341–348. <https://doi.org/10.4088/JCP.10m06176blu>
- Langhaug, L. F., Pascoe, S. J., Mavhu, W., Woelk, G., Sherr, L., Hayes, R. J., & Cowan, F. M. (2010). High Prevalence of Affective Disorders among Adolescents Living in Rural Zimbabwe. *Journal of Community Health*, 35(4), 355–364. <https://doi.org/10.1007/s10900-010-9261-6>
- Lenze, E. J., Mulsant, B. H., Mohlman, J., Shear, M. K., Dew, M. A., Schulz, R., ... Reynolds, C. F. (2005). Generalized anxiety disorder in late life: lifetime course and comorbidity with major depressive disorder. *The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry*, 13(1), 77–80. <https://doi.org/10.1176/appi.ajgp.13.1.77>
- Lenzenweger, M. F., Lane, M. C., Loranger, A. W., & Kessler, R. C. (2007). DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, 62(6), 553–564. <https://doi.org/10.1016/j.biopsych.2006.09.019>
- Levy, M., Burns, R. J., Deschênes, S. S., & Schmitz, N. (2017). Does Social Support Moderate the Association Among Major Depression, Generalized Anxiety Disorder, and Functional Disability in Adults With Diabetes? *Psychosomatics*, 58(4), 364–374. <https://doi.org/10.1016/j.psych.2017.03.004>
- Leyfer, O. T., Ruberg, J. L., & Woodruff-Borden, J. (2006). Examination of the utility of the Beck Anxiety Inventory and its factors as a screener for anxiety disorders. *Journal of Anxiety Disorders*, 20(4), 444–458. <https://doi.org/10.1016/j.janxdis.2005.05.004>
- Liebling, A., & Maruna, S. (2013). *The Effects of Imprisonment*. Routledge.
- Lilly, M. M., Ph.D., N. P., Best, S. R., Metzler, T., & Marmar, C. R. (2009). Gender and PTSD: What Can We Learn From Female Police Officers? *Journal of Anxiety Disorders*, 23(6), 767–774. <https://doi.org/10.1016/j.janxdis.2009.02.015>
- Lim, G. Y., Tam, W. W., Lu, Y., Ho, C. S., Zhang, M. W., & Ho, R. C. (2018). Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. *Scientific Reports*, 8. <https://doi.org/10.1038/s41598-018-21243-x>
- Lines, R. (2008). The right to health of prisoners in international human rights law. *International Journal of Prisoner Health*, 4(1), 3–53. <https://doi.org/10.1080/17449200701862145>

- López-Pérez, B., Deepröse, C., & Hanoch, Y. (2018). Prospective mental imagery as its link with anxiety and depression in prisoners. *PLoS ONE*, *13*(3). <https://doi.org/10.1371/journal.pone.0191551>
- Lovell, D., Gagliardi, G. J., & Peterson, P. D. (2002). Recidivism and Use of Services Among Persons With Mental Illness After Release From Prison. *Psychiatric Services*, *53*(10), 1290–1296. <http://doi.org/10.1176/appi.ps.53.10.1290>
- Lubman, D. I., Allen, N. B., Rogers, N., Cementon, E., & Bonomo, Y. (2007). The impact of co-occurring mood and anxiety disorders among substance-abusing youth. *Journal of Affective Disorders*, *103*(1–3), 105–112. <https://doi.org/10.1016/j.jad.2007.01.011>
- Lynch, S., DeHart, D., Belknap, J., & Green, B. (2012). Women’s pathways to jail: The roles and intersections of serious mental illness and trauma. *Washington, DC: US Department of Justice, Bureau of Justice Assistance*. Retrieved from https://www.bja.gov/publications/women_pathways_to_jail.pdf
- Lynch, S. M., DeHart, D. D., Belknap, J. E., Green, B. L., Dass-Brailsford, P., Johnson, K. A., & Whalley, E. (2014). A Multisite Study of the Prevalence of Serious Mental Illness, PTSD, and Substance Use Disorders of Women in Jail. *Psychiatric Services*, *65*(5), 670–674. <https://doi.org/10.1176/appi.ps.201300172>
- Malawi. (2008). *Country Reports on Human Rights Practices for 2008 Vol.1*. Government Printing Office. <http://www.state.gov/j/drl/rls/hrrpt/2008/af/119011.htm>
- Mann, C. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency Medicine Journal: EMJ*, *20*(1), 54–60. <https://doi.org/10.1136/emj.20.1.54>
- Martin, M. S., Hynes, K., Hatcher, S., & Colman, I. (2016). Diagnostic Error in Correctional Mental Health: Prevalence, Causes, and Consequences. *Journal of Correctional Health Care: The Official Journal of the National Commission on Correctional Health Care*, *22*(2), 109–117. <https://doi.org/10.1177/1078345816634327>
- McNiel, D. E., Binder, R. L., & Robinson, J. C. (2005). Incarceration Associated With Homelessness, Mental Disorder, and Co-occurring Substance Abuse. *Psychiatric Services*, *56*(7), 840–846. <http://doi.org/10.1176/appi.ps.56.7.840>
- Melartin, T. K., Rytälä, H. J., Leskelä, U. S., Lestelä-Mielonen, P. S., Sokero, T. P., & Isometsä, E. T. (2002). Current comorbidity of psychiatric disorders among DSM-IV major depressive disorder

- patients in psychiatric care in the Vantaa Depression Study. *The Journal of Clinical Psychiatry*, 63(2), 126–134.
- Mir, J., Kastner, S., Priebe, S., Konrad, N., Ströhle, A., & Mundt, A. P. (2015). Treating substance abuse is not enough: comorbidities in consecutively admitted female prisoners. *Addictive Behaviors*, 46, 25–30. <https://doi.org/10.1016/j.addbeh.2015.02.016>
- Miranda, J., Chung, J. Y., Green, B. L., Krupnick, J., Siddique, J., Revicki, D. A., & Belin, T. (2003). Treating depression in predominantly low-income young minority women: a randomized controlled trial. *JAMA*, 290(1), 57–65. <https://doi.org/10.1001/jama.290.1.57>
- Miriti, G. M., & Kimani, M. W. (2017). Analysis Of Prisons Rehabilitation Programs On Behaviour Reformation Of Offenders In Kenya: A Case Study Of Kisumu Main Prison. *European Journal of Business and Social Sciences*, Vol. 6, 59–85.
- Moffitt, T. E., Harrington, H., Caspi, A., Kim-Cohen, J., Goldberg, D., Gregory, A. M., & Poulton, R. (2007). Depression and generalized anxiety disorder: cumulative and sequential comorbidity in a birth cohort followed prospectively to age 32 years. *Archives of General Psychiatry*, 64(6), 651–660. <https://doi.org/10.1001/archpsyc.64.6.651>
- Morgan, R. D., Flora, D. B., Kroner, D. G., Mills, J. F., Varghese, F., & Steffan, J. S. (2012). Treating Offenders with Mental Illness: A Research Synthesis. *Law and Human Behavior*, 36(1), 37–50. <https://doi.org/10.1037/h0093964>
- Morina, N., Deeproose, C., Pusowski, C., Schmid, M., & Holmes, E. A. (2011). Prospective mental imagery in patients with major depressive disorder or anxiety disorders. *Journal of Anxiety Disorders*, 25(8), 1032–1037. <https://doi.org/10.1016/j.janxdis.2011.06.012>
- Moriarity, D. P., McArthur, B. A., Ellman, L. M., Coe, C. L., Abramson, L. Y., & Alloy, L. B. (2018). Immunocognitive Model of Depression Secondary to Anxiety in Adolescents. *Journal of Youth and Adolescence*, 47(12), 2625–2636. <https://doi.org/10.1007/s10964-018-0905-7>
- Mueser, K. T., Salyers, M. P., Rosenberg, S. D., Ford, J. D., Fox, L., & Carty, P. (2001). Psychometric evaluation of trauma and posttraumatic stress disorder assessments in persons with severe mental illness. *Psychological Assessment*, 13(1), 110–117.
- Mundt, A. P., Alvarado, R., Fritsch, R., Poblete, C., Villagra, C., Kastner, S., & Priebe, S. (2013). Prevalence rates of mental disorders in Chilean prisons. 8(7), e69109. <https://doi.org/10.1371/journal.pone.0069109>

- Nacher, M., Ayhan, G., Arnal, R., Basurko, C., Huber, F., Pastre, A., ... About, V. (2018). High prevalence rates for multiple psychiatric conditions among inmates at French Guiana's correctional facility: diagnostic and demographic factors associated with violent offending and previous incarceration. *BMC Psychiatry*, *18*. <https://doi.org/10.1186/s12888-018-1742-7>
- Naidoo, S., & Mkize, D. (2012). Prevalence of mental disorders in a prison population in Durban, South Africa. *African Journal of Psychiatry*, *15*(1). <https://doi.org/10.4314/ajpsy.v15i1.4>
- Ndetei, D. M., Khasakhala, L. I., Kuria, M. W., Mutiso, V. N., Ongecha-Owuor, F. A., & Kokonya, D. A. (2009). The prevalence of mental disorders in adults in different level general medical facilities in Kenya: a cross-sectional study. *Annals of General Psychiatry*, *8*, 1. <https://doi.org/10.1186/1744-859X-8-1>
- Nielsens O, & Misrachi S. (2005). Prevalence of psychoses on reception to male prisons in New South Wales. *Australian & New Zealand Journal of Psychiatry*, *39*(6), 453–459 7p.
- Nseluke, M. T., & Siziya, S. (2011). Prevalence and Socio-Demographic Correlates for Mental Illness Among Inmates at Lusaka Central Prison, Zambia. *Medical Journal of Zambia*, *38*(2), 3-7–7.
- Orpana, H., Vachon, J., Pearson, C., Elliott, K., Smith, M., & Branchard, B. (2016). Correlates of well-being among Canadians with mood and/or anxiety disorders. *Health Promotion and Chronic Disease Prevention in Canada : Research, Policy and Practice*, *36*(12), 302–313.
- Osasona, S. O., & Koleoso, O. N. (2015). Prevalence and correlates of depression and anxiety disorder in a sample of inmates in a Nigerian prison. *The International Journal of Psychiatry in Medicine*, *50*(2), 203–218. <https://doi.org/10.1177/0091217415605038>
- Palijan, T. Z., Muzinić, L., & Radeljak, S. (2009). Psychiatric comorbidity in forensic psychiatry. *Psychiatria Danubina*, *21*(3), 429–436.
- Palijan, T. Z., Radeljak, S., Kovac, M., & Kovacević, D. (2010). Relationship between comorbidity and violence risk assessment in forensic psychiatry - the implication of neuroimaging studies. *Psychiatria Danubina*, *22*(2), 253–256.
- Parker, G. F. (2015). Impact of a Mental Health Training Course for Correctional Officers on a Special Housing Unit. *Psychiatric Services*. <https://doi.org/10.1176/ps.2009.60.5.640>
- Parsons, S., Walker, L., & Grubin, D. (2001). Prevalence of mental disorder in female remand prisons. *Journal of Forensic Psychiatry*, *12*(1), 194–202. <https://doi.org/10.1080/09585180010027941>
- Patel, V., Araya, R., Chowdhary, N., King, M., Kirkwood, B., Nayak, S., ... Weiss, H. A. (2008). Detecting common mental disorders in primary care in India: a comparison of five screening

