Title: Evaluating the knowledge and attitudes of trainee clinical officers' (COs) and the skills of qualified COs in identifying and managing common mental disorders in Malawi

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DECLARATION

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ABSTRACT

Background: A high proportion of individuals with serious mental illness remain without treatment partly due to serious shortages of healthcare workers. The result is a large treatment gap for mental disorders in Malawi and globally. To expand mental health coverage in low-income countries (LIC) we require the implementation of strategies that have shown to be feasible and effective such as: integration of mental health into primary healthcare, and expansion of human capacity through task shifting and training of non-specialist health workers. Adequate training is required to improve Clinical Officers' (CO) professional knowledge, attitudes and skills about mental illness so that they are better able to assess, identify and manage mental illness. COs' training consists of a two week psychiatry and mental health theory module, followed by four weeks of practical attachment at a psychiatric hospital. Currently, we do not know whether the curriculum for COs in its present form is effective in increasing knowledge and addressing attitudes of COs towards mental illness.

Aim: The aim of this study was to evaluate the impact of training on knowledge and attitudes of trainee COs and explore the qualified COs' experience of the Malawian clinical context and their application of learned skills in identifying and treating mental health disorders in primary healthcare patients. The specific objectives for the study were as follows: 1) To measure changes in mental health knowledge and attitudes of trainee COs before and after receiving psychiatry and mental health training; 2) To explore the application of taught skills by qualified COs in identifying and treating people with mental disorders in Primary Health Care (PHC) clinics.

Methods: This study consists of a quantitative and a qualitative component. In the quantitative phase, sixty-two trainee COs at the Malawi College of Health Sciences (MCHS) in Malawi completed pre- and post-training questionnaires assessing knowledge, attitudes and skills. The questionnaire comprised the following sections: 1) Socio-demographic questions, 2) The Mental Illness: Clinician's Attitudes Scale (MICA) Version 4 and 3) WHO mental health gap action plan (mhGAP) questionnaire for assessing knowledge. In the qualitative phase, nine COs working in PHC facilities in the Southern Region in Malawi were interviewed using semi-structured interviews to explore the application of skills in identifying and treating mental disorders.

Results: There was a significant difference in attitude scores before and after the training ($t(61) = 3.77$, $p < 0.001$). The overall mean score of the MICA-4 was 45.03 (SD: 6.86) before training and 41.18 (SD: 8.31) after training suggesting decreased levels of stigmatizing attitudes. Knowledge mean scores increased from 11.16 (SD: 3.01) before training to 12.69 (SD: 2.66). There was a statistically significant difference in knowledge mean scores indicating an improvement in knowledge before and after the training ($t(61) = -4.39$, $p < 0.001$). The qualitative interviews provided insight into the difficulties COs experience in the application of skills learnt in pre-service training. The key service level barriers to the provision of mental health service in Malawi were identified as lack of knowledge, lack of in-service training, drug shortages and inadequate pre-service training programs.

Conclusion: The two-week psychiatry training for COs improved knowledge and attitudes but may not be sufficient in ensuring adequate mental health services at PHC level. Qualified COs working in the

healthcare system identified factors such as lack of knowledge, inadequate pre-service training programs, lack of in-service training and drug shortages as key service level barriers to the provision of effective mental health services in Malawi. The training of COs could be strengthened by improving the assessment and management of mental health conditions.

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List of abbreviations

CHAM	Christian Health Association of Malawi
CO	Clinical Officer
CPD	Continuous Professional Development
DALYs	Disability-adjusted life years
DHO	District Health Office
EGPAF	Elizabeth Glaser Paediatric Aids Foundation
EHP	Essential Health Package
GBD	Global Burden of Disease
HSA	Health surveillance assistants
HSSP	Health Sector Strategic Plan
LMIC	Low and middle-income countries
MACRO	Malawi aids and counselling resource organization
mhGAP-IG	Mental Health Gap Action Programme mhGAP-IG
MICA	Mental illness: Clinicians Attitude scale (MICA) Version 4
MNS	Mental and neuropsychiatric disorders
NGOs	Non-governmental organizations
PHW	Primary Health Care Workers
SCID	Structured Clinical Interview for DSM-IV
SRQ	Self-reporting Questionnaire
WHO	World health Organization
ZMH	Zomba Mental Hospital

CHAPTER 1: INTRODUCTION

Background

Mental and substance use disorders remain the leading causes of disability with depressive disorders among the top ten leading causes of Years Lived with Disability (YLDs) worldwide (Rudd, Johnson, Agesa, et al.,2020). Despite this high prevalence, many people suffering from mental disorders do not receive the treatment they need. In high income countries (HICs), between 35% and 50% of people with severe mental disorders do not receive needed treatment (WHO, 2011), while in low- and middle-income countries (LMICs) the proportion is even greater with 75% to 85% of people with severe mental disorders not receiving mental health treatment. For example, in Sierra Leone the treatment gap for mental health services has been estimated at 99% (Sankoh, Sevalie et al., 2018), Further, the treatment gap for common mental disorders is also high. For example, the World Mental Health surveys, which were conducted in 21 countries, revealed that out of 51547 respondents, 10% were diagnosed with 12-month anxiety disorder using the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Of these, 28% received some treatment, and only 10% of those diagnosed received adequate treatment (Alonso, Liu et al., 2018). Evidence shows that many people with mental disorders remain untreated despite the availability of effective treatments (WHO, 2008). In an attempt to decrease the treatment gap, the World Health Organization is advocating for the integration of mental health services into primary care (WHO, 2018).

Primary healthcare (PHC) services refer to any health clinic that offers the first point of entry into the health system, providing initial assessment and treatment for common health conditions as well as referral of those requiring more specialized care to facilities with the resources and trained staff to provide such care (WHO, 2011). General practitioners, nurses and other health staff based in primary care clinics provide PHC services. In Malawi, PHC services are provided by clinical officers (COs), medical assistants and nurses. All these cadres undergo medical training with mental health and psychiatry being part of the curriculum. After completing the training course and internship, COs are registered with the Medical Council of Malawi to practice as clinicians and are expected to assess, diagnose and treat people with general physical conditions as well as mental health conditions. As this cadre of healthcare workers work in primary healthcare settings, they can play a vital role in increasing access to mental healthcare if properly trained and supervised.

In order to successfully integrate mental health into primary healthcare, certain skills and competencies are required for PHC workers to effectively assess, diagnose, treat, support and refer people with mental disorders (WHO, 2011). However, the integration of mental health into primary healthcare is limited by

important gaps in the PHC workers' knowledge and expectations regarding mental healthcare (Abera, Tesfaye et al., 2014). A study in Ethiopia found low levels of knowledge about mental disorder diagnoses, symptoms and treatment in PHC workers, with almost half (45%) of PHC workers attributing mental disorders to supernatural factors (Haider, Rahman et al., 2018). In Malawi, it has also been observed that most PHC workers are not competent and confident in dealing with psychiatric patients (Udedi, 2016; 2014). Despite a high prevalence of depression (30%), the detection rate by COs in Malawi remains low (Udedi, 2014; Kauye, et al., 2014). Therefore, appropriate and adequate training of PHC workers is important for integrating mental health into PHC (WHO, 2011).

Furthermore, attitudes and behavior of healthcare professionals remain a major impediment in the delivery of mental health services. Studies have shown that healthcare providers perceive mental health as something not within their field of practice despite having received pre-service training (Singh, 2018). It is critical that PHC workers are adequately prepared and supported so that they are competent to provide mental health services for patients requiring mental healthcare (WHO, 2008).

Malawi context

Malawi is a land-locked country with an approximate area of 118 thousand square kilometers and a population of 17 563 749 (WHO, 2014; MNSO, 2018). Malawi shares its borders with Zambia on the western side, Mozambique in the south-east and west and Tanzania in the northern part. The total health budget is 6.24% of gross domestic product and the annual per capita government expenditure on health is $39.8 (WHO, 2011; WHO, 2019: MOH, 2020). The contribution of neuropsychiatric disorders to the burden of disease in Malawi is estimated to be 4.3% (MNHA 2020), but only 1% of the health budget is allocated to mental health care (Udedi, 2016; WHO 2011)

According to the Malawi Health Sector Strategic Plan II (2017-2022), health services in Malawi are delivered through the Basic Health Package (BHP). The BHP operates at primary, secondary and tertiary level of the health service delivery system (MOH, 2017). In line with the Local Government Act 1998, health services in Malawi have been decentralized (MOH, 2017). The Malawi mental health policy supports decentralization, integration and human resources development needed for mental healthcare service delivery (MOH, 2020). However, implementation of these policy changes and plans are being hampered by insufficient numbers of mental healthcare providers at all levels (MOH, 2020: Kauye, 2019).

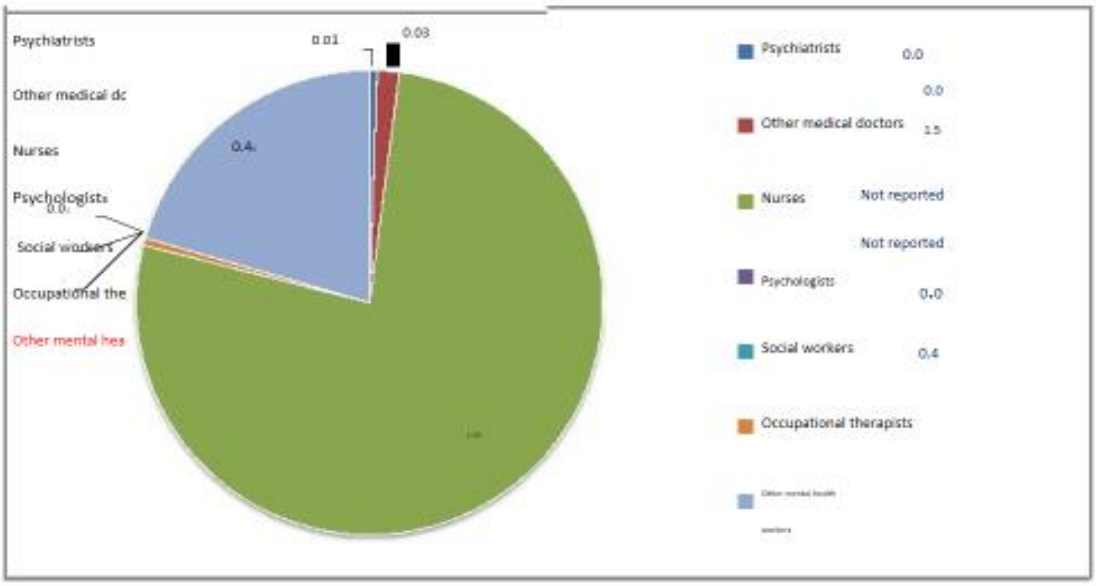

Figure 1: Mental health workforce in Malawi (rate per 100,000 population)
Source: [WHO Mental Health Atlas 2014 database for country profile 1st October]

Rationale

Mental disorders affect a significant number of people globally. Because of the high burden, many LMICs are failing to provide effective and adequate mental health services (Fekadu, Medhin et al., 2019). Very few countries, including Malawi, have an optimal mix of mental health services at all levels of care as recommended by the World Health Organization (WHO, 2008). Since service delivery for mental disorders is mostly concentrated in psychiatric hospitals, mental health services are not readily available for the majority of people living with mental disorders (WHO, 2017). In addition, LMICs have serious shortages of specialized mental health professionals leading to a huge treatment gap and low quality of mental health services WHO/WONCA, 2008). Non-specialist health workers, including COs, are the key personnel responsible for the management of mental disorders in the absence of specialized mental health professionals (WHO/WONCA, 2008). Other factors that contribute to the treatment gap include: poor detection and treatment of mental disorders, knowledge, attitudes and behavior (KAB) of health workers, and poor financing of mental health services (WHO, 2003; Crabb, Stewart, Kokota, 2012; Al-Atram, 2018). Most people living with mental disorders are not diagnosed because of lack of knowledge, skills,

confidence and negative attitudes of health workers (Dube, Uys, 2016; Ma, Huang et al., Udedi, 2014; 2018; 2016).