- questionnaires. *Psychological Medicine*, 38(2), 221–228.
<https://doi.org/10.1017/S0033291707002334>
- Patel, V., Chisholm, D., Parikh, R., Charlson, F. J., Degenhardt, L., Dua, T., ... Whiteford, H. (2016). Addressing the burden of mental, neurological, and substance use disorders: key messages from Disease Control Priorities, 3rd edition. *The Lancet*, 387(10028), 1672–1685.
[https://doi.org/10.1016/S0140-6736\(15\)00390-6](https://doi.org/10.1016/S0140-6736(15)00390-6)
- Patel, V., & Cohen, A. (2003). Mental health services in primary care in “developing” countries. *World Psychiatry*, 2(3), 163–164.
- Patel, V., & Kleinman, A. (2003). Poverty and common mental disorders in developing countries. *Bulletin of the World Health Organization*, 81(8), 609–615. <https://doi.org/10.1590/S0042-96862003000800011>
- Perälä, J., Suvisaari, J., Saarni, S. I., Kuoppasalmi, K., Isometsä, E., Pirkola, S., ... Lönnqvist, J. (2007). Lifetime prevalence of psychotic and bipolar I disorders in a general population. *Archives of General Psychiatry*, 64(1), 19–28. <https://doi.org/10.1001/archpsyc.64.1.19>
- Peter, P. J., de Mola, C. L., de Matos, M. B., Coelho, F. M., Pinheiro, K. A., da Silva, R. A., ... Quevedo, L. A. (2017). Association between perceived social support and anxiety in pregnant adolescents. *Revista Brasileira De Psiquiatria (Sao Paulo, Brazil: 1999)*, 39(1), 21–27.
<https://doi.org/10.1590/1516-4446-2015-1806>
- Pettus-Davis, C., Howard, M. O., Roberts-Lewis, A., & Scheyett, A. M. (2011). Naturally occurring social support in interventions for former prisoners with substance use disorders: Conceptual framework and program model. *Journal of Criminal Justice*, 39(6), 479–488.
<https://doi.org/10.1016/j.jcrimjus.2011.09.002>
- Pham, P. N., Weinstein, H. M., & Longman, T. (2004). Trauma and PTSD Symptoms in Rwanda: Implications for Attitudes Toward Justice and Reconciliation. *JAMA*, 292(5), 602–612.
<https://doi.org/10.1001/jama.292.5.602>
- Pietrzak, R. H., Tracy, M., Galea, S., Kilpatrick, D. G., Ruggiero, K. J., Hamblen, J. L., ... Norris, F. H. (2012). Resilience in the face of disaster: prevalence and longitudinal course of mental disorders following hurricane Ike. *PLoS One*, 7(6), e38964. <https://doi.org/10.1371/journal.pone.0038964>
- Piselli, M., Elisei, S., Murgia, N., Quartesan, R., & Abram, K. M. (2009). Co-occurring psychiatric and substance use disorders among male detainees in Italy. *International Journal of Law and Psychiatry*, 32(2), 101–107. <https://doi.org/10.1016/j.ijlp.2009.01.006>

- Pondé, M. P., Caron, J., Mendonça, M. S. S., Freire, A. C. C., & Moreau, N. (2014). The Relationship Between Mental Disorders and Types of Crime in Inmates in a Brazilian Prison. *Journal of Forensic Sciences*, *59*(5), 1307–1314. <https://doi.org/10.1111/1556-4029.12462>
- Posner, K., Brent, D., Lucas, C., Gould, M., Stanley, B., Brown, G., ... others. (2008). Columbia-suicide severity rating scale (C-SSRS). *New York, NY: Columbia University Medical Center*. Retrieved from <http://www.bcbst.com/docs/providers/Behavioral-health-toolkit/c-ssrs-since-last-visit.pdf>
- Priebe, S., Bogic, M., Ajdukovic, D., Franciskovic, T., Galeazzi, G. M., Kucukalic, A., ... Schützwohl, M. (2010). Mental disorders following war in the Balkans: a study in 5 countries. *Archives of General Psychiatry*, *67*(5), 518–528. <https://doi.org/10.1001/archgenpsychiatry.2010.37>
- Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M. R., & Rahman, A. (2007). No health without mental health. *Lancet (London, England)*, *370*(9590), 859–877. [https://doi.org/10.1016/S0140-6736\(07\)61238-0](https://doi.org/10.1016/S0140-6736(07)61238-0)
- Prins, S. J. (2014). The Prevalence of Mental Illnesses in U.S. State Prisons: A Systematic Review. *Psychiatric Services (Washington, D.C.)*, *65*(7), 862–872. <https://doi.org/10.1176/appi.ps.201300166>
- Quarantini, L. C., Netto, L. R., Andrade-Nascimento, M., Almeida, A. G., Sampaio, A. S., Miranda-Scippa, A., ... Koenen, K. C. (2009). [Comorbid mood and anxiety disorders in victims of violence with posttraumatic stress disorder]. *Revista Brasileira De Psiquiatria (Sao Paulo, Brazil: 1999)*, *31 Suppl 2*, S66-76.
- Quiñones, A. R., Thielke, S. M., Clark, M. E., Phillips, K. M., Elnitsky, C., & Andresen, E. M. (2016). Validity of Center for Epidemiologic Studies Depression (CES-D) scale in a sample of Iraq and Afghanistan Veterans. *SAGE Open Medicine*, *4*, 2050312116643906. <https://doi.org/10.1177/2050312116643906>
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401.
- Remes, O., Brayne, C., van der Linde, R., & Lafortune, L. (2016). A systematic review of reviews on the prevalence of anxiety disorders in adult populations. *Brain and Behavior*, *6*(7), e00497. <https://doi.org/10.1002/brb3.497>
- Roberts, B., & Browne, J. (2011). A systematic review of factors influencing the psychological health of conflict-affected populations in low- and middle-income countries. *Global Public Health*, *6*(8), 814–829. <https://doi.org/10.1080/17441692.2010.511625>

- Roberts, B., Ocaka, K. F., Browne, J., Oyok, T., & Sondorp, E. (2008). Factors associated with post-traumatic stress disorder and depression amongst internally displaced persons in northern Uganda. *BMC Psychiatry*, 8, 38. <https://doi.org/10.1186/1471-244X-8-38>
- Robinson, G., & Crow, I. (2009). Introducing Rehabilitation: The Theoretical Context. In *Offender Rehabilitation: Theory, Research and Practice* (pp. 1–15). London: SAGE Publications Ltd. <https://doi.org/10.4135/9781446216460>
- Roohafza, H. R., Afshar, H., Keshteli, A. H., Mohammadi, N., Feizi, A., Taslimi, M., & Adibi, P. (2014). What's the role of perceived social support and coping styles in depression and anxiety? *Journal of Research in Medical Sciences: The Official Journal of Isfahan University of Medical Sciences*, 19(10), 944–949.
- Roy-Byrne, P. P., Stang, P., Wittchen, H. U., Ustun, B., Walters, E. E., & Kessler, R. C. (2000). Lifetime panic-depression comorbidity in the National Comorbidity Survey. Association with symptoms, impairment, course and help-seeking. *The British Journal of Psychiatry: The Journal of Mental Science*, 176, 229–235.
- Rüsch, N., Evans-Lacko, S. E., Henderson, C., Flach, C., & Thornicroft, G. (2011). Knowledge and attitudes as predictors of intentions to seek help for and disclose a mental illness. *Psychiatric Services (Washington, D.C.)*, 62(6), 675–678. https://doi.org/10.1176/ps.62.6.pss6206_0675
- Rutherford, M., & Duggan, S. (2009). Meeting complex health needs in prisons. *Public Health*, 123(6), 415–418. <https://doi.org/10.1016/j.puhe.2009.04.006>
- Saatcioglu, O., Yapici, A., & Cakmak, D. (2008). Quality of life, depression and anxiety in alcohol dependence. *Drug and Alcohol Review*, 27(1), 83–90. <https://doi.org/10.1080/09595230701711140>
- Santini, Z. I., Koyanagi, A., Tyrovolas, S., Mason, C., & Haro, J. M. (2015). The association between social relationships and depression: a systematic review. *Journal of Affective Disorders*, 175, 53–65. <https://doi.org/10.1016/j.jad.2014.12.049>
- Schubert, E. C., Duininck, M., & Shlafer, R. J. (2016). Visiting Mom: A pilot evaluation of a prison-based visiting program serving incarcerated mothers and their minor children. *Journal of Offender Rehabilitation*, 55(4), 213. <https://doi.org/10.1080/10509674.2016.1159641>
- Seo, H.-J., Jung, Y.-E., Kim, T.-S., Kim, J.-B., Lee, M.-S., Kim, J.-M., ... Jun, T.-Y. (2011). Distinctive clinical characteristics and suicidal tendencies of patients with anxious depression. *The Journal*

- of Nervous and Mental Disease*, 199(1), 42–48.
<https://doi.org/10.1097/NMD.0b013e3182043b60>
- Sepehrmanesh, Z., Ahmadvand, A., Akasheh, G., & Saei, R. (2014). Prevalence of Psychiatric Disorders and Related Factors in Male Prisoners. *Iranian Red Crescent Medical Journal*, 16(1).
<https://doi.org/10.5812/ircmj.15205>
- Steel, Z., Chey, T., Silove, D., Marnane, C., Bryant, R. A., & van Ommeren, M. (2009). Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *JAMA*, 302(5), 537–549. <https://doi.org/10.1001/jama.2009.1132>
- Steel, Z., Marnane, C., Iranpour, C., Chey, T., Jackson, J. W., Patel, V., & Silove, D. (2014). The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013. *International Journal of Epidemiology*, 43(2), 476–493. <https://doi.org/10.1093/ije/dyu038>
- Steffens, D. C., & McQuoid, D. R. (2005). Impact of symptoms of generalized anxiety disorder on the course of late-life depression. *The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry*, 13(1), 40–47.
<https://doi.org/10.1176/appi.ajgp.13.1.40>
- Stewart, R. C., Umar, E., Tomenson, B., & Creed, F. (2014). A cross-sectional study of antenatal depression and associated factors in Malawi. *Archives of Women's Mental Health*, 17(2), 145–154. <https://doi.org/10.1007/s00737-013-0387-2>
- St-Jean-Trudel, E., Guay, S., & Marchand, A. (2009). The relationship between social support, psychological stress and the risk of developing anxiety disorders in men and women: results of a national study. *Canadian Journal of Public Health = Revue Canadienne De Sante Publique*, 100(2), 148–152.
- Stockings, E., Degenhardt, L., Lee, Y. Y., Mihalopoulos, C., Liu, A., Hobbs, M., & Patton, G. (2015). Symptom screening scales for detecting major depressive disorder in children and adolescents: a systematic review and meta-analysis of reliability, validity and diagnostic utility. *Journal of Affective Disorders*, 174, 447–463. <https://doi.org/10.1016/j.jad.2014.11.061>
- Sweetland, A. C., Belkin, G. S., & Verdelli, H. (2014). Measuring depression and anxiety in sub-Saharan Africa. *Depression and Anxiety*, 31(3), 223–232. <https://doi.org/10.1002/da.22142>

- Taylor, M. G., & Lynch, S. M. (2004). Trajectories of impairment, social support, and depressive symptoms in later life. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 59(4), S238-246.
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52(2), 145–161. <https://doi.org/10.1177/0022146510395592>
- Thomas, J. L., Jones, G. N., Scarinci, I. C., Mehan, D. J., & Brantley, P. J. (2001). The utility of the CES-D as a depression screening measure among low-income women attending primary care clinics. The Center for Epidemiologic Studies-Depression. *International Journal of Psychiatry in Medicine*, 31(1), 25–40. <https://doi.org/10.2190/FUFR-PK9F-6U10-JXRK>
- Trestman, R. L., Ford, J., Zhang, W., & Wiesbrock, V. (2007). Current and Lifetime Psychiatric Illness Among Inmates Not Identified as Acutely Mentally Ill at Intake in Connecticut’s Jails. *Journal of the American Academy of Psychiatry and the Law Online*, 35(4), 490–500.
- Uchino, B. N. (2006). Social support and health: a review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine*, 29(4), 377–387. <https://doi.org/10.1007/s10865-006-9056-5>
- Vicens, E., Tort, V., Dueñas, R. M., Muro, Á., Pérez-Arnau, F., Arroyo, J. M., ... Sarda, P. (2011). The prevalence of mental disorders in Spanish prisons. *Criminal Behaviour & Mental Health*, 21(5), 321–332. <https://doi.org/10.1002/cbm.815>
- Vigo, D., Thornicroft, G., & Atun, R. (2016). Estimating the true global burden of mental illness. *The Lancet Psychiatry*, 3(2), 171–178. [https://doi.org/10.1016/S2215-0366\(15\)00505-2](https://doi.org/10.1016/S2215-0366(15)00505-2)
- Vilagut, G., Forero, C. G., Barbaglia, G., & Alonso, J. (2016). Screening for Depression in the General Population with the Center for Epidemiologic Studies Depression (CES-D): A Systematic Review with Meta-Analysis. *PLoS ONE*, 11(5). <https://doi.org/10.1371/journal.pone.0155431>
- Voller, F., Silvestri, C., Martino, G., Fanti, E., Bazzlerla, G., Ferrari, F., ... Di Fiandra, T. (2016). Health conditions of inmates in Italy. *BMC Public Health*, 16. <https://doi.org/10.1186/s12889-016-3830-2>
- Wagner, W., Hansen, K., & Kronberger, N. (2014). Quantitative and qualitative research across cultures and languages: cultural metrics and their application. *Integrative Psychological & Behavioral Science*, 48(4), 418–434. <https://doi.org/10.1007/s12124-014-9269-z>
- Wallace, D., Fahmy, C., Cotton, L., Jimmons, C., McKay, R., Stoffer, S., & Syed, S. (2016). Examining the Role of Familial Support During Prison and After Release on Post-Incarceration Mental

- Health. *International Journal of Offender Therapy and Comparative Criminology*, 60(1), 3–20. <https://doi.org/10.1177/0306624X14548023>
- Walmsley, R. (2003). *World prison population list*. Home Office London,, England. Retrieved from http://www.sovalumni.com/wp-content/uploads/2015/01/wppl_10.pdf
- Walmsley, R., & others. (2013). *World prison population list*. Home Office London,, England. Retrieved from http://www.aidsdatahub.org/sites/default/files/publication/World_prison_population_list_10th_edition_2013.pdf
- Walsh, E., & Freshwater, D. (2009). Developing the Mental Health Awareness of Prison Staff in England and Wales: *Journal of Correctional Health Care*. <https://doi.org/10.1177/1078345809341532>
- Wang, P. S., Aguilar-Gaxiola, S., Alonso, J., Angermeyer, M. C., Borges, G., Bromet, E. J., ... Wells, J. E. (2007). Worldwide Use of Mental Health Services for Anxiety, Mood, and Substance Disorders: Results from 17 Countries in the WHO World Mental Health (WMH) Surveys. *Lancet*, 370(9590), 841–850. [https://doi.org/10.1016/S0140-6736\(07\)61414-7](https://doi.org/10.1016/S0140-6736(07)61414-7)
- Wang, Jinghui, Xiaohang Wu, Weiyi Lai, Erping Long, Xiayin Zhang, Wangting Li, Yi Zhu, et al. (2017). “Prevalence of Depression and Depressive Symptoms among Outpatients: A Systematic Review and Meta-Analysis.” *BMJ Open* 7, no.8: e017173. <https://doi.org/10.1136/bmjopen-2017-017173>.
- Waraich, P., Goldner, E. M., Somers, J.M. & Lorena, H. (2004). “Prevalence and Incidence Studies of Mood Disorders: A Systematic Review of the Literature.” *The Canadian Journal of Psychiatry* 49, no. 2 (February 1, 2004): 124–38. <https://doi.org/10.1177/070674370404900208>.
- Warrilow, A. (2012). Improving the mental health care of prisoners: Nurses face many barriers when providing a service for detainees equivalent to that offered in the community. *Mental Health Practice*, 15(8), 20–24.
- West, H. (2010). *Prison and jail inmates at midyear 2009*(No. NCJ 230113). Data for 2009. Washington, DC: Bureau of Justice Statistics.
- Westdahl, C., Milan, S., Magriples, U., Kershaw, T. S., Rising, S. S., & Ickovics, J. R. (2007). Social Support and Social Conflict as Predictors of Prenatal Depression. *Obstetrics and Gynecology*, 110(1), 134–140. <https://doi.org/10.1097/01.AOG.0000265352.61822.1b>

- White, M. D., Goldkamp, J. S., & Campbell, S. P. (2016). Co-Occurring Mental Illness and Substance Abuse in the Criminal Justice System: Some Implications for Local Jurisdictions. *The Prison Journal*. <https://doi.org/10.1177/0032885506290852>
- Whiteford, H. A., Ferrari, A. J., Degenhardt, L., Feigin, V., & Vos, T. (2015). The Global Burden of Mental, Neurological and Substance Use Disorders: An Analysis from the Global Burden of Disease Study 2010. *10*(2). <https://doi.org/10.1371/journal.pone.0116820>
- World Health Organization, Mental Health Atlas (2011). Department of Mental Health and Substance Abuse. Malawi. https://www.who.int/mental_health/evidence/atlas/profiles/mwi_mh_profile.pdf
- Williams, K., & Dunne-Bryant, A. (2006). Divorce and Adult Psychological Well-Being: Clarifying the Role of Gender and Child Age. *Journal of Marriage and Family*, *68*(5), 1178–1196.
- Williams, D. R., Herman, A., Stein, D. J., Heeringa, S. G., Jackson, P. B., Moomal, H., & Kessler, R. C. (2008). Twelve-month mental disorders in South Africa: prevalence, service use and demographic correlates in the population-based South African Stress and Health Study. *Psychological Medicine*, *38*(2), 211–220. <https://doi.org/10.1017/S0033291707001420>
- Wittchen, H. U., Jacobi, F., Rehm, J., Gustavsson, A., Svensson, M., Jönsson, B., ... Steinhausen, H.-C. (2011). The size and burden of mental disorders and other disorders of the brain in Europe 2010. *European Neuropsychopharmacology: The Journal of the European College of Neuropsychopharmacology*, *21*(9), 655–679. <https://doi.org/10.1016/j.euroneuro.2011.07.018>
- Wolff, N. (2005). Community reintegration of prisoners with mental illness: A social investment perspective. *International Journal of Law and Psychiatry*, *28*(1), 43–58. <https://doi.org/10.1016/j.ijlp.2004.12.003>
- Woo, S. M., & Keatinge, C. (2008). *Diagnosis and Treatment of Mental Disorders Across the Lifespan*. John Wiley & Sons.
- Wood, S. R. (2011). Co-occurring Psychiatric and Substance Dependence Disorders as Predictors of Parolee Time to Rearrest. *Journal of Offender Rehabilitation*, *50*(4), 175–190. <https://doi.org/10.1080/10509674.2011.571076>
- Wood, R.W., Goesling, B., & Avellar, S.A. (2007). *The Effects of Marriage on Health: A Synthesis of Recent Research Evidence*. Washington, D.C: U.S. Department of Health and Human Services.
- World Prison Brief. (2016). Retrieved November 5, 2016, from <http://www.prisonstudies.org/country/australia>