Expanding mental health coverage requires the implementation of strategies that have been shown to be feasible and effective such as: integration of mental health into primary healthcare, and expansion of human capacity through task shifting and training non-specialist health workers (WHO/WONCA, 2008). Delivery of mental health services through primary healthcare services as the first level of contact with the healthcare system increases access and is more cost effective than specialist services. In Malawi mental health facilities are centralized with few mental health professionals resulting in services being less accessible to many people (MOH, 2020; Udedi, 2016). Integration of mental health services into primary healthcare will therefore help to increases access to mental health services for people who need them (WHO/WONCA, 2008).

In order to effectively integrate mental health services into primary healthcare in Malawi, COs need to acquire relevant knowledge and skills to identify, refer and provide basic care for people experiencing symptoms of mental disorders at community level. However, it is not clear what factors contribute to poor detection rates and treatment of mental disorders in this setting

Knowledge, attitudes and behavior of health workers may contribute to poor mental health service delivery (Sahile, Yitayih et al., 2019). Mental health training has shown to increase knowledge, attitudes and behavior among primary healthcare professionals (Alfredsson, San Sebastian et al., 2017; Haider, Rahman et al., 2018). Adequate training is therefore required to improve COs' negative attitudes and professional knowledge about mental illness. There has been limited research aimed at evaluation of pre-service mental health training courses in Malawi. Currently we do not know whether the curriculum for COs at Malawi College of Health Sciences (MCHS) as part of the Diploma in Clinical Medicine course in its present form is effective in increasing knowledge and addressing attitudes of COs towards mental illness. This study aims to address this gap.

Aim

The aim of this study is to evaluate the impact of training on knowledge and attitudes of trainee COs at Malawi College of Health Sciences (MCHS) and to explore the application of skills in detecting and treating mental health disorders by qualified COs working in primary healthcare facilities.

Specific objectives

1. To measure mental health knowledge and attitudes of trainee COs before and after receiving a 2-week psychiatry and mental health training module.
2. To explore the experiences of COs in the Malawian clinical context and their application of taught skills by qualified COs trained at MCHS (Blantyre campus) during the past six years in identifying and treating people with mental disorders.

Thesis outline

In Chapter 2, I present an international and global literature review on prevalence and burden of mental health conditions, the mental health treatment gap, health service factors that contribute to the mental health treatment gap and strategies available for closing the treatment gap internationally and in Malawi. In Chapter 3, I describe the methodology employed in the current study. The results of the study are reported in Chapter 4, while in Chapter 5, these results will be discussed and compared against both international and regional literature. The thesis ends with recommendations for policy, education and research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The literature review will begin by defining mental disorders followed by describing the burden and the prevalence of mental disorders globally, then in Africa, before focusing on Malawi specifically. It will then highlight the large mental health treatment gap as well as health service factors that contribute to this gap. Integrating mental health into the training of PHC workers at university level is discussed as a strategy to increase the skills for detection and treatment of mental disorders in order to close the treatment gap.

2.2 Definition of mental disorders

The DSM 5 defines mental disorders as

> "a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress or disability in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious, or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above" (DSM 5, 2013: 20).

Mental disorders can be categorized into two groups: (1) common mental disorders (CMD), and (2) severe mental disorders. CMDs are the leading cause of disability worldwide and include anxiety, depression, and substance use disorders (Kerebih, Ajaeb et al., 2017; Steel, Marnane et al., 2014). In contrast, severe mental disorders (SMDs) refer to disorders such as schizophrenia characterized by psychotic symptoms (Jenkins, Mbatia et al., 2010; Nguyen, Tran et al., 2019). The term psychosis is applied to mental disorders characterized by symptoms such as disorganized behavior, and speech, delusions, hallucinations, negative symptoms of schizophrenia (avolition, alogia) and increase in self-esteem and goal directed activity seen in manic states (DSM 5, 2013; Lieberman and First, 2018).

2.3 Prevalence and burden of mental disorders

A global increase in population and life expectancy has resulted in an increase in the burden of chronic diseases globally (Charlson, Diminic et al., 2014; Global Burden of Disease Study Collaborators (GBD), 2017). This has led to a global increase of years lived with disability (YLDs) from 562 million to 853 million (GBD, 2017). Mental and substance use disorders contribute to this increased YLDs with major depression

being among the top ten causes of YLDs worldwide (GBD, 2017). A systematic review and meta-analysis investigating the prevalence of CMDs, included 174 studies from 63 countries and showed a 29% lifetime prevalence (Steel, Marnane et al., 2014). In this study, women had a higher period prevalence for mood (7% vs. 4%) and anxiety (9% vs. 4%) disorders while men had a higher period prevalence (2% vs. 8%) for substance use disorders (Steel, Marnane et al., 2014). In another study conducted in South Africa, the prevalence of any lifetime disorder was 30%, while the most prevalent lifetime disorders were alcohol abuse (13%) and major depression (10%) (Stein, Seedat et al., 2008)**.** Again, in this study mood and anxiety disorders were more common in women while substance use was more common in men (Stein, Seedat et al., 2008). In Nigeria, Gureje, Lasebikan et al., (2006) found a 12% lifetime prevalence for mental disorders and 12 month prevalence of 6%. The most common disorders in the survey were anxiety disorders with lifetime prevalence of 5% for specific phobia and 12 month prevalence of 3.5%, major depression with a 3% lifetime prevalence and 1% 12 month prevalence, and alcohol abuse disorder with a 3% lifetime and 1% 12 month prevalence Gureje, Lasebikan et al., (2006). There is a scarcity of literature on large-scale community prevalence studies of mental disorders using standardized assessment instruments in Malawi. Studies conducted in primary healthcare settings in Malawi found that the point prevalence rates for any CMD and depression were 29% and 19%, respectively (Kauye et al., 2014; Udedi, 2016).

2.4 Treatment gap

The treatment gap for mental health is defined as the extent to which the health system fails to meet the needs of people with mental disorders at a population level (Fekadu, Medhin et al., 2019). It is considered a public health concern since only a small minority of those in need receive even the most basic treatment (WHO, 2002). In LMICs 75% to 85% of people with severe mental health conditions do not have access to needed mental health treatment, while in HICs the figure is between 35% and 50% (WHO 2010: Lund et al., 2015). In a World Mental Health (WMH) survey of 21 countries conducted among individuals with a 12-months DSM-IV anxiety disorder, an estimated treatment gap of 72.4 % was reported (Alonso, Liu, Evans-Lacko et. el., 2018). A paper including WMH survey data from six LICs and eight HICs reported that 36% to 50.3% of people with mental disorders in HICs and 76.3% to 85.4% in LICs did not receive treatment for severe mental disorders (Demyttenaere et. el., 2004). In an investigation involving 51547 respondents Alonso et al. (2018) found that, out of 9.8% who had anxiety disorder only 28% receive some treatment and the treatment was of poor quality in 90% of those who were treated. Another study which was conducted to estimate the treatment gap using community-based data from surveys of mental disorders in Argentina, Brazil, Canada, Chile, Colombia, Guatemala, Mexico, Peru, and the United States (Kohn, Ali

et al., 2018) showed a treatment gap of 66% for all Americas, and 53% North America, 75% Mesoamerica, 79% and South America, and a treatment gap of 73% for moderate and severe mental disorders.

The treatment gap in LMICs is huge as mentioned above. For example, in the Chitwan district of Nepal only 8% of people with depressive disorders and 5% of those with alcohol use disorders received treatment from a provider in a period of 12 months (Luitel, Jordans et al., 2017). Furthermore, only a few of these people sought treatment from primary healthcare facilities (Luitel, Jordans et al., 2017). In the Kwazulu Natal province of South Africa, a treatment gap of 80% for acute in-patient and ambulatory mental healthcare was reported (Burns, 2014). A community based cross-sectional survey involving 3147 women who were between 1 and 12 months post-partum in Ethiopia showed that only 12.7 % of women with post-partum depression symptoms (n = 49) were on treatment from the onset of illness but when considering those with severe post-partum depression (PPD) only 4.2 % of women (n = 16) received mental health care (Azale, Fekadu, Hanlon, 2016).

In order to close the gap for mental health treatment, a clear understanding of factors that act as a barrier to mental health treatment is needed. Factors that contribute to the treatment gap occur at different levels of the service delivery system. Barriers at individual, societal and organizational level include comorbid conditions, stigma associated with mental disorders, and lack of affordable mental health services and trained staff (Schierenbeck, Johansson et al., 2013: Thornicroft, Semrau, 2019). In addition, the use of centralized mental health services as the main service delivery system for mental health is also considered to be a barrier to access for mental health services (Thornicroft, Semrau, 2019). Although numerous factors have been associated with contributing to the mental health treatment gap at community level and policy level this section will only focus on health-service related barriers to the provision of accessible mental health services. The studies presented thus far provide evidence that the treatment gap for mental health remains a public health concern

2.4.1 Poor detection and treatment of mental disorders

Mental disorders have been difficult to treat due to health workers' inability to identify psychological symptoms, deciding whether action is needed and identifying the options for interventions (Kazdin, 2019) especially in LMICs, but in HICs, poor detection, diagnosis and treatment of mental disorders also occur (Vermani, Marcus et al., 2011). In a study in Canada, detection rates of mood and anxiety disorders in primary care were found to be poor with missed diagnosis rates of 66% for major depressive disorder, 93% for bipolar disorder, 86% for panic disorder, 71% for generalized anxiety disorder, and 98% for social

anxiety disorder (Vermani, Marcus et al., 2011). In Ethiopia, a study which aimed to assess the treatment gap for alcohol use disorder found a treatment gap of 87% and the main barriers to access to care were stigma (70%) and low help seeking behavior (13%) (Zewdu, Hanlon, et al., 2019).

In Malawi, a cross sectional survey investigating the prevalence of depression in primary care settings revealed a 30% prevalence of depression with zero detection by clinicians (Udedi, 2014). In addition, a study conducted by Chorwe-Sungani, Shangase, and Chilinda (2014) indicated that mental health problems in Malawi are often not detected and managed, because health professionals are not confident in providing care for mental disorders.

2.4.2 Knowledge about common mental health conditions

Knowledge about mental disorders is important for the successful scale-up of quality mental health services. A number of studies across several countries in LMICs have identified lack of knowledge as a major barrier for the provision of mental health services. For instance, in Cameroon, a study on knowledge, attitudes and practices (KAP) of general practitioners, social workers, pharmacy attendants and nurses towards depression, reported that only 2% knew of a tool used to diagnose depression(Mulango, Atashili et al., 2018). In addition to this, 45% of PHC workers did not know whether psychotropic drugs were available for mental disorders and very few reported to have ever prescribed a psychotropic drug (Mulango, Atashili et al., 2018). In a South African study on knowledge, attitudes and beliefs on care of psychiatric patients, nurses displayed a positive attitude but had inadequate knowledge to manage psychiatric patients (Dube & Uys, 2016). Likewise, a study which was conducted to assess the mental health education gap among PHC workers in Nepal, found that PHC workers had limited training, lack of knowledge and skills, and were not comfortable delivering mental health care (Acharya, Hirachan, Mandel, van Dyke, 2016)

Several instruments have been used to assess mental health knowledge, including of healthcare workers (e.g. Mental Health Knowledge Schedule [MAKS-I]), the general public (e.g. Mental Health Literacy Scale), and pre- and post-training, such as on the mhGAP. The MAKS-I (Pingani, Sampogna et al., 2019) is a self-administered measurement tool which was developed in the United Kingdom for the assessment and tracking of healthcare workers' knowledge regarding mental illness. The second measurement tool is the Mental Health Literacy scale (Wei, McGrath et al., 2015), developed for use in the general public to assess the ability to identify illness and factual knowledge of mental disorders. It was found to have excellent internal consistency and reliability and good validity (Wei, McGrath et al., 2015). The third tool is the mhGAP pre-test and post-test questionnaire which was designed for assessment of knowledge for WHO

mhGAP based training (WHO, 2017). The WHO mhGAP pre-test and post-test questionnaire has been used in Mulanje, Malawi in a study evaluating WHO mhGAP training of primary healthcare workers (Kokota, Lund et al., 2020).