- World Prison Brief. (2015). Retrieved March 16, 2016, from <http://www.prisonstudies.org/country/south-africa>
- World Prison Brief. (2013). Retrieved March 16, 2016, from <http://www.prisonstudies.org/country/united-states-america>
- Wormith, J. S., Althouse, R., Simpson, M., Reitzel, L. R., Fagan, T. J., & Morgan, R. D. (2007). The Rehabilitation and Reintegration of Offenders: The Current Landscape and Some Future Directions for Correctional Psychology. *Criminal Justice and Behavior*, *34*(7), 879–892. <https://doi.org/10.1177/0093854807301552>
- Wüsthoff, L. E., Waal, H., & Gråwe, R. W. (2014). The effectiveness of integrated treatment in patients with substance use disorders co-occurring with anxiety and/or depression - a group randomized trial. *BMC Psychiatry*, *14*(1), 67. <https://doi.org/10.1186/1471-244X-14-67>
- Xu, J., & Wei, Y. (2013). Social Support as a Moderator of the Relationship between Anxiety and Depression: An Empirical Study with Adult Survivors of Wenchuan Earthquake. *PLoS ONE*, *8*(10). <https://doi.org/10.1371/journal.pone.0079045>
- Yorbik, O., Birmaher, B., Axelson, D., Williamson, D. E., & Ryan, N. D. (2004). Clinical characteristics of depressive symptoms in children and adolescents with major depressive disorder. *The Journal of Clinical Psychiatry*, *65*(12), 1654–1659; quiz 1760–1761.
- Young, J. T., Heffernan, E., Borschmann, R., Ogloff, J. R. P., Spittal, M. J., Kouyoumdjian, F. G., ... Kinner, S. A. (2018). Dual diagnosis of mental illness and substance use disorder and injury in adults recently released from prison: a prospective cohort study. *The Lancet. Public Health*, *3*(5), e237–e248. [https://doi.org/10.1016/S2468-2667\(18\)30052-5](https://doi.org/10.1016/S2468-2667(18)30052-5)
- Youngmann, R., Zilber, N., Workneh, F., & Giel, R. (2008). Adapting the SRQ for Ethiopian populations: a culturally-sensitive psychiatric screening instrument. *Transcultural Psychiatry*, *45*(4), 566–589. <https://doi.org/10.1177/1363461508100783>
- Zabala-Baños, M. C., Segura, A., Maestre-Miquel, C., Martínez-Lorca, M., Rodríguez-Martín, B., Romero, D., & Rodríguez, M. (2016). Prevalencia de trastorno mental y factores de riesgo asociados en tres prisiones de España. *Revista Española de Sanidad Penitenciaria*, *18*(1), 13–23.

APPENDIX I

INFORMED CONSENT FORM

Project title: Prevalence and Factors Associated with Mental Illness among Prison Inmates at Thyolo Prison in Malawi.

Introduction: We would like to invite you to take part in a research study. The reason for doing this study is to get a better understanding about how many prison inmates at Thyolo prison suffer from mental health problems. We are also interested to see if we can understand which factors, such as trauma and life experiences, play a role in these problems. You qualify for this study because you are a prison inmate at Thyolo district. We are inviting all prison inmates to take part in this study.

What we're asking of you: We will ask you to answer a set of questions about yourself for demographic purposes. Then we will ask if you experienced any problems relating to your mental health, both current and also lifetime mental illness. This also includes information about your use of substances. We will also ask you about your experience in the prison. If you agree to participate in this study, it will take about thirty to forty - five minutes of your time.

Risks or discomforts: There are minimal risks to taking part in this study. Answering some of our questions may make you uncomfortable or sad. If you feel that you would like to talk to a counselor about your feelings you can approach the researcher with your details and she will arrange for an appointment with a Counselor for you on the same day or next day.

Benefits of taking part in the study: If you take part in this study there will be no direct benefits for you. However, you will help us get a better understanding about what kind of services people in prisons need and help us identify those most at risk for mental health problems. Although there will be no reward or payments for taking part in this research, however, if you are found to be suicidal or danger to others, officials will be informed, and you will be referred to get treatment for safety of yourself and

others. You will receive a gift-pack containing a soft drink and biscuits at the end of the interviews to thank you for your time.

Being in the study is voluntary, private and confidential: Taking part in this study is entirely up to you. All your information will be used for research purposes only. Your information will be kept private. Anyone who is working with any of the information you give us, has to sign an agreement not to share what you tell us. We do not tell anyone names or other information which could be used to identify you. Your answers will be given a special number instead of your name. No one else will know these are your answers. For instance, in the research report, we will report things such as how many people felt very sad. If you decide you don't want to be in the study, there is no problem. You can choose to stop the interview at any time. If you don't want to answer a certain question during the study, that is also no problem. If you choose not to take part or if you drop out during the interview, we will still give you referrals to counseling services you may need. If you say that you want to hurt yourself or others, the medical staff or the prison officials will be informed to refer you for mental health services for the safety of yourself and others.

Who to contact with questions: If you have any questions about your rights as a participant, concerns or complaints, please contact Joyce Nambindo, Principal Investigator, Malawi Adventist University, Malawi at joycenambindo@yahoo.com or +265888318581, Professor Katherine Sorsdahl, Supervisor, University of Cape Town, South Africa, at + 27 21 650 65675, or katherine.sorsdahl@uct.ac.za, Dr Claire van der Westhuizen, Supervisor, University of Cape Town, South Africa, at + 27 21 65065675, or claire.vanderwesthuizen@uct.ac.za.

You are also free to contact the Faculty of Health Sciences Human Research Ethics Committee by Telephone: + 27 21 406 6492; fax: +27 21 406 6411; or email: (Lamees.Emjedi@uct.ac.za). Their offices are located on floor E52, Room 23 in the Old Main Building of Groote Schuur Hospital, Observatory, 7925, South Africa.

National Health Science Research Committee of Malawi by Telephone: +265 774869, Email: mohdoccentre@gmail.com or Postal address: The Secretary, Ministry of Health and Population, P.O. Box. 30377, Lilongwe 3, Malawi. Dr. I. Banda, Malawi Adventist University, Malamulo College of

Health Sciences, Nursing and Midwifery Department, Box 55, Makwasa, Malawi. Email: isbanda@yahoo.com. Mr. Billy W. Nyambalo, Ministry of Health Research Department/ NHSRC Secretariat P.O. Box 30377 Lilongwe 3 Malawi. Tel: +265 111 789 400 or Cell: +265 999 667 662/888 667 662, Email: bnyambalo@gmail.com, a member of National Health Science Research Committee of Malawi.

Declaration by participant

By signing below, I agree to take part in the research study explained to me.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressured to take part. I also understand that I do not give up any rights by signing below.
- I may choose to leave the study at any time without being punished or treated badly in any way.
- I have received an unsigned copy of this form to keep.

Signed at (place) On (date)

Signature of participant:

Signature of the witnesses:

APPENDIX II

CHIKALATA CHACHIVOMELEZO M' CHICHEWA

Mutu wa kafukufuku: Prevalence and Factors Associated with Mental Illness among Prison Inmates at Thyolo Prison in Malawi.

Malonje: Tikukupemphani kuti mutenge nawo mbali mu kafukufuku amene akhale akuchitika kuno ku ndende ya Thyolo. Cholinga cha kafukufuku ameneyi ndi chofuna kudziwa chiwerengero cha andende a kuno ku ndende ya Thyolo amene akudwala matenda a misala. Ndicholinga chathunso kufuna kudziwa kuti ndi zovuta zanjji (monga zipsyinjo kapena zosautsa za mmoyo) zimene zimaika munthu pachiopsyezo chodwala matenda a misalawa. Inu muli mgulu la anthu oyenerera mu kafukufuku ameneyi chifukwa ndinu mmodzi wa andende pano pa ndende ya Thyolo. Tikumema andende onse kuti atenge nawo mbali mu kafukufuku ameneyi.

Chiyembekezo chathu kwa inu: Tidzakhala tikukufunsani mafunso okhudzana ndi unzika wanu. Tidzakhalsanso tikukufunsani ngati munadwalapo matenda a misala m'mbuyomu kapena ngati mukudwala pakalipano. Apa mudzayenera kutiuzanso ngati munagwiritsapo ntchito mankhwala ozunguza bongo (monga kumwa mowa kapena kusuta). Tidzakufunsanso za momwe mukukhalira kuno kundende. Mukavomereza kutenga nawo gawo mu kafukufuku ameneyu, zititengera kwamphindi zosachepera makumi anayi ndi mphambu zisanu (45).

Zovuta za kafukufukuyi: Pali zovuta zochepa zimene mungakumane nazo pamene mwasankha kutenga nawo gawo mu kafukufuku ameneyi. Kuyankha ku mafunso ena kungakupangitseni kuti musamasuke kapena kuwawidwa mumtima kumene. Ngati mukuona ngati ndikoyenera kuti mukumane ndi mlangizi kutengera ndi mmene mukumvera mmaganizo mwanu, dziwitsani mmodzi wa atsogoleri a kafukufukuyi, amene angakonze ndondomeko yoti mukumane ndi mlangiziyu tsiku lomwelo kapena mawa lake.

Ubwino otenga nawo mbali mu kafukufuku ameneyi: Ngati muvomera kutenga nawo mbali mu kafukufuku ameneyi, sikuti zikhala zokupindulirani nthawi yomweyo ayi. Izi zithandiza ife kuti tikhale

ndi chidziwitso choyenera cha thandizo limene andende akulisowa, ndinso kupeza omwe ali pa chiopsyezo chachikulu chodwala matenda a misala. Ngakhale kuti simulandira mphotho kapena dipo lililonse potenga mbali mu kafukufuku ameneyi, kwa amene akufuna kudzipha kapena kuvulaza anzawo, akuluakulu andende adzadziwitsidwa, ndiponso iyeyo adzalandira chithandizo cha mankhwala kuti atetezedwe iye pamodzi ndi anzake. Pamapeto pake mudzalandiranso kamphatso kochepa momwe muli kachakumwa ndi bisiketi pokuthokozani kaamba kanthawi yanu.

Kutenga nawo mbali mu kafukufukuyi ndikosakakamiza ndinso kwachinsinsi: Kutenga nawo mbali mu kafukufukuyi ndizotengera kufuna kwa inu mwini. Zonse zomwe mudzatiuze zidzagwiritsidwa ntchito pokwaniritsa cholinga cha kafukufukuyi basi. Zonse zomwe mudzatiuze zidzakhala za chinsinsi. Mudzasayinirana pangano pakati pa inu ndi aliyense amene akumanizane ndi zomwe mwatiuza kuti zisaululike. Simudzatchulidwa dzina kapena chilichonse chosonyezera kuti zomwe zanenedwa zachokera kwa inu. Mayankho anu onse adzapatsidwa nambala mmalo mwadzina lanu. Palibe amene adzadziwe kuti awa ndi mayankho ochokera kwa inu. Mwachitsanzo, pamene chikalata chomaliza chidzalembedwa, ichi chidzangosonyeza nambala ya andende omwe anawawidwa mumtima. Palibe vuto lina lililonse ngati mungapange chiganizo choti simukufuna kutengapo gawo mu kafukufukuyi. Muthanso kusankha kuti asapitilize kukufunsani mafunso nthawi ina iliyonse. Palibenso vuto lina lililonse ngati simukufuna kuyankha funso lina lake la mukafukufukuyi. Ngati musankha kuti asapitilize kukufunsani mafunso koma muli ndi vuto lofuna chithandizo kuchokera kwa alangizi, mudzathandizidwa moyenera. Kwa amene akufuna kudzipha kapena kuvulaza anzawo, akuluakulu andende ndi achipatala adzadziwitsidwa, ndiponso iyeyo adzalandira chithandizo cha mankhwala kuti atetezedwe iye pamodzi ndi anzake.

Wolumikizana naye ngati muli ndi mafunso: Ngati mungakhale ndi mafunso okhudzana ndi ufulu wanu, kapena madandaulo monga mmodzi mwa otenga gawo mu kafukufukuyi, alembereni kapena imbani lamya kwa Joyce C. Nambindo, Malawi Adventist University, P.O. Box 55, Makwasa, Malawi kapena joycenambindo@yahoo.com kapena +265888318581. Mungathenso kulumikizana ndi mphunzitsi wamkulu amenenso ali woyang'anira, Professor Katherine Sorsdahl, University of Cape Town, South Africa, pa nambala iyi + 27 21 650 65675, kapena kuwalemba ku katherine.sorsdahl@uct.ac.za. Muthanso kulumikizana ndi mphunzitsi wina amenenso ali woyang'anira

Dr Claire van der Westhuizen, University of Cape Town, South Africa, pa nambalaiyi + 27 21 65065675 , kapena kuwalemba ku claire.vanderwesthuizen@uct.ac.za.

Ndinunso omasuka kuimbira ku Faculty of Health Sciences Human Research Ethics Committee pa nambala iyi + 27 21 406 6492; fax: +27 21 406 6411; kapena kuwalemba ku: (Lamees.Emjedi@uct.ac.za). Maofesi awo ali mu Floor E52, mchipinda cha nambala 23, m'chinyumba cha Groote Schuur Hospital, Observatory, 7925, South Africa.

Muthanso kuimbira ku National Health Science Research Committee of Malawi pa nambalaiyi: +265 774869, kapena kuwalemba kuimeloyi: mohdocentre@gmail.com kapenanso kuwalemba ku: The Secretary, Ministry of Health and Population, P.O. Box. 30377, Lilongwe 3, Malawi. Dr. I. Banda, Nursing and Midwifery Department, Malawi Adventist University, Malamulo College of Health Sciences, Box 55, Makwasa, Malawi. Kapena pa imeloyi: isbanda@yahoo.com. Muthanso kuwalemba Mr. Billy W. Nyambalo, Ministry of Health Research Department/ NHSRC Secretariat P.O. Box 30377 Lilongwe 3 Malawi. Kapena kuwaimbira pa lamy: +265 111 789 400 kapena lamy ya m'manja: +265 999 667 662/888 667 662, kapenanso pa imeloyi: bnyambalo@gmail.com, amene ali membalawa National Research Council of Malawi.

Kutsimikiza kwamwini otenga mbali mu kafukufuku Posayinira m'munsimu, ine ndikuvomereza kutengapo gawo mu kafukufuku amene wafokozeredwa kwa ine.

Ine ndikulamula kuti:

- Ndawerenga kapena andiwerengera zonse pamodzi ndi chitsimikizo ichi, ndipo zili mchilankhulo choti ndimalankhula bwino lomwe ndiponso ndimamasuka nacho chifukwa ndinachizolowera.
- Ndinalindi danga lofunsa mafunso omwenso ayankhidwa bwino lomwe.
- Ndikudziwa kuti kutenga nawo mbali mu kafukufuku ameneyi ndikufuna kwanga chifukwa sindinakakamizidwe kutero. Ndikudziwanso kuti posayinira mmunsimu sikuti ndaphwanyiridwa ufulu wanga ayi.
- Ndithakusiya kutenga nawo gawo mu kafukufukuyi nthawi ina iliyonse osapatsidwa chilango kapena kutonzedwa mwamtundu wina uliwonse.

Ndapatsidwachibakuwa chosasayina chofanana ndi ichi kuti ndisunge.

Ndasayinira kumalo:..... Pa tsiku:

Sayini ya otenga nawo gawo:

Sayini ya mboni:

APPENDIX III

QUESTIONNAIRE

General Questionnaire

A study on Prevalence and Factors Associated with Mental Illness among Prison Inmates at Thyolo Prison in Malawi

Questionnaire Number _____ Date _____

The interviewer should tick in the boxes and / or fill in the blank spaces provided according to responses made by the participant.

1. How old are you?

- | | |
|----------------------------|---|
| a) 18 to 35 years..... | 1 |
| b) 36 to 49 years..... | 2 |
| c) 50 years and above..... | 3 |

2. Marital status

- | | |
|--------------------------------|---|
| a) Single | 1 |
| b) Married..... | 2 |
| c) Divorced..... | 3 |
| d) Widowed..... | 4 |
| e) Other (please specify)..... | 5 |

3. Education level

- | | |
|-------------------------------------|---|
| a) None..... | 1 |
| b) Primary level..... | 2 |
| c) Secondary level..... | 3 |
| d) Tertiary level Certificate | 4 |
| e) Diploma..... | 5 |
| f) Degree..... | 6 |
| g) Masters | 7 |

4. Were you employed before prison sentence?

a) Yes.....

1

b) No.....

2

5. What was your occupation, that is, what was your job called?

.....

6. Before this recent admission to prison, did you ever serve time in prison, jail or some other correctional facility as a juvenile or adult?

a) Yes.....

1

b) No.....

2

7. How many times have you been in prison, excluding your current imprisonment?

a) Never.....

1

b) One time.....

2

c) Two to five times.....

3

d) More than five times.....

4

8. How long is your prison/jail sentence?

.....

9. Do you receive financial/material support from family members or friends?

a) Yes.....

1

b) No.....

2

10. Do family members/friends visit you while in prison?

a) Yes.....

1

b) No.....

2

11. Outside prison, before your current imprisonment, have you ever used any of the following drugs, even if just once?

- a) Tobacco.....
- b) Alcohol.....
- c) Cocaine.....
- d) Heroin.....
- e) Hypnotics / Sedatives.....
- f) Others.....

12. Has your spouse, parents, relatives or friends ever complained about your use of drugs mentioned above?

- a) Yes
- b) No

1
2

13. Have you ever been diagnosed and / or treated for any of these mental disorders before:

- a) Psychotic disorder.....
- b) Depression.....
- c) Anxiety disorder.....
- d) Bipolar (Mania).....
- e) Personality disorder.....
- f) Eating disorder.....
- g) Substance-related disorder.....

Thank you

APPENDIX IV

The CES-D Scale: A Self-Report Depression Scale

Below is a list of ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by choosing the appropriate response.