2.4.3 Attitudes and behavior towards mental illness

Negative attitudes and behavior of health professionals have long been associated with impeding access to mental healthcare and have been identified as key issues in working with people with mental illness (Sahile, Yitayih et al., 2019). Negative attitudes have been noted in health care professionals at all levels of care from general practice physicians and specialists in Saudi Arabia (Al-Atram, 2018) to PHC workers in China (Ma, Huang et al., 2018). However, in the Saudi Arabian study, family practitioners were found to have positive attitudes, as were PHC workers in Cambodia. Further, in the Cambodian study (Alfredsson, San Sebastian et al., 2017), PHC workers clearly supported mental health integration into primary healthcare with 81% showing an interest in taking part in the delivery of mental health services.

A systematic review on stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery was conducted on data from the United Kingdom, United States, Australia, Slovenia, Greece, Estonia, Slovakia, Poland and Scotland. Health workers showed stigmatizing attitudes and were less empathetic to people with substance use disorders (van Boekel, Brouwers et al., 2013). In Cameroon, 66% of PHC workers felt uncomfortable helping patients with depression (Mulango, Atashili et al., 2018).

Evidence has shown that successful treatment outcomes for mental illness in health facilities is undermined by high levels of stigma towards mental illness (Haider, Rahman et al., 2018). It is therefore critical to improve negative attitudes and the importance of the management of severe mental illness among primary healthcare workers to reduce stigma (Ma, Huang et al., 2018). Training of PHC workers on mental health is associated with positive attitudes towards people with mental disorders as a result of better understanding and knowledge of mental illness in terms of pathophysiology, treatment and prognosis (Alfredsson, San Sebastian et al., 2017; Haider, Rahman et al., 2018). Adequate training in mental illness is therefore required to improve PHC providers' negative attitudes and professional knowledge (Ma, Huang et al., 2018). Stigma and discrimination are also thought to contribute to the treatment gap as people fear that by being seen going to mental health services they will be discriminated against and stigmatized (Thornicroft, Semrau, 2019).

2.4.4 Poor financing and organization of mental health services

In order to successfully scale up cost effective mental health services, financial resources are required to develop and sustain these services. Adequate financing is required to help policymakers develop and implement functional and high-quality mental health systems (WHO, 2003). However, mental health is neglected in many countries (Vartak and Nagarajan, 2019). Globally the average mental health expenditure per capita is US$ 1.63 per year. LMICs spend around 1% of their health budget on mental health while HICs spend on average around 5% (WHO, 2011). In Malawi, mental health services expenditure around 1% of the general healthcare budget (Udedi, 2016). Stigma, lack of understanding of the causes of mental disorders and unavailability of effective treatments are some of the reasons for such neglect (Nagarajan and Vartak, 2019). WHO recommends the integrating mental health financing with general health financing in countries where mental health systems are not well established (WHO, 2003).

The WHO recommends that mental health services should be organized based on the framework describing the optimal mix of services for mental health (WHO, 2003). The framework **(Figure 2)** consists of four interlinked service delivery levels: informal healthcare, primary healthcare, psychiatric services in the general hospitals and community mental health services and specialist healthcare. The figure illustrates that mental health needs of individuals become greater and require more intensive professional assistance and higher expenditure for care at each subsequent level of the pyramid. Overall, this indicates that integrating mental health into the primary healthcare greatly increases access to mental health services.

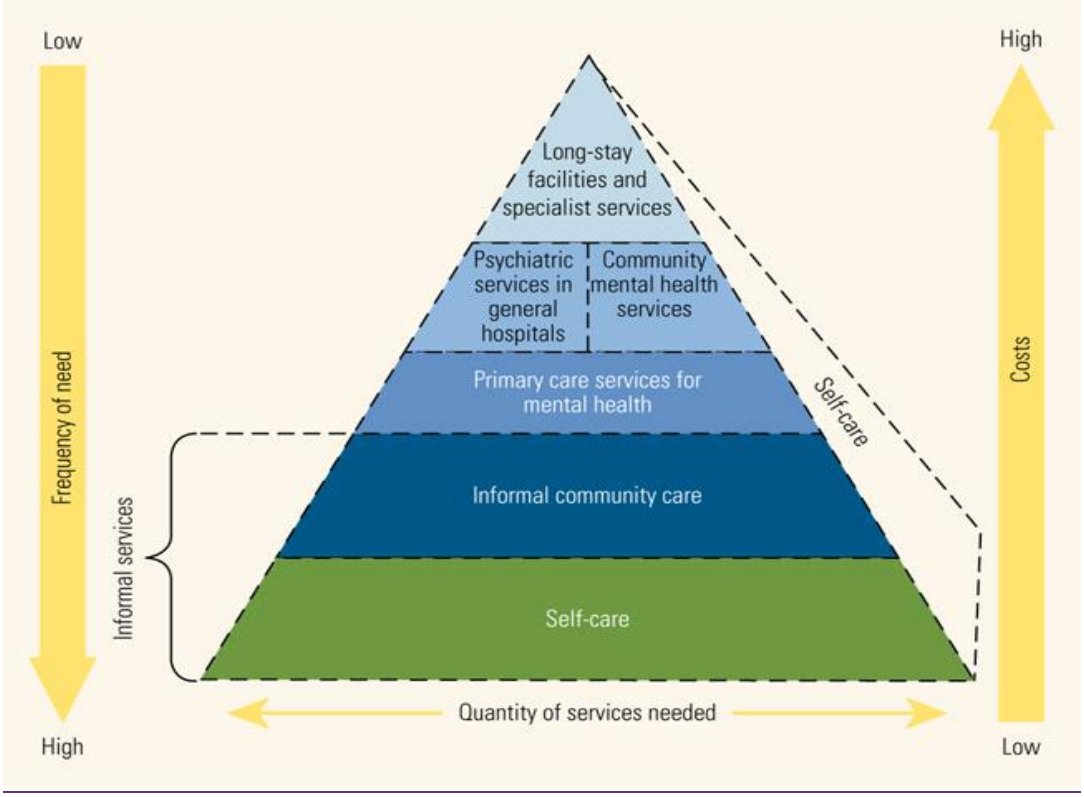

Figure 2: World Health Organization service organization pyramid for an optimal mix of mental health service. *Source*: [Organization of Services for Mental Health: Mental Health Policy and Service Guidance Package. Geneva: WHO, 2003]

Very few countries, including Malawi, have an optimal mix of services. Psychiatric hospitals remain the dominant mental health resource, with, on average, 77% of African countries' mental health budgets spent on these facilities (WHO, 2011). In Malawi, mental health facilities are centralized with few mental health professionals making services inaccessible to many people (Udedi, 2016). Integration of mental health services into primary healthcare will therefore help to increase access to mental health services for people who need them (WHO, 2008). If mental health is to be effectively integrated into primary healthcare in low-income countries, PHC workers need to acquire relevant knowledge and skills to be able to recognize, refer and support people experiencing mental disorders in their own communities (Armstrong, Kermode et al., 2011).

2.4.5 Lack of human resources

Shortages in the mental health workforce is a major barrier to mental health service provision. There is however, variation across countries in the number of mental health workers per population. The median number of health workers in HICs is 72 per 100,000 population while in low-income countries (LICs) it is

below 1 per 100,000 population (WHO, 2011). Globally, 3.3 per 100,000 population graduate with degrees as doctors and a smaller number of people graduate as psychologists, psychiatrists, sociologists and occupational therapists (WHO, 2011). Only about 3% of training for medical doctors and nurses is devoted to psychiatry and mental health-related subjects (WHO, 2011).

2.5 Closing the gap

At present health systems are failing to meet the needs of people with mental disorders, particularly in LMICS due to the high level of disease burden coupled with low availability of human and financial resources compared to high income countries (Semrau, Evans-Lacko et al. 2015). Expanding mental health coverage requires the implementation of interventions that are shown to be feasible and efficacious such as: integration of mental health into primary health care; increasing mental health human resources through task shifting and training non-specialist health workers; and use of technology to increase access, and reduce cost and stigma (Rebello, Marques et al. 2014). The following section will discuss integration of mental health into primary health care and increasing mental health human resources as strategies that may help in addressing barriers to accessing mental health care.

2.5.1 Training of healthcare workers

The World Health Report 2006 focused global attention on the shortage of health workers. The report shows that many LMICs face a health workforce crisis, and the scarcity of human resources and training is overwhelming, particularly for mental health (WHO, 2006). For low-income country such as Malawi the average rate of health graduates in the past academic year per 100,000 population was 0.01 (WHO 2011). Given these data, it is not surprising that lack of access to mental health services has long been a major problem in Malawi (Wainberg et al., 2017).

In an effort to expand the coverage of mental health services, countries around the world have been moving towards community mental health care (Shidhaye, Lund, Chisholm, 2015). Although general practice clinicians, nurses and medical officers are relatively scarce, they are the backbone of primary healthcare in Malawi and other LMICs. In the absence of specialized mental health professionals, mental disorders can be successfully treated using evidence-based interventions delivered by trained non-specialized health workers in low-resource communities or primary care settings (Wainberg et al., 2017). Using non-specialized health care workers through 'task-sharing' facilitates the integration of mental health into primary care (Maconick, Jenkins, Fisher et. Al., 2018).

Ensuring that all health care workers destined for working at a PHC level are well-trained in mental health will further pave the way for this integration. Therefore, pre-service mental health training should be a vital strategy in order to reduce the mental health treatment gap by increasing the detection of mental disorders, providing basic initial management and referring on for more complex interventions when required.

2.5.2 Integration of mental health into primary healthcare

The WHO recommends the integration of mental health into primary care because it increases access to care and it is an affordable and cost effective strategy in resource limited settings (WHO/WONCA, 2008). Other advantages of integrated mental health services include reduction of the burden of mental disorders, promotion of human rights and good health outcomes for those suffering from mental illness. Primary health care (PHC) services include any health facility that offers a first point of entry into the health system providing initial assessment and treatment for common mental health conditions and referral of those requiring more specialized care to facilities with the resources and trained staff to provide such care (WHO, 2011). Many people suffering from mental disorders present in primary healthcare for treatment across their lifespan (Glew, Chapman, 2016). In primary healthcare settings, non-specialist healthcare workers can provide mental health care as part of their day-to-day duties, providing integrated and holistic services (WHO/WONCA, 2008). A study in Pakistan found general support among all the stakeholders for integration of mental health services within PHC, though there were also a number of reservations that were identified such as the lack of human resources in the field of mental health as a limiting factor (Hussain, Khan et al., 2018). In South Africa a review of studies found that integrating mental health care into existing health systems may be the most effective and cost-efficient approach to increase access to mental health services (Jack, Wagner et al. 2014). In Malawi, people with CMDs have a higher mean number of clinic visits (1.6 vs 1.19, p = .02) in the previous three months when compared with those with no probable CMD (Udedi, Swartz, Stewart, Kauye, 2014). Integrated mental health services therefore, provide an opportunity for more patients to access treatment and care (Glew, Chapman, 2016)

Despite policy change as stipulated in the Malawi Mental Health Policy, mental health services are not fully integrated into primary health care (MOH, 2020). Tertiary units which are located in each of the three regions continue to be the main mental health service providers (MOH, 2020). Efforts to pilot integration of mental health services into primary healthcare using Health Surveillance Assistants (HSAs) have been made (Wright, Chiwandira, 2016). HSAs are a cadre of healthcare workers who are mainly involved in

health promotion and preventive services at community level in Malawi (MOH, 2017). Each HSA provides care to a population of approximately 1,000 people.

2.5.3 Studies on mental health training evaluations

A pilot program to integrate mental health in the activities of HSAs was conducted in Zomba (Kauye, Chiwandira, 2014). The aim of the program was to help HSAs acquire knowledge and skills so that they would be able to carry out community based mental health promotion, detection and other interventions for people with mental illness. Results of this pilot program showed that there was an improvement in the knowledge gap after training and 98.5 % of the participants felt that they were well equipped to work with people with mental health problems (Kauye, Chiwandira, 2014). In 2014, another study on the development, implementation and evaluation of a mental health care training program for HSAs in the provision of mental health services was conducted in the southern region of Malawi (Wright, Common, Kauye, 2014). The intervention also demonstrated positive effects on HSAs' knowledge and confidence in providing care and mental health promotion activities after the training. This was later followed by a district-wide scale-up of a village-based health workers' mental health task-sharing intervention in Zomba, Southern Malawi, which showed how well village-based health workers identified and helped people with mental health problems (Wright, Chiwandira, 2016).