		Rarely or none of the time	Some or a little of the time	Occasionally or a moderate amount of the time	Most or all of the time
1.	I was bothered by things that usually don't bother me.	0	1	2	3
2.	I did not feel like eating; my appetite was poor.	0	1	2	3
3.	I felt that I could not shake off the blues, even with the help from family or friends.	0	1	2	3
4.	I felt that I was just as good as other people.	3	2	1	0
5.	I had trouble keeping my mind on what I was doing.	0	1	2	3
6.	I felt depressed.	0	1	2	3
7.	I felt that everything I did was an effort.	0	1	2	3
8.	I felt hopeful about the future.	3	2	1	0
9.	I thought my life had been a failure.	0	1	2	3
10.	I felt fearful.	0	1	2	3
11.	My sleep was restless.	0	1	2	3
12.	I was happy.	3	2	1	0
13.	I talked less than usual.	0	1	2	3
14.	I felt lonely.	0	1	2	3
15.	People were unfriendly.	0	1	2	3
16.	I enjoyed life.	3	2	1	0
17.	I had crying spells.	0	1	2	3
18.	I felt sad.	0	1	2	3
19.	I felt that people dislike me.	0	1	2	3
20.	I could not get "going".	0	1	2	3

APPENDIX V

Beck Anxiety Inventory

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not At All	Mildly but it didn't bother me much.	Moderately - it wasn't pleasant at times	Severely – it bothered me a lot
Numbness or tingling	0	1	2	3
Feeling hot	0	1	2	3
Wobbliness in legs	0	1	2	3
Unable to relax	0	1	2	3
Fear of worst happening	0	1	2	3
Dizzy or lightheaded	0	1	2	3
Heart pounding/racing	0	1	2	3
Unsteady	0	1	2	3
Terrified or afraid	0	1	2	3
Nervous	0	1	2	3
Feeling of choking	0	1	2	3
Hands trembling	0	1	2	3
Shaky / unsteady	0	1	2	3
Fear of losing control	0	1	2	3
Difficulty in breathing	0	1	2	3
Fear of dying	0	1	2	3
Scared	0	1	2	3
Indigestion	0	1	2	3
Faint / lightheaded	0	1	2	3
Face flushed	0	1	2	3
Hot/cold sweats	0	1	2	3
Column Sum				

Scoring - Sum each column. Then sum the column totals to achieve a grand score. Write that score here _____ .

Thank you

APPENDIX VI

Trauma history questionnaire

The following is a series of questions about serious or traumatic life events. These types of events actually occur with some regularity, although we would like to believe they are rare, and they affect how people feel about, react to, and/or think about things subsequently. Knowing about the occurrence of such events, and reactions to them, will help us to develop programs for prevention, education, and other services. The questionnaire is divided into questions covering crime experiences, general disaster and trauma questions, and questions about physical and sexual experiences.

For each event, please indicate (circle) whether it happened, and if it did, the number of times and your approximate age when it happened (give your best guess if you are not sure). Also note the nature of your relationship to the person involved, and the specific nature of the event, if appropriate.

Crime-Related Events

Have you ever experienced this? If yes, how often and what ages?

1. Has anyone ever tried to take something directly from you by using force or the threat of force, such as a stick-up or mugging? No Yes _____ _____

2. Has anyone ever attempted to rob you or actually robbed you (i.e. stolen your personal belongings)? No Yes _____ _____

3. Has anyone ever attempted to or succeeded in breaking into your home when you weren't there? No Yes _____ _____

4. Has anyone ever tried to or succeeded in breaking into your home while you were there? No Yes _____ _____

General Disaster and Trauma

5. Have you ever had a serious accident at work, in a car or somewhere else? No Yes _____ _____
If yes, please specify _____

6. Have you ever experienced a natural disaster such as a tornado, hurricane, flood, major

earthquake, etc., where you felt you or your loved ones were in danger of death or injury?

No Yes _____

If yes, please specify _____

7. Have you ever experienced a "man-made" disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones were in danger of death or injury?

No Yes _____

If yes, please specify _____

8. Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health?

No Yes _____

9. Have you ever been in any other situation in which you were seriously injured?

No Yes _____

If yes, please specify _____

10. Have you ever been in any other situation in which you feared you might be killed or seriously injured?

No Yes _____

If yes, please specify _____

11. Have you ever seen someone seriously injured or killed?

No Yes _____

If yes, please specify who _____

12. Have you ever seen dead bodies (other than at a funeral) or had to handle dead bodies for Any reason?

No Yes _____

If yes, please specify _____

13. Have you ever had a close friend or family member murdered, or killed by a drunk driver?

No Yes _____

If yes, please specify relationship (e.g. mother, grandson, etc.) _____

14. Have you ever had a spouse, romantic partner, or child die?

No Yes _____

If yes, please specify relationship _____

15. Have you ever had a serious or life-threatening illness?

No Yes _____

If yes, please specify _____

16. Have you ever received news of a serious injury, life-threatening illness or unexpected death of someone close to you? No Yes _____

If yes, please indicate _____

17. Have you ever had to engage in combat while in military service in an official or unofficial war zone? No Yes _____

If yes, please indicate where: _____

Physical and Sexual Experiences

18. Has anyone ever made you have intercourse, oral or anal sex against your will?

No Yes _____ _____

If yes, please indicate nature of relationship with person (e.g. stranger, friend, relative, parent, sibling) _____

19. Has anyone ever touched private parts of your body, or made you touch theirs, under force or threat? No Yes _____ _____

If yes, please indicate nature of relationship with person (e.g. stranger, friend, relative, parent, sibling)

20. Other than incidents mentioned in Questions 18 and 19, have there been any other situations in which another person tried to force you to have unwanted sexual contact?

No Yes _____ _____

21. Has anyone, including family members or friends, ever attacked you with a gun, knife or some other weapon? No Yes _____ _____

22. Has anyone, including family members or friends, ever attacked you without a weapon and seriously injured you? No Yes _____ _____

23. Has anyone in your family ever beaten, "spanked" or pushed you hard enough to cause injury? No Yes _____ _____

Other Events

24. Have you experienced any other extraordinarily stressful situation or event that is not covered above? No Yes _____ _____

If yes, please specify. _____

APPENDIX VII

COLUMBIA-SUICIDE SEVERITY RATING SCALE

The Columbia Suicide Severity Rating Scale will be used if a participant mentions suicidal thoughts or behaviours.

Screener/Recent – Self-Report

	In The Past Month	
Answer Questions 1 and 2	YES	NO
1) Have you wished you were dead or wished you could go to sleep and not wake up?	<input type="checkbox"/>	<input type="checkbox"/>
2) Have you actually had any thoughts about killing yourself?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If YES to 2, answer questions 3, 4, 5, and 6. If NO to 2, go directly to question 6		
3) Have you thought about how you might do this?	<input type="checkbox"/>	<input type="checkbox"/>
4) Have you had any intention of acting on these thoughts of killing yourself, as opposed to you have the thoughts but you definitely would not act on them?	<input type="checkbox"/>	<input type="checkbox"/>
5) Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?	<input type="checkbox"/>	<input type="checkbox"/>
	In the Past 3 Months	
6) Have you done anything, started to do anything, or prepared to do anything to end your life? Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	In The Past Month
<p>note, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc.</p> <p>In your entire lifetime, how many times have you done any of these things?</p>	

NOTE FOR FIELD STAFF: If the participant answers YES to either questions 4, 5, or 6, this is a red flag and they should be considered at high risk for suicide. These participants identified as high risk for suicide must be referred for a mental health assessment *on the same day*. You need to communicate with the prison administrators to arrange for referral on the same day to Thyolo District Hospital. Participants saying yes to questions 1, 2 or 3 should be referred to the study counsellor for an appointment.

Thank you

APPENDIX VIII

Mafunso a wamba m'Chichewa

Nambala ya chikalata cha mafunso _____ Tsiku _____

Ofunsa mafunso achonge m'timabokosi kapena alembe mayankho m'mizere yapatsidwayo molingana ndi momwe munthu wayankhira.

1. Muli ndi zaka zingati?

- | | |
|------------------------------|---|
| a) 18 mpaka 35 | 1 |
| b) 36 mpaka 49 | 2 |
| c) 50 kapena kupitilira..... | 3 |

2. Munakwatiwapo kapena ayi

- | | |
|----------------------------------|---|
| a) Osakwatiwa | 1 |
| b) Okwatiwa | 2 |
| c) Osudzulidwa..... | 3 |
| d) Oferedwa..... | 4 |
| e) Zina (longosolani bwino)..... | 5 |

3. Maphunziro

- | | |
|--|---|
| a) Sindinapite kusukulu..... | 1 |
| b) Pulaimale..... | 2 |
| c) Secondale..... | 3 |
| d) Satifiketi | 4 |
| e) Dipuloma..... | 5 |
| f) Ukachenjede (Digirii/Masitala)..... | 6 |

4. M'magwira ntchito musanabwere kundende kuno?

- | | |
|--------------|---|
| a) Inde..... | 1 |
| b) Ayi..... | 2 |

5. M'magwira ntchito yanji, ndipo ngati ndani?

.....

6. Kupatula ulendo uno, munagwiraponso jele muli mwana kapena muli wamkulu?

a) Inde.....

1

b) Ayi.....

2

7. Ndi maulendo angati amene munagwirapo jere, kupatulapo ulendo uno?

a) Sizinandichitikirepo.....

1

b) Kamodzi.....

2

c) Kawiri mpaka kasanu.....

3

d) Kupitilira kasanu.....

4

8. Mukhala kundende kuno kwa zaka zingati?

.....

9. Mumalandira thandizo lina lililonse kuchokera kwa abwenzi kapena anansi?

a) Inde.....

1

b) Ayi.....

2

10. Abwenzi kapena anansi amabwera kudzakuwonani kundende kuno?

a) Inde.....

1

b) Ayi.....

2

11. Musanabwere kundende kuno ulendo uno, munagwiritsapo ntchito mankhwala ozunguza bongo, ngakhale kamodzi?

a) Fodya.....

b) Mowa.....

c) Kokeni.....

d) Hiroini.....

- e) Mankhwala ogonetsa.....
- f) Mankhwala ena.....

12. Ilipo nthawi ina imene akazi/amuna anu, abale ndi anansi anakudandaulani za kagwiritsidwe ntchito ka mankhwala ozunguza bongowa?

- a) Inde
- b) Ayi

1
2

13. Kodi m’mbuyomu munadwalapo ndi kuthandizidwapo matenda a misala tawatchula m’munsiwa:

- a) Misala yosokoneza kamvedwe kapena kaganizidwe.....
- b) Misala yokhumudwa.....
- c) Misala ya mantha.....
- d) Misala ya chimkondwa.....
- e) Misala yokhudza umunthu.....
- f) Misala yokhudza kadyedwe.....
- g) Misala yodza kaamba kogwiritsa ntchito mankhwala ozunguza bongo.....