Thereafter, another study was conducted to evaluate 43 community health workers Mental Health Gap Action Programme (mhGAP) training in Mulanje (Malawi) (Kokota, Lund, 2020). This study demonstrated increased knowledge soon after training, with mean scores increasing from 11.8 (SD: 0.33) to 15.1 (SD: 0.38) on the mhGAP questionnaire and the score remained high 6 months later. In addition, the study also showed improvements in confidence levels and detection of severe mental illness in primary care. Findings in another study conducted to determine whether mhGAP training and supervision package could be used in non-specialist healthcare workers showed an increase in knowledge and confidence levels following training (Ahrens, Kokota, Mafuta, et al., 2020). Results in this study were similar to the findings in studies highlighted above, but there was no statistically significant change in attitude, skills and confidence scores. From these studies, we can conclude that mental health training of PHC workers improves the quality of detection and management of patients seen in primary care in LMICs (Kauye, Jenkings, Rahman, 2013: Kokota, Lund et al, 2020)**.** All the studies highlighted above were conducted targeting training of PHC workers at community level. Little information is available on the evaluation of pre-service training and more specifically on COs training.

2.6 Search strategy

A structured literature review was conducted for studies measuring knowledge attitudes and skills. The inclusion criteria for the structured literature review included studies (1) reporting training evaluation for medical students, medical officers, clinical associates, nurses, HSAs, primary healthcare workers and community health workers (2) conducted in HIC and LMICs. In order to review the literature, I used search terms: 'mental health' AND 'training' AND 'primary care,' or 'integration' to identify relevant papers. The databases I searched were PubMed, PMC, Google scholar and Cochrane database. The Boolean operators were used in the search terms to identify the literature. **Table 1** Presents a summary of the qualitative and quantitative studies included in the literature review.

Table 1: **Studies evaluating attitudes and knowledge of health workers for review**

Author	Date	Country	Title	Sample	Intervention	Study Design	Result
Alfredsson, et al	2017	Cambodia	Attitudes towards mental health and the integration of mental health services into primary healthcare: a cross-sectional survey among health-care workers in Lvea Em District, Cambodia.	75 health-care workers	A structured self-reporting questionnaire	Cross-sectional survey	• Health integr PHC • 81.3% to del
Spagnolo et al.,	2019	Tunisia	Building capacity in mental health care in low and middle-income countries by training primary care physicians using the mhGAP: a randomized controlled trial	345 PCPs	WHO mhGAP pre-and-post test for mhGAP based training Self-efficacy questionnaire The Mental Illness: Clinicians' Attitudes (MICA) Scale (version 4.0)	A randomized controlled trial	• There in mer self-ef report • Chang pre-tra • 18 mo specia
Udedi M.	2014 .	Malawi	The prevalence of depression among patients and its detection by primary health care workers at Matawale Health Centre	350 adults	Self-Reporting Questionnaire (SRQ-20) and Structured Clinical Interview for DSM-IV Axis I disorders (SCID)	A cross-sectional survey	• 30% p • 0% d
Armstrong, et al	2011		A mental health training program for community health workers in India: impact on knowledge and attitudes	63 communit y health workers	Interviewer-administered Mental Health Literacy Survey.	Pre-test post-test study design	• CHWs menta • Traini poten interv
Dube, et al	2016		Integrating mental healthcare services in primary healthcare clinics: a survey of primary healthcare nurses'	Nurses in six rural clinics	The Mental Illness: Clinicians' Attitude Scale (MICA version 4)	Quantitative survey	• When worki attitu be pos • PHC n manag

Author	Date	Country	Title	Sample	Intervention	Study Design	Result
			knowledge, attitudes and beliefs.				
Kauye, et al	2014	Malawi	Training primary healthcare 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	22 medical assistants	SRQ in the first phase and the Structured Clinical Interview for DSM-IV (SCID-I/NP	repeated cross-sectional surveys	• The po 28.8% • 0% de depre • After t detect two ar ○ De (O p ○ An ○ M 0.4 • There depre than t
Wright et al.,	2016	Malawi	Building capacity for community mental health care in rural Malawi: Findings from a district-wide task-sharing intervention with village-based health workers	430 HSAs	The Client Intervention Report Form and the Mental Health Promotion Activity Report Form	implementation and structured evaluation	• 240 co to rec and se • 850 m were
Moodley et al.,	2022	South Africa	Enabling mental health task-sharing: a collective case study of undergraduate clinical associate training programmes in South Africa	Multicenter, 99 Interviews	in-depth interviews utilizing videoconferencing	qualitative collective case study	• The qu varied • Minim were
Kokota, et al.,	2020	Malawi	Evaluation of mhGAP training for primary healthcare workers in Mulanje, Malawi:	43 HCW	CAMI and WHO mhGAP pre-and-post test for mhGAP based training	Quasi - experimental method with an interrupted	• The m signifi trainin after t

Author	Date	Country	Title	Sample	Intervention	Study Design	Result
			a quasi-experimental and time series study			time-series design.	• Mean increa SD: 6.((84) = • No ov CAMI 6 mon CAMI • The F- Autho Restri Health p = .09 0.05 = 0.04; p
Jervase et al.,	2022	Malawi	An evaluation of mental health capacity building among Community Rehabilitation Officers (CROs) in Malawi: A mixed-methods case study	57 CROs	WHO mhGAP pre-and-post test for mhGAP based training	Mixed-methods exploratory single case study.	• CRO c menta (pre-te (post-t p < 0.(post-t (Medi Media 5.584, • Chang 0.750, t(46) ¼ (β ¼ 0 not re
Chaulagain et al.,	2020	Mexico, Nigeria, Liberia, Sierra Leone, Somaliland, ArmeniaGeorgia, Ukraine	WHO Mental Health Gap Action Programme Intervention Guide (mhGAP-IG): the first pre-service training study	11 training institutions	A descriptive cross-sectional study was conducted using an electronic questionnaire		• mhGA institu • Three • Target medic neuro studer • Trainir manag

Author	Date	Country	Title	Sample	Intervention	Study Design	Result
		and Kyrgyzstan)					• All par trainer with th
Al-Atram AA	2018	Saudi Arabia	Physicians' Knowledge and Attitude towards Mental Health in Saudi Arabia.	142	Questionnaires	Descriptive cross-sectional study design	• 42.9% and 8. that th psychi • 77.9% specia • 91.67% an inte
Dube, et el	2016	South Africa	Integrating mental healthcare services in primary healthcare clinics: a survey of primary healthcare nurses' knowledge, attitudes and beliefs.	Nurses in six rural clinics	The Mental Illness: Clinicians' Attitude Scale (MICA version 4)	Quantitative survey	• Positiv experi patien • PHC n manag
Armstrong, et el	2011	India	A mental health training program for community health workers in India impact on knowledge and attitudes	63 community health workers	Interviewer-administered Mental Health Literacy Survey.	Pre-test post-test study design	• Trainir recogn • Trainir unhelp pharm
Wright J,	2016	Malawi	Building capacity for community mental health care in rural Malawi: Findings from a district-wide task-sharing intervention with village-based health workers	430 HSAs	The Client Intervention Report Form and the Mental Health Promotion Activity Report Form	implementation and structured evaluation	• 240 vi recogn people health • 850 m were c

Author	Date	Country	Title	Sample	Intervention	Study Design	Result
Spagnolo et al.,	2019	Tunisia	Mental health knowledge, attitudes, and self-efficacy among primary care physicians working in the Greater Tunis area of Tunisia	112 PCPs	WHO knowledge questionnaire and the *Mental Illness: Clinicians' Attitudes (MICA) Scale* (version 4.0) and The self-efficacy questionnaire	Descriptive analyses and regression models	PCPs had symptoms practices a • PCPs h ○ ○ • most P ○ ○ • PCPs h ○ ○ ○

2.6.1 Measurement tools for health worker attitudes and knowledge

Adequate training of non-specialist healthcare workers is considered as one of the key principles for the integration of mental health into primary care (WHO, 2008). There is a growing research literature on the evaluation of training for non-specialist healthcare workers many countries. Caulfield, Vatansev, Lambert, Van Bortel, (2019) conducted a systematic review involving 29 studies from 16 different countries. In these studies the target groups were primary health care workers and community healthcare workers. Spagnolo et al., (2019) used a randomized controlled trial study design targeting primary care physicians (PCPs). The WHO mhGAP-based training was used over six weeks and knowledge, attitudes and self-efficacy were assessed using the mhGAP pre- post-test questionnaire, the MICA-4 and the self-efficacy questionnaire

respectively. In Saud Arabia an evaluation for mental health training was done using a descriptive cross-sectional study design. The questionnaire used in this study was developed by the researchers to assess anxiety and depression utilizing questions from Royal College of Psychiatry Parts I and II, together with some questions created by the researchers. The study target groups were general practitioners, specialists and family doctors (Al-Atram, 2018)

A number of authors in Malawi have used mhGAP based training to improve PHC workers knowledge skills and attitudes (Jervase a et al., 2022; Kokota, Lund, et al., 2020 ; Arhens, Kokota, et al., 2020). Primary health care workers were the primary target group in two of these studies while the target group Jervase et al., (2022) was Community Rehabilitation Officers' (CROs). Mixed methods were used in two of these studies (Jervase a et al., 2022; Arhens, Kokota, et al., 2020) while one study used quasi-experimental method and time series (Kokota, Lund, et al., 2020).

More than 400 tools have been used to measure attitude and stigma in different study populations such as individuals with mental illness, communities and healthcare workers (Fox, Earnshaw et al., 2017). Measures that are used to assess attitudes and beliefs among healthcare professionals and students include: the Social Distance Scale (SDS), Opinions about Mental Illness (OMI), Reported and Intended Behavior Scale (RIBS), the Community Attitudes towards Mental Illness scale (CAMI), Mental Illness Clinicians Attitude scale (MICA) Opening Minds Stigma Scales for Health Care Providers (OMS-HC) (Lien, Lin et al., 2019).

2.7 Conceptual framework

Figure 2 presents the hypothesized framework for expected change in knowledge, skills and behavior following the training of trainee COs. The framework is based on the primary healthcare approach that aims at increasing access to quality mental healthcare at primary level through training of non-specialized healthcare workers (WHO/WONCA, 2008: WHO, 2019). Training is identified as one of the ten key principles for integration of mental health into primary healthcare (WHO/WONCA, 2008). The huge treatment gap, low detection rates, poor quality of treatment and care for mental disorders occur as a result of lack of knowledge, skills, attitudes and behavior of primary healthcare workers. Improving knowledge and skills through mental health training would go a long way to improve mental disorder detection rates and quality treatment and care. In addition, knowledge of mental health will help to improve healthcare workers attitudes towards those suffering from mental disorders and ultimately leading to mental health services being more accessible to those that need them. Therefore, effective

training of non-specialist primary healthcare workers is an effective strategy to close the huge treatment gap in mental health (Caulfield, Vatansever, Lambert, Van Bortel, 2019).

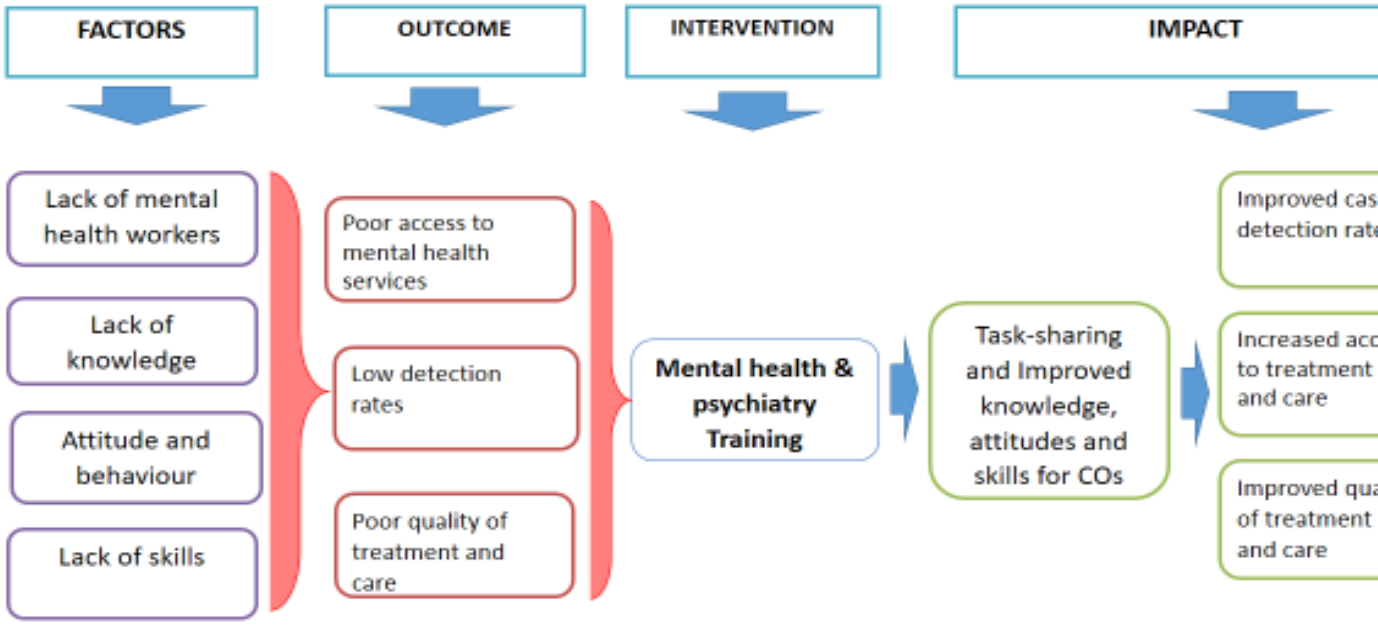

Figure 3: Conceptual frame work to explain the effect of training on the knowledge, skills and attitudes of trainee Clinical Officers (COs)

2.8 Conclusion

As highlighted in this chapter, a high prevalence of mental and substances use disorders have been reported in the international literature and in studies conducted in Malawi. The literature also reports a large treatment gap, low detection rates for mental disorders and poor quality of treatment and care for the few patients who are treated at the PHC level. Healthcare factors that may contribute to this huge treatment gap include attitudes of health workers, lack of knowledge and skills to identify and treat mental disorders. The chapter also presents strategies that can be used to close the treatment gap for mental health care globally and in Malawi through an integration of mental health into PHC services.

CHAPTER 3: METHODS

3.1 Overview of chapter

This section covers the study design used to investigate the knowledge and attitudes of trainee COs at Malawi College of Health Sciences, in the Malawian clinical context and the application of skills by qualified COs in detecting and treating mental disorders in PHC clinics. The section describes the study design, setting, population, study procedure and the measures used. In addition, a description of the data collection, data analysis methods and ethical considerations are described. Lastly, figures given in section are based on information available to me as a member of staff at the Malawi College of Health Sciences (MCHS).

3.2 Study design

This study consists of a qualitative and a quantitative component. A pre- and post-test study design was used in the quantitative component (**Figure 3**). Pre-service mental health training was delivered to trainee COs over a two-week period by local psychiatry lecturers with a BSc degree in psychiatry. Mental health and psychiatry knowledge and attitudes of trainee COs were assessed before and after the training.

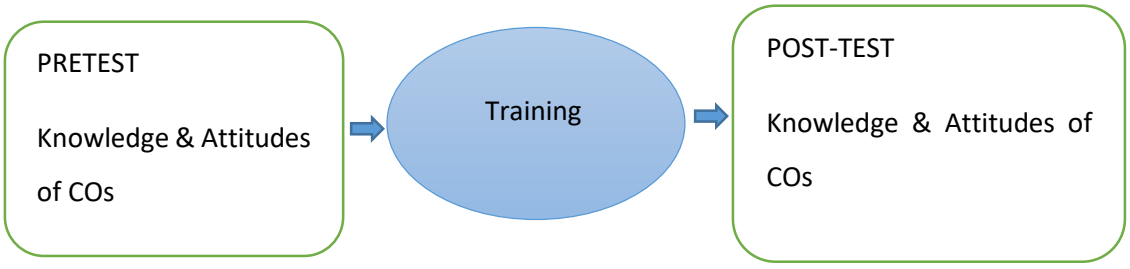

Figure 4: Pre-Test and Post-test design of the effect of training on psychiatry and mental health

For the qualitative component, a semi-structured questionnaire was used to conduct interviews with qualified COs to explore their skills and challenges in identifying and treating mental disorders after receiving the 2 week mental health and psychiatry module during their CO training.

3.3 Setting

The study was conducted at the Malawi College of Health Sciences (MCHS) located in the Southern Region of Malawi and local PHC clinics. The MCHS is a medical college that provides training to mid–level healthcare workers including COs, Medical Assistants and Nurses. The college has a population of 700 students at different levels of training. The average number of students in a class is 50-60. The curriculum for the Diploma in Clinical Medicine includes a psychiatry and mental health module, which is designed to

equip students with the knowledge and skills to enable them to identify, manage and refer patients with mental disorders and promote mental health. This consists of a two-week block teaching of psychiatry and mental health theory module, comprising an introduction to psychiatry and mental health, causes of mental health disorders, and management of mental and substance use disorders. This is followed by four weeks of practical attachment at the Zomba Mental Hospital.

The qualitative data were collected in primary healthcare facilities around Blantyre district and the Southern Region of Malawi. The Southern Region has eight districts namely: Blantyre, Chiradzulu, Chikwawa, Thyolo, Mulanje, Mwanza, Neno and Nsanje. Except for Blantyre which is served by the main referral hospital (Queen Elizabeth Central hospital), all the districts have one district hospital and varying numbers of health centres. Queen Elizabeth Central Hospital provides out-patient specialist mental health services but refers all psychiatric patients requiring admission to Zomba Mental Hospital because it has no in-patient facilities for psychiatric patients.

Figure 5: Map of southern region of Malawi

Source: https://www.researchgate.net/figure/Districts-in-Malawi-s-southern-region-5_fig2_320128745

3.4 Recruitment

Participants in this study included both trainee COs and qualified COs. The ongoing COVID-19 pandemic delayed recruitment of participants as a result of MCHS closure and other COVID 19 control measures. However, recruitment was conducted in October 2021 four months after schools re-opened. COVID-19 preventive measures such as physical distancing, hand washing, use of face masks and cough hygiene

were adhered to during recruitment and data collection in line with guidelines for re-opening of colleges and universities in Malawi (MOE, 2020).

3.4.1 Recruitment of Trainee COs

All trainee second year students COs were approached and sixty-two trainee COs who consented were enrolled in the study. In 2021, the second year Diploma in Clinical Medicine class had 74 students. In this study, second year students were selected for recruitment because the mental health module is delivered in the second year of COs training. Through the class coordinator, second year students were informed of the study. The investigator then met the class a day before the administration of the questionnaire to explain the study objectives, procedure, duration, risks and benefits and they were provided with the study information sheet (**See Appendix 2**). Before data collection, consent was obtained from the students who were willing to take part, and they were asked to sign the consent form (**See Appendix 1**). No sample size was calculated as the study approached all eligible second year diploma students.

3.4.2 Recruitment of qualified COs

The researcher communicated with the District Health and Social Service Officers and facility Officers in-Charge through email, telephone or in person where possible to seek permission to conduct interviews with qualified COs. After verifying their training status, COs working in selected facilities were contacted to ask for their participation in the proposed study and the study information sheet was provided to them (**Appendix 3**). Consent was sought after explaining the purpose of the study and those who agreed were asked to sign a consent form (**Appendix 2**). Out of a total of 9 participants, seven were males and two female.

Using purposive sampling, qualitative data was collected from them. The PHC facilities were located around Blantyre and district hospitals in the Southern Region. The sampling was done to ensure both male and female COs were included. It was decided that a sample of 15 participants should allow for saturation to be reached but data collection was stopped after data saturation was achieved with 9 participants. Since the current mental health and psychiatry curriculum has been in use for around six years the researcher collected data from qualified COs trained within the past 1-6 years and at the same time having enough clinical experience working in PHC facilities. Since the current study involves formal pre-service training for COs, our sample does not include other health professionals working in PHC facilities. In addition, we selected COs as our target group in this study because previous reports have shown low detection rates for mental disorders among COs in primary healthcare in Malawi (Udedi, 2014)

Inclusion criteria

CO participants who were included in this study met the following criteria:

- Trained at MCHS, Blantyre campus
- Had worked for a period of 1-6 years at a PHC facility
- Currently be working in a PHC settings

Exclusion Criteria

CO Participants who were not included in this study were COs who:

- trained at other colleges other than MCHS, Blantyre campus
- had been working for a period of less than 1 year or more than 6 years

3.5 Measures

Two measures (**See Appendix 4**) were employed in the survey to meet the aims and objectives of the study. These tools were used in their original language (English).

3.5.1 Mental Illness: Clinician's Attitudes Scale (MICA) Version 4

The MICA is a measurement tool that was developed at the Health Services and Population Research Department, Institute of Psychiatry, King's College-London (Kassam, Glozier et al., 2010). There are two versions of the MICA. The first version is the MICA-2 which was developed to assess medical students' attitudes about psychiatry and people with mental illness. The second version is the MICA-4 which was specifically developed for use by clinicians and other health workers and it was found to be reliable and

had good internal consistency (Cronbach's alpha = 0.720) in a sample of nursing students in the United Kingdom (Gabbidon, Clement et al., 2012; Spagnolo, Champagne et al., 2018).

The MICA-4 is a self-reporting, 16 question scale and it is scored on a 6-point Likert scale ranging from "strongly agree" (scored as 1) to "strongly disagree" (scored as 6) for items 3, 9, 10, 11, 12, and 16 while reverse scoring was used for items 1, 2, 4, 5, 6, 7,8, 13,14 and 15. The MICA Likert scale was collapsed into two categories "agree" and "disagree" to calculate frequencies for each item. The MICA scores range between 16 and 96 and represent the sum of the individual item scores. A high overall score indicates a more negative (stigmatizing) attitude. This scale can be completed in approximately five minutes, on paper or electronically (Kassam, Glozier et al., 2010). In a sample of 191 nursing students the MICA was shown to be a responsive, reliable, valid and acceptable measure of foundation year nursing students' attitudes towards mental illness in United Kingdom (UK) and it has the potential for use with students and qualified staff across a range of healthcare professions (Gabbidon, Clement et al., 2012). We selected the MICA in this study because it was successfully used in South Africa in a study investigating nurses' attitudes and beliefs in primary health care (Dube and Uys, 2016), and in Tunisia where it was used to investigate mental health attitudes, among primary care physicians (Spagnolo, Champagne et al., 2018)**.** In addition the MICA version 4 is specifically designed to measure attitudes in clinicians (Kassam, Glozier et al., 2010).

3.5.2 WHO mhGAP pre-and-posttest questionnaire for knowledge assessment

The mhGAP questionnaire was chosen for measuring changes in knowledge because it has a wide scope of coverage, testing knowledge of many mental disorders covered in COs' pre-service training. In addition, the use of a WHO standard tool increases the generalizability of study results as opposed to using a researcher developed assessment tool.

The WHO mhGAP pre- and post-test for mhGAP based training is a self-reporting questionnaire (SRQ) containing 20 items (WHO, 2017). In this study, the WHO mhGAP questionnaire was adapted to align it with the course content used in the training by removing four multiple choice questions on child and adolescent psychiatry and the addition of one anxiety case vignette. A score of 1 was assigned to every correct answer while an incorrect answer was assigned a score of 0. The questionnaire had two sections: the first part comprises of questions on knowledge assessed using multiple choice questions and the second part contains three case vignettes which were assessed using multiple choice questions. Each case vignette describes people experiencing symptoms of disorders (epilepsy, psychosis, anxiety). The mhGAP was chosen in this study because it has been used by researchers in Malawi and has shown good results for usability and reliability (Arhens et al., 2020; Kokota et al., 2020)

3.6 Data collection

Data collection was conducted in two phases. In the first phase, quantitative data was collected from trainee COs. In the second phase qualitative data was collected from qualified COs.