Zikomo Kwambiri

APPENDIX IX

The CES-D Scale: A Self-Report Depression Scale – M’chichewa

Izi ndi zina za momwe mumamvera kapena mumakhalira. Tionetsereni kuti ndi kangati kamene mwakhala mukumva choncho sabata lathali posankha yankho lolondola.

		Sizimachitik a wamba kapena sizimachitiki ratu	Zimachitika nthawi zina	Zimachitika pafupi- pafupi	Zimachitik a nthawi zambiri kapena nthawi zonse
1.	Ndimasautsika ndi zinthu zimene sindimasautsika nazo m’mbuyomu	0	1	2	3
2.	Sindimafuna kudya; ndinalibe chilakolako chofuna kudya	0	1	2	3
3.	Ndimaona ngati nkhawa zanga sizimatha ngakhale abale ndi anansi anga athandizepo	0	1	2	3
4.	Ndimaona ngati ndine munthu wabwinobwino ngati aliyense	3	2	1	0
5.	Ndimalephera kuika mtima wanga pa zinthu zomwe ndimapanga	0	1	2	3
6.	Ndimakhala wokhumudwa	0	1	2	3
7.	Ndimaona ngati ndimakokeka pa chilichonse chomwe ndimachita	0	1	2	3
8.	Ndinali ndi chilimbikitso pa za tsogolo langa	3	2	1	0
9.	Ndimaganiza kuti moyo wanga	0	1	2	3

	wakhala uli wolephera				
10.	Ndimakhala wamantha	0	1	2	3
11.	Sindimagona tulo	0	1	2	3
12.	Ndinali wosangalala	3	2	1	0
13.	Sindimakonda kulankhula ngati kale	0	1	2	3
14.	Ndimadzimva undekha	0	1	2	3
15.	Anhu samandikonda	0	1	2	3
16.	Ndinasangalala nawo moyo	3	2	1	0
17.	Nthawi zina ndimatha kumangolira	0	1	2	3
18.	Ndimakhala osangalala	0	1	2	3
19.	Ndimaona ngati anthu amadana nane	0	1	2	3
20.	Palibe chomwe chimandiyendera bwino	0	1	2	3

APPENDIX X
Beck Anxiety Inventory – M’chichewa

Izi ndi zina mwa zizindikiro za matenda a mantha. Chonde werengani modekha chizindikiro chilichonse. Tionetsereni kuti ndi kangati kamene mwakhala mukusautsika ndi zizindikirozi kwa mwezi wathawu kuonjezera lero pozungulitsa nambala molingana ndi chizindikirocho.

	Sizinandichitik irepo	Zinandichitikirap o patali-patali - sizimandisowetsa mtendere	Zimandichikira - sizimandisangal atsa nthawi zina	Zimandichitikira kwambiri - zimandisowetsa mtendere
Dzanzi kapena tobyabayaya pa thupi	0	1	2	3
Kumva kutentha	0	1	2	3
Kunjenjemera miyendo	0	1	2	3
Kukanika kumasuka	0	1	2	3
Kuopa kuti chinachake choopsya chichitika	0	1	2	3
Chizungulire kapena kumva kupepuka kwa mutu	0	1	2	3
Kuthamanga kwa mtima	0	1	2	3
Kusakhazikika	0	1	2	3
Kudzazidwa ndi mantha	0	1	2	3
Kukhala wonthunthumira	0	1	2	3
Kumva ngati kuthinidwa pakhosi	0	1	2	3
Kunjenjemera kwa manja	0	1	2	3
Kumangonjenjemera osakhazikika	0	1	2	3
Kuopa kuti choopsa chikandichitikira chindigonjetsa	0	1	2	3
Kubanika popuma	0	1	2	3
Kuopa kufa	0	1	2	3
Kuopsyezedwa	0	1	2	3
Kumva ngati wadzimidwa	0	1	2	3
Kukomoka (osadziwa chomwe chikuchitika) kapena mutu kupepuka	0	1	2	3
Kufiira kwa nkhope	0	1	2	3
Kumangotuluka thukuta	0	1	2	3
Onkhetserani				

Kawerengetsedwe - Onkhetsani mabokosi onse otsika m’munsi paokha paokha. Kenako onkhetserani mayankho omwe munapeza aja pamodzi. Lembani yankholo apa: _____

APPENDIX XI

Trauma history questionnaire– M’chichewa

Iyi ndi ndondomeko ya mafunso okhudzana ndi zipsyinjo kapena zoopsya zazikulu zomwe zimachitika m’oyo wa munthu. Izi zimakhala ngati zochitika zozolowereka ngakhale kuti sizimachitika wamba, komabe zimatha kusokoneza anthu m’maonedwe a zinthu, m’mene angazitengere, ndinso m’mene angakhale akulingalira zinthu za m’tsogolo. Chidziwitso cha zipsyinjoizi, ndi m’mene anazitengera zimathandiza kuika ndondomeko ya mmene tingaikire njira zopewera, njira zophunzitsira, ndi zina zothandizira moyenerera. Mafunsowa agawidwa m’magawo awa: zoopsya zokhudzana ndi chiwembu, zoopsya zokhudzana ndi ngozi zodza mwadzidzidzi, ndi zoopsya zokhudzana ndi thupi lanu kapena kugonedwa mokakamizidwa.

Pa chochitika choopsya chilichonse, onetsani kapena zungulizani ngati chinachitika; ndipo ngati chinachitika chinachitika kangati ndipo muli ndi zaka zingati (yesetsani kukumbukira kuti munali ndi zaka zingati moyerekeza). Dziwaninso kuti panali ubale wanji pakati pa inu ndi munthu okhudzidwayo, ndinso zinachitika mwa njira yanji (ngati nkoyenera).

Zokhudzana ndi chiwembu

Kodi izi zinakuchitikiranipo? Ngati zinakuchitikirani, zinachitika kangati, ndipo muli ndi zaka zingati?

1. Munalandidwapo kanthu mokakamizidwa,
kapena moopsyzedwa mu njira
yomenyedwakapena mwa umbanda?
Ayi inde _____
2. Pali wina amene anaafuna kukuberani
kapena kukuberani kumene Ayi inde _____
(monga kukuberani zinthu zanu)?
3. Kodi zinachitikapo kuti wina ankafuna, kapena anakwanitsa kukuthyolerani
m’nyumba inu kulibe? Ayi inde _____
4. Kodi zinachitikapo kuti wina ankafuna, kapena anakwanitsa kukuthyolerani
m’nyumba inu mulipo? Ayi inde _____

Zoopsya zokhudzana ndi ngozi zodza mwadzidzidzi

5. Munachitapo ngozi yaikulu kuntchito, kapena ya galimoto kapena malo ena aliwonse?
Ayi inde _____
Ngati zinakuchitikirani, tchulani chenicheni _____
6. Zinakuchitiranipo za ngozi zodza mwadzidzidzimonga mphepo ya mkuntho, kamvulumvulu wamkulu, kusefukira kwa madzi, chivomerezi, pamene okonedwa anu anataya miyoyo yawo kapena kuvulala? Ayi inde _____
Ngati zinakuchitikirani, tchulani chenicheni _____
7. Munakhudzidwapo ndi ngozi zopangidwa ndi anthu monga ngozi ya sitima, ngozi ya galimoto, nyumba kukugwerani, ngozi ya moto, ndi zina zotero, pamene munaona kutimoyo wanu, wa achibale ndi abwenzi anu unali pa chiopsyezo cha imfa kapena kuvulala? Ayi inde _____
Ngati zinakuchitikirani, tchulani chenicheni _____
8. Munayamba mwakhudzidwapo ndi mankhwala owopsya kapenakapenaodutsira m' mphepo zomwe zingabweretse chiopsezo pa thanzi lanu?
Ayi inde _____
9. Zinayamba zakuchitikiranipo kuti nthawi ina yake mukanaphedwa kapena kuvulala kwambiri. AyiInde _____
Ngati zinakuchitikirani, tchulani chenicheni _____
10. Munayamba mwaonapo wina wake atavulala kwambiri kapena kuphedwa kumene?
AyiInde _____
Ngati zinakuchitikirani, tchulani chenicheni _____
11. Munayamba mwaonapo mitembo (kapatula pa maliro) kapena kunyamula mitembo pa zifukwa zina zili zonse? AyiInde _____
Ngati zinakuchitikirani, tchulani chenicheni _____
12. Zinachitikapo kuti mnzanu okonedwa kapena wachibale anaphedwa kapena anafa chifukwa choyendetsedwa ndi chimwa mowa
AyiInde _____

Ngati zinakuchitikirani, tchulani chibale chake (monga mayi anu chidzukululu chanu, kapena ubale wina otero.)_____

13. Kodi amuna anu kapena akazi anu, Kapena chibwenzi, kapena mwana wanuanamwalirapo? Ayi inde _____

Ngati zinakuchitikirani, tchulani chibale chake _____

15. Munayamba mwadwalapomatenda a kayakaya?

Ayi inde _____

Ngati zinakuchitikirani, tchulani chenicheni _____

16. Munayamba mwalandirapo uthenga wokhudza wokondedwa wanu kuti wavulala kwambiri kapena akudwala matenda a kayakaya, kapena imfa yadzidzidzi?

Ayi inde _____

Ngati zinakuchitikirani, sonyezani _____

17. Munayamba mwamenyapo nkondo ya amalinyero kapena yodziwika panthawi imene munali msilikali? Ayi inde _____

Ngati munamenyapo, kunali kuti: _____

Zoopsya zokhudzana ndi thupi lanu kapena kugonedwa mokakamizidwa

18. Munakamizidwapo kugonana ndi munthu mwa njira ina iliyonse opanda chilolezo chanu?

Ayi inde _____

Ngati zinakuchitikirani, tchulani ubale wanu ndi munthuyo (mongawachilendo, mnzanu, wachibale, kholo, mkulu wanu kapena mng'ono wanu) _____

19. Kopdi munagwiridwapo ziwalo zobisika za thupi lanu (kumunsi) mokakamiza, kapena Kukakamizidwakugwira kumunsi kwawo?

Ayi inde _____

Ngati zinakuchitikirani, tchulani ubale wanu ndi munthuyo (mongawachilendo, mnzanu, wachibale, kholo, mkulu wanu kapena mng'ono wanu) _____

20. Kupatulapo zimene zatchulidwa mumtundazi, munakumanapo ndi mazangazime akuti munthu wina anafuna kugonana nanu mu njira yosayenera mokakamiza?

Ayi inde _____

21. Munayamba mwavulazidwapo ndi mfuti, mpeni, kapena chida china chili chonse

kuchokera kwa mnansi kapena abwenzi anu?

Ayi inde _____

22. Munayamba mwavulazidwapo kwambiri kuchokera kwa mnansi kapena abwenzi anu osagwiritsa ntchito chida china chili chonse?

Ayi inde _____

23. Kodi alipo wachibale amene anakumenyanipo kapena kukukankhani koti kukanakuvulazani?

Ayi inde _____

Zochitika zina

24. Munayamba mwakumanapo ndi mikwingwirima ina kapena mbonaona zina zomwe sizinatchulidwe mumtundamu? Ayi inde _____
Ngati zinakuchitikirani, tchulani chenicheni. _____

Zikomo Kwambiri

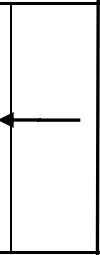
APPENDIX XII

Columbia-Suicide Severity Rating Scale – M’chichewa

Mafunso awa adzafunsidwa kwa munthu yekhayo amene watchulapo za maganizo odzipha kapena kufuna kudzipha kumene.

Screener/Recent – Self-Report

	Kwa mwezi wathawu	
Yankhani mafunso 1 ndi 2	Inde	Ayi
1) Munafunitsitsapo mutafa kapena kufunitsitsa mutagona osaukanso?		
2) Munakhalapo ndi maganizo ofuna kudzipha?		—
Ngati wayankha kuti INDE ku funso 2, yankhani mafunso 3, 4, 5 ndi 6. Ngati wayankha kuti AYI ku funso 2, pitani ku funso 6	↓	
3) Munaganizirapo za njira za m’mene mungadziphere?		
4) Munakhalapo ndi maganizo a mmene mungakwaniritsire kudziphako, kapena m’ mangoganiza chabe zodziphazo koma osachitapo kanthu kuti mudziphe?		
5) Munayika ndondomeko yotani ya m’mene mungadziphere? Mufuna kuti mukwaniritse ndondomeko mwaikhazikitsayi?		
	Kwa miyezi itatu yapitayi	

	Kwa mwezi wathawu
<p>6) Mwachitapo kena kake, kapena munayamba kuchitapo kena kake, kapena kukonzekera kuchitapo kena kake kuti mudziphe?</p> <p>Zitsanzo: kutenga mapilitsi, kupeza mufti, kugawa zinthu zofunikira kwa anthu ena, kulemba kalata yotsanzika kapena kulemba wilu, munaika mapilitsi mkamwa koma osameza, kudziwoza ndi mfuti kenako ndikusintha maganizo, kapena munthu anakulandani, kupita padenga la nyumba koma osadumpha; kapena munamwa mapilitsi, munayesa kudziombera ndi mfuti, munadzichekacheka, munayesa kudzikhweza ndi chingwe, ndi zina zotero.</p> <p>M'moyo wanu onse, ndi kangati kamene munachita izi?</p>	

CHIDZIWITSO KWA OFUNSA: Ngati munthu ayankha kuti “INDE” ku mafunso 4, 5 ndi 6, ndi chizindikiro choopsya, ndipo atengedwe kuti ali pa chiopsyeyo chachikulu cha munthu wofuna kudzipha. Anthu amenewa ayenera kutumizidwa kuchipatala tsiku lomwelo kuti akafunsidwe mwatsatane-tsatane za m'mene akuganizira. Nkofunika kulumikizana ndi akuluakulu a ndende kuti pakhale ndondomeko ya mayendedwe yopita ku chipatala cha Thyolo. Anthu amene ayankha kuti “INDE” ku mafunso 1, 2 ndi 3 atumizidwe kwa mlangizi kuti akapatsidwe tsiku loti akumane nawo.

Zikomo Kwambiri

APPENDIX XIII

Ref No:STF/2/VOL:1/58
Telegrams:PRISCHIEF
Telephone: 525711/526386
Fax:525123
E-mail:hfc.mps.gov.mw



THE CHIEF COMMISSIONER OF PRISONS
NATIONAL PRISON HEADQUARTERS
P.O BOX 28
ZOMBA
MALAWI

22nd May, 2017.

To: Officer In-Charge - Thyolo prison

Cc: Regional Commanding Officer (South)

Cc: Joyce Chikwinde Nambindo

Dear Sir,

RE: RESEARCH PERMISSION FOR MRS JOYCE CHIKWINDE NAMBINDO

With reference to our letter dated 13th January, 2017, the above named individual had already been granted permission by the Acting Chief commissioner of Prisons to conduct research at Thyolo prison. Please note the following specific issues about her research:

- The researcher must book an appointment on the dates when to have an audience with the prisoners as a group, where they will be informed about the research.
- On security grounds, the prison warden must always be present outside the interview room where he/she can see the prisoner and the researcher, but cannot hear the conversation.
- The researcher is free to provide the following items to the prisoners: soft drinks, biscuits, fruits and laundry soap.
- In case of any concern regarding the research, prisoners must be given an opportunity to use the phone to contact the researcher or ethical committee in Malawi

However, the researcher is informed that in line with the security of the department, we expect her to be disciplined and totally compliant to the rules and regulations by restricting herself to the nature of the subject matter alone.

Thank you.

I.P.B. Chadza (S/Supt) signature removed to avoid exposure online
HEAD OF RESEARCH, PLANNING, AND DEVELOPMENT UNIT
For: **CHIEF COMMISSIONER OF PRISONS**

APPENDIX XIV



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee



Room E53-46 Old Main Building
Groot Schuur Hospital
Observatory 7925
Telephone [021] 406 6492
Email: sumayah.arietdien@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

20 July 2017

HREC REF: 077/2017

A/Prof K Sorsdahl
Psychiatry & Mental Health
J-Block-GSH

Dear A/Prof Sorsdahl

PROJECT TITLE: PREVALENCE AND FACTORS ASSOCIATED WITH MENTAL ILLNESS AMONG PRISON INMATES IN THYOLO PRISON, MALAWI (MASTER CANDIDATE: MS J NAMBINDO)

Thank you for your response letter dated 30 May 2017, addressing the issues raised by the Human Research Ethics Committee (HREC).

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study, including the following documentation:-

1. PI synopsis version
2. Protocol Version 2 dated 28 May 2017
3. Consent Form (English version)
4. Questionnaires
5. Budget Summary

Approval is granted for one year until the 30 July 2018.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

We acknowledge that the student, JC Nambindo will also be involved in this study.

Please quote the HREC REF in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval before the research may occur.

HREC 077/2017

Yours sincerely

PROFESSOR M BLOCKMAN signature removed to avoid exposure online
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE

Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938

This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP), South African Good Clinical Practice Guidelines (DoH 2006), based on the Association of the British Pharmaceutical Industry Guidelines (ABPI), and Declaration of Helsinki (2013) guidelines.

The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

HREC 077/2017

APPENDIX XV

Telephone: + 265 789 400
Facsimile: + 265 789 431

All Communications should be addressed to:

The Secretary for Health and Population



In reply please quote No.

MINISTRY OF HEALTH AND POPULATION
P.O. BOX 30377
LILONGWE 3
MALAWI

05 December, 2017

Joyce Chikwinda Nambindo
Malamulo College of Health Sciences.

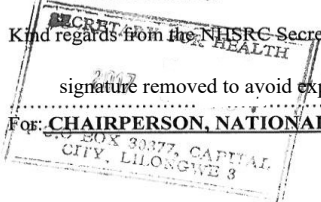
Dear Sir/Madam,

RE: Protocol 17/08/1881: Prevalence and Factors Associated with Mental Illness Among Prison Inmates: Case of Thyolo Prison in Malawi.

Thank you for the above titled proposal that you submitted to the National Health Sciences Research Committee (NHSRC) for review. Please be advised that the NHSRC has **reviewed** and **approved** your application to **conduct** the above titled study.

- **APPROVAL NUMBER** : 1881
- The above details should be used on all correspondences, consent forms and documents as appropriate.
- **APPROVAL DATE** : 05/12/2017
- **EXPIRATION DATE**
This approval expires on **04/12/2018**. After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the NHSRC Secretariat should be submitted one month before the expiration date for continuing review.
- **SERIOUS ADVERSE EVENT REPORTING:** All serious problems having to do with subject safety must be reported to the NHSRC within 10 working days using standard forms obtainable from the NHSRC Secretariat.
- **MODIFICATIONS:** Prior NHSRC approval using forms obtainable from the NHSRC Secretariat is required before implementing any changes in the protocol (including changes in the consent documents). You may not use any other consent documents besides those approved by the NHSRC.
- **TERMINATION OF STUDY:** On termination of a study, a report has to be submitted to the NHSRC using standard forms obtainable from the NHSRC Secretariat.
- **QUESTIONS:** Please contact the NHSRC on phone number +265 888 344 443 or by email on mohdoccentre@gmail.com.
- **OTHER:** Please be reminded to send in copies of your final research results for our records (Health Research Database).

Kind regards from the NHSRC Secretariat.



PROMOTING THE ETHICAL CONDUCT OF RESEARCH
Executive Committee: *Dr.B. Chilima (Chairman), Dr B. Ngwira (Vice Chairperson)*
Registered with the USA Office for Human Research Protections (OHRP) as an International IRB
(IRB Number IRB00003905 FWA00005976)