3.6.1 Quantitative data collection

Participants completed the quantitative questionnaire comprising of three sections: (i) the demographic questionnaire (age, sex, and participant ID), (ii) the MICA assessing attitudes, and (iii) the mhGAP pre-test and post-test questionnaire assessing knowledge in identifying and treating mental disorders **(see Appendix 1 for consent**). Data collection was conducted at the start of the mental health course before training, and immediately after the theoretical part of the training was completed - before going for practical attachments.

The questionnaires were administered in a classroom under the supervision of two research assistants and in the absence of the researcher. The questionnaire was administered in English since English is the official language of instruction at the college. Consenting trainee COs were assured that the study assessments will not be part of their continuous assessment grades.

3.6.2 Qualitative data collection

Qualitative data were collected using semi-structured interviews with qualified COs working in PHC facilities. The interview guide was developed by the researcher after gaining knowledge on the subject from the literature review. After written consent was obtained an appointment for the actual interview was made. Face-to-face interviews were conducted by the researcher at the participants' place of work. In areas where face-to-face interviews were not feasible or owing to concerns about the COVID-19 pandemic, telephone interviews were conducted. Before starting the interviews, the researcher completed the first part of the interview guide (demographic data) with the participant. The duration for each interview session was approximately 45 minutes. A pilot study of two participants aimed at testing and adjusting the tool, was conducted before the actual data collection exercise. All Interviews were conducted in English and were audio recorded.

The semi-structured in-depth interview guide used in this study allowed the exploration of detailed information on the phenomenon by inviting clarifications to earlier responses and use of probes (Brink, 2006). The data collection tool (interview guide) had two sections: section A, collected demographic data and section B had open-ended questions relating to the study **(See Appendix 6)**.

3.7 Data analysis

Quantitative and qualitative data analyses were conducted in this study.

3.7.1 Quantitative data analysis

Data entry was done directly into SPSS version 26. Descriptive statistics were calculated to describe the characteristics of the sample. Frequency distributions were calculated for continuous and categorical variables. Pre- and post-test item scores for the MICA, and also for the WHO mhGAP questionnaire, were compared using McNemar tests, although the sample size was limited resulting in low frequencies in some cells of the 2x2 contingency tables; these results were interpreted with caution. Pre-and post-test total scores for the MICA and the WHO mhGAP questionnaire were then compared using a paired t-test, to determine if there was a significant change in the knowledge and attitudes of trainee COs. Statistical significance was set at $p<0.05$.

3.7.2 Qualitative data analysis

Qualitative interviews were transcribed verbatim from audio recordings. A software program (NVivo 12) was used to isolate phrases, sentences, and paragraphs that talk about meaningful topics which were later coded. To ensure that data is coded correctly, 2-3 transcripts were coded by two researchers (myself and one supervisor). Thereafter, following a discussion for each consensus, the remainder of the transcripts were coded by the researcher. Demographic data were recorded on Microsoft excel. Thematic data analysis was employed to develop themes, subthemes and categories. Thematic data analysis is defined as a method for identifying and analyzing patterns in qualitative data (Clarke, and Braun, 2013). According to Clarke, and Braun, there are six phases to be followed in thematic analysis, namely: familiarization, generating the initial codes, creating the initial themes, reviewing the initial themes, naming and defining the themes, and lastly writing the final report (Clarke, and Braun, 2013).

3.8 Ethical considerations

In accordance with the code of ethics and regulations, ethical approval was sought and obtained from the University of Cape Town Human Research Ethics Committee (HREC REF – 647/2020; **Appendix 7**) and the Malawi National Health Science Research Committee (NHSRC) (protocol # 21/03/2636; **Appendix 8**). After approval was granted, a written request for approval to conduct the study at Malawi College of Health Sciences and District Health and Social Service Offices was made. Participation in the study was voluntary with no risk or penalty for those who were not willing to participate. Participants were free to withdraw from the study if they so wished to do so.

In order to ensure the safety and well-being of research participants and assistants, the study design included measures for the prevention of the on-going COVID-19 pandemic. Safety of participants and research assistants was ensured by the provision and use of masks, sanitizers, hand washing facilities and ensuring physical distancing was observed at all times. A large lecture theatre was used for data collection from trainee clinical officers. All data collection assistants and participants were advised to strictly adhere to these COVID-19 prevention measures.

3.81 Privacy and confidentiality

The questionnaire and interviews were administered and conducted in rooms where non-participating students and staff were not allowed to enter during the exercise. Questionnaires and transcripts were anonymized and original recordings destroyed after double checking the transcripts. Demographic data and consent forms were not accessible to people other than the researcher and research assistants.

All participants were provided with a unique study identity number and a code was used for all recordings. In addition, the master list of participants and matching code numbers and consent forms were stored in a locked cabinet and soft copies were password protected. Only the study team had access to participant information stored in the database. After everything was completed the list with real names and the audio recordings were destroyed.

3.8.2 Risks and benefits to participants

There were only minor risks attached to this study such as fear of eventual repercussions and loss of time for taking part in the study and interviews. Participants were assured that grades obtained in this study will not be used for their formal continuous and end of course assessment of the module. While there are no direct benefits for participants, the information generated in this study will be used to improve the delivery and quality of mental health and psychiatry training being provided to COs.

3.8.3 Incentives

At the end of the data collection sessions, participating trainee COs were given refreshments as a token of appreciation for participating in the study while qualified COs were given a sum of money amounting to K4, 000 (ZAR 90) which is equivalent to a lunch allowance.

CHAPTER 4: RESULTS

4.1 Overview of chapter

This chapter comprises the study results presented in two sections. In the first section, results of the quantitative component of the study are presented. These results are based on data collected from trainee COs. In the second section, results of the qualitative component of the study are presented. These findings are based on narratives of experiences and views of qualified COs from which themes, sub-themes and categories were derived. Examples of significant experiences and views of participants are quoted and written in italics. The verbatim quotes illustrate some unique elements in the study and support the emerging themes. In addition, some information is presented in the form of charts and tables.

4.2 Results for quantitative data on attitudes and knowledge of trainee COs

Results have been presented using descriptive statistics, t-tests and significance scores.

4.2.1 Demographics

Table 2 summarizes characteristics of the study participants. Out of the 74 students in the class, the majority (83.7%, N=62) were recruited into the study. Of the 62 study participants, 44 (71.0%) were males and the median age was 24 years with a range of 20 to 42 years. Five study participants (8.1%) were repeating the second year of training, and four (6.5%) of these participants had attended the training in mental health and psychiatry in the previous year as well.

Table 2: Demographic characteristics of study participants

Variable	Characteristic	N	%
Gender	Male	44	71
	Female	18	29
Age (median, range)		24	20-42
Repeater	Yes	5	8.1
	No	57	91.9
Previous mental health training	Yes	4	6.5
	No	58	93.5

4.2.2 Attitudes

The MICA version 4 mean score before training was 45.03 (SD: 6.86). Immediately after training there was a small change in the mean MICA score, which decreased to 41.18 (SD: 8.31). A decrease in the overall score on the MICA-4 signifies a less stigmatizing attitude after training (Kassam, Glozier et al., 2010). Table 3 shows full MICA test mean scores and standard deviations before training and after the training.

Table 3: Full MICA 4 test mean scores and Standard Deviation

Phase	Mean	Std. Deviation
Pre-Training	45.03	6.86
Post-Training	41.18	8.31

Using a paired-samples t-test, the MICA mean attitude score after training was compared to the mean attitude score before training. There was a significant difference in attitude scores before and after the training; ($t(61) = 3.77$, $p < 0.001$). **Table 4** below summarizes mean MICA scores for each variable and in the different phases of the study.

Table 4: Attitudes towards mental illness and the field of mental health (N = 62)

MICA 4 ITEMS		Pre-training N (%)*	Post-training N (%)*	p-value
1. I just learn about mental health when I have to, and would not bother reading additional material on it	Agree	14 (22.6)	16 (25.8)	0.82
	Disagree	48 (77.4)	46 (74.2)	
2. People with a severe mental illness can recover enough to have a good quality of life.	Agree	59 (95.2)	55 (88.7)	0.34
	Disagree	3 (4.8)	7 (11.3)	
3. Working in the mental health field is just as respectable as other fields of health and social care.	Agree	57 (91.9)	62 (100.0)	0.06
	Disagree	5 (8.1)	0 (0.0)	
4. If I had a mental illness. I would never admit this to my friends because I would fear being treated differently.	Agree	15 (24.2)	17 (27.4)	0.79
	Disagree	47 (75.8)	45 (72.6)	
5. People with a severe mental illness are dangerous more often than not.	Agree	48 (77.4)	18 (29.0)	<0.001
	Disagree	14 (22.6)	44 (71.0)	
6. Health/social care staff know more about the lives of people treated for a mental illness than do family members and friends.	Agree	45 (72.6)	44 (71.0)	1.00
	Disagree	17 (27.4)	18 (29.0)	
7. If I had a mental illness, I would never admit this to my colleagues for fear of being treated differently.	Agree	21 (33.9)	16 (25.8)	0.33
	Disagree	41 (66.1)	46 (74.2)	
8. Being a health/social care professional in the area of mental health is not like being a real health/social care professional.	Agree	9 (14.5)	10 (16.1)	1.00
	Disagree	53 (85.5)	52 (83.9)	
9. If a senior colleague instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions	Agree	50 (80.6)	51 (82.3)	1.00
	Disagree	12 (19.4)	11 (17.7)	
	Agree	42 (67.7)	44 (71.0)	0.81

MICA 4 ITEMS		Pre-training N (%)*	Post-training N (%)*	p-value
10. I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness.	Disagree	20 (32.3)	18 (29.0)	
11. It is important that any health/social care professional supporting a person with a mental illness also ensures that their physical health is assessed.	Agree	52 (83.9)	45 (72.6)	0.14
	Disagree	10 (16.1)	17 (27.4)	
12. The public does not need to be protected from people with a severe mental illness.	Agree	10 (16.1)	23 (37.1)	0.01
	Disagree	52 (83.9)	39 (62.9)	
13. If a person with a mental illness complained of physical symptoms (such as chest pain) I would attribute it to their mental illness.	Agree	53 (85.5)	8 (12.9)	1.00
	Disagree	9 (14.5)	54 (87.1)	
14. General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist.	Agree	7 (11.3)	8 (12.9)	1.00
	Disagree	55 (88.7)	54 (87.1)	
15. I would use the term 'crazy', 'nutter', 'mad' etc. to describe to colleagues' people with mental illness who I have seen in my work	Agree	6 (9.7)	4 (6.5)	0.73
	Disagree	56 (90.3)	58 (93.5)	
16. If a colleague told me they had a mental illness, I would still want to work with them.	Agree	55 (88.7)	56 (90.3)	1.00
	Disagree	7 (11.3)	6 (9.7)	

4.2.3 Knowledge

Knowledge mean scores before training were 11.16 (SD: 3.01) and the scores increased to 12.69 (SD: 2.66) after training. On the knowledge questionnaire a score '0' was assigned to a wrong answer while the right answer was assigned a score of 1. Therefore, an increase in the mean knowledge score signifies an increase in knowledge after training. Table 5 shows mean scores and standard deviations for knowledge before and after training.

Table 5: Knowledge test mean scores and Standard Deviation

Phase	Mean	Std. Deviation
Pre-Training	11.16	3.01
Post-Training	12.69	2.66

The results of paired-samples t-test comparing the mean knowledge score immediately after training to the mean knowledge score before training showed a statistically significant difference in knowledge mean scores indicating an improvement in knowledge (t (61) = -4.39, p < 0.001). **Table 6** below summarizes mean knowledge scores for each variable pre- and post-training.

Table 6: Knowledge frequencies for each variable N=62

mhGAP Knowledge item	**Pre-training**		**Post-training**		**p - value**
	Correct	N (%)*	Correct	N (%)*	
1: Core effective communication skills	50	80.6	49	79.0	0.79
2: Promoting respect and dignity	38	61.3	37	59.7	1.00
3: Depression symptoms	42	67.7	57	91.9	<0.001
4: A good combination treatment for depression.	50	80.6	57	91.9	0.04
5: Acute manic episode symptoms	21	33.9	48	77.4	<0.001
6: Correct statement concerning psychosis and bipolar disorder	39	62.9	45	72.6	0.30
7: Part of a psychosocial intervention in psychoses	33	53.2	42	67.7	0.12
8: Correct statement concerning epilepsy	49	79.0	51	82.3	0.79
9: Requires emergency medical treatment	25	40.3	25	40.3	1.00
10: A common presentation of dementia	33	53.2	49	79.0	0.002
11: Dementia presentation	34	54.8	48	77.4	0.01
12: The best description of dementia	44	71.0	21	33.9	<0.001
13: Best describes treatment options in dementia	30	48.4	32	51.6	0.81
14: The best description of symptoms of substance dependence	35	56.5	44	71.0	0.11
15: Illnesses that should be screened in people who inject opioids	17	27.4	21	33.9	0.44
16: Prevention of suicide for the carer of someone with an episode of self-harm	51	82.3	56	90.3	0.30
17: Psychosocial intervention where the person seeking help witnessed the death of a loved one to violence	29	46.8	15	24.2	0.01
18. Case study 1 (Depression)	27	43.5	41	66.1	0.01
19. Case study 2 (Epilepsy)	24	38.7	22	35.5	0.80
20. Case study 3 (Anxiety disorder)	16	25.8	21	33.9	0.42

The increase in frequency of detection of mental disorders (from pre= to post-training) for the three vignettes were as follows: depression from 27 (43.5%) to 41 (66.1%); epilepsy from 21 (33.9%) to 22 (35.5%); and anxiety disorder from 15 (24.2%) to 21 (33.9%).

To complement findings in the quantitative component of the study, qualitative interviews for qualified COs working in PHC facilities were also conducted. This was done in order to understand the barriers affecting the application of knowledge and skills gained during pre-service training.

4.3 Results for qualitative interviews with the qualified COs

This section starts with basic participant characteristics and then presents the findings from the individual interviews with qualified COs working in primary healthcare facilities. The participants described several barriers to applying their skills in the Malawian healthcare context. The sections are presented by theme as follows: 1) Clinical context 2) Application of skills, 3) Attitudes 4) Perceptions of training, and 5) Recommendations for pre-service and on-going mental health awareness raising and training. **Table 7** presents the emerging themes and subthemes of the study.

Table 7: The emerging themes and subthemes of the study

ITEM	THEMES	SUBTHEMES

1	Clinical context	• Perceptions of case loads and help seeking
		• Available interventions and services
		• Quality of services
		• Policy implementation challenges
		• Cross-cutting themes:
		  ○ lack of resources and
		  ○ limited knowledge

2	Application of skills	• Initial mental health assessment and diagnosis of mental disorders • Difficulties in assessment and diagnosis • Management of mental disorders
3	Attitudes	• Empathy • Fear/discomfort working with people with mental illness • Use of stigmatizing words e.g. “crazy” • Mental illness not treatable • People with mental illness are dangerous

		• Mental health considered less important compared to physical health
4	Perceptions about training	• Inadequate training • Course design
5	Recommendations for pre-service and on-going mental health awareness raising and training	• Raising awareness • Change in attitudes • Improvements in mental health training

4.3.1 Clinical context

The second objective of the study was to use qualitative interviews to explore the Malawian clinical context and the application of taught skills by qualified COs trained at MCHS (Blantyre campus) during the past six years in identifying and treating people with mental disorders. Based on participant's narratives the Malawian clinical context and application of skills was described under the following sub-thematic areas: i) perceptions of case loads and help seeking; ii) availability of innovations and services iii) quality of services); and iv) policy implementation challenges. The themes of a lack of resources and limited knowledge are reflected in each section as cross cutting themes.

4.3.1.1 Perceptions of case loads and help seeking for mental disorders

The findings show that the average case load is 1-3 cases of people with mental disorders per week. Three participants had the lowest reported case load of 1-2 patients per month. Five reported a case load of 1-3 patients per week. However, a participant working for a CHAM facility raised a concern regarding estimates for case load for mental disorders at his facility. He argued that it would be misleading to give an estimate of mental health cases because many cases of mental disorders remain undiagnosed due to poor clinical skills by attending clinicians. This is shown in this quote:

> "*… statistics for mental disorders have gone up, but due to poor clinical assessment and clinical decisions by clinicians we might end up with low diagnosis of clients"* (Participant 008)

Other participants mentioned different reasons for a low case load. For example, a female participant with five years' experience working in a government semi-urban facility said that mental disorders are not common despite giving an estimate of 2-3 cases per week at her facility. Her explanation for this was a lack of help seeking behavior:

> *"I think its because people do not bring people with mental disorders to hospital most of the times … yes, I think people suffer from mental illnesses but they are not brought to hospital*" (participant 006)

To explain the variations in case load, participants reported that this was dependent on factors such as difficulties in arriving at a diagnosis leading to low detection rates, location of the health facility in addition to poor help seeking behavior of people with mental illness.

> "*The case load depends on the location. We cannot see many cases. Our facility is close to Zomba Mental Hospital and there are some other clinics around us and we kind of share the same population of clients. So in a month its 1-2 patients*" (Participant 001).

Finally, participants described reasons for poor help seeking behaviour for people with mental disorders and their carers, highlighting prevalent community attitudes and beliefs regarding mental disorders and appropriate treatement. A male participant working in a rural CHAM community hospital illustrated this point:

> *"People believe that mental problems occur as a punishment from God or as problem coming when the something goes wrong when one is using traditional medicine (walakwitsa zizimba). Because of this mentality many patients don't come or are not taken to the hospital for mental health problems" participant 002*

Further, participants noted in this study that patients would seek help from service providers they feel would understand their problems better. This is shown in the statement below:

> "*I think maybe they don't trust the kind of help the hospital offers for mental illness - they don't trust our judgment that the patient will recover but the patient will go back the same way. That is the illness still continues. So I don't think they trust the system in the primary health care - they don't trust the fact that we are capable of handling whatever they bring to us (mental illness)"* (Participant 006)

Lastly, cost of mental health services was also identified as affecting help seeking from formal mental healthcare services by two participants working in fee paying facilities such as CHAM hospitals**.** When patients are unable to pay for services they may decide to go to the district hospital or at times resort to use of traditional healers since it is equally expensive to travel to the district hospital. As a result many patients are not receiving the treatment they need for their mental illness. This is expressed by two participants in these quotes:

> *"Another problem on drugs is that our hospital is a fee paying facility. Sometimes when there is very ill patient, instead of coming with the patient here they take the patient to the district hospital*

to avoid medical bills or else they will take the patient to a traditional healer since the district hospital is far from here." (Participant 002)

4.3.1.2 Interventions and services available

To further characterize the clinical context, the study explored whether mental health services were available, what type of services were being provided at a particular health facility and interventions used by COs to treat mental illnesses. Four participants reported lack of mental health services, while another four participants mentioned the availability of both pharmacological and psychosocial treatments. Out of those who reported availability of mental health services, only two participants reported availability of a dedicated room or ward for mental health services. In this study, pharmacological treatment was mentioned by eight participants, seven discussed referral, and two participants described counselling and follow-up of patients. The study also found a lot of variations in the types of services provided at each facility. The lack of mental health services was expressed by one participant as follows:

"Many people are committing suicide not that they just wish to commit suicide but they have no one to approach to meet their needs." (Participant 001)

The study participants elaborated on available resources and processes facilitating pharmacological treatment, psychosocial interventions and referrals to higher levels of care. Each of these aspects is addressed below.

4.3.1.2.1 Pharmacological treatment

One of the main interventions mentioned by participants for mental health conditions is pharmacological treatment. However, in most facilities drug treatment was affected by serious drug shortages making it difficult to provide quality mental health services. Except for one participant, most participants expressed serious concerns about drug shortages as described below in 'Quality of services'.

A participant based at a government facility in Zomba district reported favorable drug supplies. At this facility they had stocks of drugs such as chlorpromazine, Risperidone and diazepam. Being close to ZMH this facility may have possibly benefited from various projects for the integration of mental health into primary healthcare. According to other participants, lack of drugs in many facilities was a major barrier for mental health service delivery. Where services are available the services were limited and of poor quality due to drug shortages. This can be seen in these quotes:

"*According to how I work here it's a challenge most of the times to treat mental disorders we don't have the drugs - even CPZ (chlorpromazine) we don't have, even diazepam*

……..psychiatric drugs are scarce most of the times….. maybe we can have diazepam only, now when you have given the diazepam - for maintenance, what do you give them, we need CPZ to keep them calm, we don't have that… if the patient is agitated ……..usually we just make sure they are calm then we refer them to ZMH." (Participant 003)

At this facility we just give medication, but we don't always have the drugs, some drugs may not be available at times." (Participant 002)

"*As I said most of the drugs are not found in our facilities so we just treat with drugs that is available, so the quality is suboptimal."* (Participant 009)

4.3.1.2.2 Psychosocial Counselling

Few participants reported the availability of counselling services which were only available in some facilities. Counselling was provided by trained counsellors in facilities where NGOs or other partner organizations are working: the counsellors were employed by various organizations such as Malawi aids and counselling resource organization (MACRO), Elizabeth Glaser Paediatric Aids Foundation (EGPAF).

"At our facility we have like partners, such as Baylor College of Medicine *and MACRO and EGPAF; most of the times our partners have psychosocial counselors. Mental health patients are referred to these people. There is a phone number on which consultations are done.*" (Participant 002)

"We have counsellors of course not employed by the ministry but we have partners here like EGPAF, MACRO and Baylor College of Medicine." (Participant 001)

Where counselling services were available, participants reported some challenges with the current arrangement. It was noted that these services are not easily accessible because these counsellors are not government employees and are in most cases based at the district hospital. And consultations are mostly done on the phone. This is what one of participant had to say regarding counselling services:

"We are just using a single person based at DHO [district health office] to help a lot of people actually it is not like the counsellor is based at this facility, but consultations are done over the phone. Sometimes you call him and you can't get hold of him. If we are unable to get through the phone Baylor COM project office may provide transport to DHO if the need is urgent. The patient is taken to the district hospital." (Participant 002)

In facilities where none of these NGOs were working, counselling services were not available. Participants whose facilities do not have these services reported that counselling services were provided by clinicians or nurses for minor cases and for those with serious mental disorders they are referred to the district hospital or mental hospital.

"It all depends on me offering to do the counselling myself for minor cases, but when there is need for further management we refer to district hospital." (Participant 007)

"Yeah some conditions like depression, it depends with severity, most of them when we confirm that its depression we do counselling." (Participant 01)

4.3.1.2.3 Referral to secondary and tertiary facilities

Apart from drug treatment and counselling, participants also mentioned referral to district or psychiatric hospitals as one of the main functions of COs at primary healthcare facilities. Participants emphasized the need for referral because of the lack of pharmacological treatment options in many primary healthcare facilities.

"We treat to control the behavior and extreme signs of mental illness. When they are stable we usually refer them to central hospital for continuation of the care where they are referred further to mental hospital." (Participant 004)

"… if the patient is having a manic episode or mood is elated sometimes we just stabilize the mood and the condition then we refer to the district hospital, where they assess further to determine whether there is need to refer to Zomba Mental Hospital or not or the patient should be managed at district hospital." (Participant 002)

Other reasons for referring patients included the severity of illness, challenges such as lack of knowledge, no availability of specialized services nor space for keeping people with mental disorders. At times referrals are necessary where the patient had a chronic condition such as schizophrenia. This is explained in the following quotes:

"It depends on the severity of the condition, sometimes I do treat if I have medications and put the patient on observation ……that is they should come again for review. But if the patient has a very big chance of being a risk to others, I calm the patient down then refer the patient to DHO to see psychiatric clinicians" (Participant 007)

*"Because at the district hospital they have a specific ward for mental illness. And they have special people who are trained in psychiatry."(*Participant 002)

"We've also had some other conditions like schizophrenia, those cases we refer because they may need admission……but most of the times we don't get feedback from Zomba mental hospital." (Participant 001)

"If the patient is aggressive we sedate and then send them to central hospital" (Participant 006)

"… Depending on the condition of the client. After diagnosis, if the condition is treatable, we treat

at the health centre. But if it needs referral I refer and most of cases are referred to district hospital where there are mental health specialist clinicians." (Participant 005)

It was also noted that since patients with mental illness are sent to hospitals away from the community, many patients having mild symptoms are not taken to hospital for treatment. Therefore, those with mild conditions are observed at home without treatment. This is reflected in the following quote:

> *"… when the communities have problems they have noted psychiatric behavior they bring them to hospital and because we cannot afford to buy the drugs as well we refer them to central hospital, where they refer them to mental hospital, which is a long process and takes time and this only happens when the behavior is extreme. If the condition is moderate they are not taken to hospital they just observe them at home.* (Participant 004)

Lastly, referrals may also be made to psychosocial counsellors. Clinicians may refer patients requiring counselling to counsellors within the facility or to the district hospital or mental hospital.

> *"We just identify those with mental illness, and if the condition needs attention we then refer to counsellors then they can follow the patient up. If we fail to manage then we refer to appropriate people who have the necessary knowledge."* (Participant 003)

> *"Yes, at the district they are available, not health centre level. So if we need services for psychosocial counseling we just call the counsellor. They are not based at the Health Centre. So they do their consultations on line." (*Participant 005)

The study findings show that many patients with mental illness are referred to secondary and tertiary facilities because of lack of resources.

4.3.1.3 Quality of services

When asked about the quality of mental health services being offered in primary healthcare facilities, only one participant described the services provided as of good quality. He thought the quality of service was good enough because some of the patients he had treated responded well to the treatment. This is shown in the following quote:

> *"In terms of quality I can say its good quality service because most of the patients have recovered after treatment."* (Participant 001)

The rest of the participants (N=8) described the quality of mental health services being offered as poor. Some went on to suggest that something needs be done to improve the situation. Drug shortages, lack of human resource and lack of infrastructure like separate rooms for mental health services were mentioned as challenges affecting mental health service delivery. This is how participants described the quality of service:

"The services are not good enough for example the issue of drugs, the necessary drugs are not readily available. Sometimes, just as I said earlier we may have in stock only one type of drug." (Participant 002)

"As I said most of the drugs are not found in our facilities so we just treat with drugs that is available, so the quality is suboptimal. Mental health services are available but not quality services, which we are supposed to be providing." (Participant 009)

To explain why participants thought the quality of services was poor, they mentioned a number of factors including the lack of staff and competing needs between mental and physical health conditions.

"Most of the times services are not good enough because, resources especially drugs are a problem. Second reason is understaffing … understaffing is another problem, to spend enough time with a patient (with psychosis/MH problem) to be assisted well. It may happen that you have a mental health patient and you are the only clinician as I am here, another patient comes in convulsing … your attention will go to the one who is convulsing. So it's a problem to have time to attend to a convulsing patient and mentally ill patient, it's another reason for people with mental illness not to be assisted well." (Participant 006)

Misconceptions about the prevalence of mental disorders was mentioned by one participant working for a CHAM rural hospital as an important factor affecting quality of services. Resources for mental health services are not made available because health service managers lack accurate knowledge about the prevalence of mental health illness and have negative perceptions towards mental health.

Some participants reported that the quality of services is not good enough because of lack of knowledge and skills for assessing and diagnosing mental disorders. In order to remedy the situation COs are forced to refer their patients to tertiary facilities with expertise and resources for proper management. This is exemplified in the statements below:

"I would say that the services are not good enough, so mostly you have to refer because the services are not good enough. People are not really conversant with psychiatric illnesses. So I think from the clinical side we are not equipped properly." (Participant 006)

"In the primary center there is lack of knowledge, lack of treatment we need to expand the treatment like how we have done with malaria for example. The way someone is treated for malaria at QECH will be the same someone will be treated with malaria at health center/community hospital" (Participant 004)

Other factors affect quality of services include lack of human resources and lack of infrastructure like separate rooms for mental health services were mentioned as challenges affecting mental health service

delivery. The shortage of staff leads to high workload for the few health workers available. Most facilities are poorly staffed forcing the available staff members to take up multiple roles and responsibilities such as administrative, clinical and counselling. This also leads to poor service delivery since time to fulfill all these roles may be limited. High workload was mentioned by some participants as one of the factors negatively affecting the provision of quality mental health services. This is shown in the following quote:

> *"In terms of time - we don't have enough time to spend with people with Mental illness because of the workload and shortage of staff.*" (Participant 005)

Furthermore, as a result of staff shortages, mental health services are reportedly mostly provided by nurses rather than clinicians, but mental health services delivered by nursing staff were limited by the their scope of practice.

> *"……most of them [mental health service providers] are nurses, who are not prescribers. So it is difficult, I have seen that nurses are more serious about mental health compared to COs in training even in practice. Nurses are able to attend to psychiatric patients unlike COs who will just refer the patient. Even the degree program at Saint John of God most of the graduates are nurses unlike COs, so that one is a problem. We have some people at primary level who have done psychiatry but for those to prescribe it's difficult they always wait for the CO to prescribe. I don't know how it works."* (Participant 004)

Lastly, lack of separate rooms for mental health services was highlighted by two participants:

> "I think that we need to have room where *to assess these patients, but in most cases they are mixed with other patients, so I think this is a challenge*" (Participant 006)

4.3.1.4 Policy implementation challenges

Lastly in terms of the clinical context, responding to the question on why there are many challenges associated with mental health service delivery in Malawi, one participant argued that this is the case because mental health services are still centrally located. Government funding for mental health is directed to psychiatric hospitals as opposed to primary care facilities. This is evidenced by the following quote:

> "*It's quite a challenge and very difficult for us to achieve the common goals for us to treat patients with psychiatric problems. Why am I saying this? The problem is treatment is still centrally located it is those known psychiatric hospitals that provide services. That's where the good treatment for psychiatric treatment is. If you go to other hospitals apart from Zomba Mental hospital, Lilongwe or Mzuzu. In the primary Centre there is lack of knowledge, lack of treatment we need to expand the treatment like how we have done with malaria for example."* (Participant 004)

4.3.2 Application of skills

In this section I will present the reported application of mental health skills acquired by qualified COs during their pre-service training. These will be discussed under the following subthemes: i) initial assessment and diagnosis, ii) assessment and diagnostic difficulties, and (iii) management of mental disorders

4.3. 2.1 Initial assessment and diagnosis for patients with mental illness

Participants admitted experiencing difficulties with doing a proper assessment and arriving at a proper diagnosis. In most cases they did not report a systematic approach to the initial assessment of the patient to arrive at the diagnosis. This is shown in the following quotes:

> *"For me to give the diagnosis it depends on the Mental state examination (MSE), what symptoms do I find on MSE – does the patient have hallucinations, delusions or whether the patient is well oriented or not; then based on the history itself we give diagnosis in which the patient has delusions, hallucinations and other thing. Then if in the history there is evidence of use of some kind of substance, at the same time considering the duration of symptoms, that one I can give that one diagnosis of psychosis secondary to drug abuse. Sometimes, in the history there is no issue of drug use. If the duration of is less than 4 weeks, I will give him a diagnosis of schizophreniform disorder; if the history is long standing, … and if he gets treated and illness is recurring then it can be schizophrenia, that is chronic schizophreni*a." (Participant 007)
>
> "*You ask about history of smoking cannabis (chamba) or/and other drug, if there are any depressing things (psychological) … I mean any social issues that could have affected the patient. Thereafter, we test for malaria and other conditions. Mostly from the history what guardians are presenting with e.g. someone was just confused and everything and the condition has been there for some time (duration) you find out … Is it organic … you may find that if it were something else the patient would be confused and depressed or they are not making sense: any hallucinations, or delusions. Then it's just clinical most of the times- it's just clinical problem." (*Participant 006)
>
> "*Normally, as I said the most common conditions are those with depression. I take the history, because they present as if they have a medical condition. So I get the history either from the friend or her/himself when the environment is ok. Then I come up with a diagnosis.*" (Participant 009)

Several participants highlighted pertinent aspects of decision making around diagnoses, particularly around excluding physical health conditions:

> *"The diagnosis mainly depends on the history, thorough history taking as I said. This patient may come with a medical problem they may be having hypertension or having something like a medical condition, if we enquire more it is when they reveal then we do counselling."* (Participant 009)

"The first thing that we do. We basically use the history that the patient presented. We try to perform physical examination to rule out other physical conditions for example someone is complaining of headache, loss of appetite and isolation you look at the story that has happened and has been happening, when you link up this and you know the patient is not having some vitals that signify that this is an infection for example - doesn't have fever, doesn't have any physical signs related to illness or symptoms. We would say that the person is having mental illness not physical illness." (Participant 001)

Some participants admitted misdiagnosing mental disorders as malaria. This may occur as a result of poor clinical assessment and clinical judgment or lack of knowledge and expertise. This is shown in the quote below:

"*And when they go to health facilities, they are misdiagnosed as malaria and yet they are having something else. These people when they come to hospital they need to see someone whom they will trust to help them. And someone who is also there who can easily identify their problems fast. So it needs someone who is well specialized, otherwise they are treated for other conditions because of lack of knowledge (specialization) in most facilities."* (Participant 001)

4.3.2.2 Factors contributing to difficulties with assessment and diagnosis

To explain difficulties experienced in the assessment and diagnosis, participants cited factors such as lack of knowledge, lack of in-service training or continuing professional development (CPD) sessions on mental health, and the general attitude of the health management team to sideline mental health. Some participants further observed that most facilities are not designed to accommodate mental health. For instance, one participant mentioned limited knowledge, lack of mental health CPD sessions and in-service training:

"*As I have already said most clinicians or nurses have only basic knowledge of mental health from college. Apart from that as you are aware that there are several departments in health where regularly they revise the guidelines for management and they train the staff at regular intervals of 2-4 years but mental health conditions and their management. I have not heard of any further trainings for clinicians or nurses or workshops, once you you are trained in college, that's the only knowledge you will apply directly to the patients practically on the ground. we don't have workshops or even at CPD sessions where you can be reminded of mental health disorders diagnosis as well as management, that is never done. It is mostly sidelined 100%.*" (Participant 008)

Some participants mentioned that as general clinicians it is difficult to do a comprehensive assessment of a patient with mental illness. Some said they had difficulties because they were not specialized in mental health and what they learnt in class was only basic. This is shown in these quotes:

"Since I am not a specialist in psychiatry as I have said earlier the most important thing I do is to look for the cause especially for the newly diagnosed patient or those presenting with the signs and symptoms for the first time, I would look for the cause as I have said most of the times the cause is drug induced." (Participant 004)

"*To say how exactly we diagnose mental illness, I cannot say because I am not a specialist in this, so it is difficult to say, may be to use the terms that are used in psychiatry*." (Participant 004)

"When I have a patient with mental disorders … normally …we did some basics during college about psychiatry, so from that basic knowledge, sometimes we tend to miss other management and assessment." (Participant 008)

However, some participants admitted experiencing difficulties in coming up with a specific diagnosis while others said it is only possible in patients who have obvious features of psychosis such as hallucinations and delusions.

"Most of the time I am not very conversant with these conditions… I am not really sure of the diagnosis most of the times, I don't think my knowledge is enough that I would accurately isolate the actual diagnosis for a particular patient. I will just say that I am not very comfortable because I am not very sure of the diagnosis." (Participant 006)

Lastly, one participant mentioned that it was particularly difficult to identify depression because depression is a rare condition and she lacks exposure. This participant was the least experienced among the participants with under two years' experience working at government district hospital:

"*First people should be trained thoroughly, mental health illness is present in the community. We need to identify the easy ones, the basic ones like those that happen in maternity, those due to alcohol use, and those with depression. Those undergoing depression are not easy as people will say they worry a lot … even when they come to me it will take time for me to identify that this is actually depression … may be because after school it is very rare for me to see a patient with depression."* (Participant 003)

4.3.2.3 Management of mental disorders

When asked on whether they are able to manage people with mental illness, most participants reported that what they do is just first aid or counselling. Psychotropic drugs are only given to sedate the patients before they can be referred to the district hospital or psychiatric hospital. For example, this is what one participant working for rural hospital said:

"*here, our facility it's kind of community hospital, if the patient is having a manic episode or mood is elated sometimes we just stabilize the mood and the condition then we refer to the district*

hospital, where they assess further to determine whether there is need to refer to Zomba mental hospital or not or the patient should be managed at the district hospital, because at the district hospital they have a specific ward for mental illness." (Participant 003)

"We treat to control the behavior and extreme signs of mental illness. When they are stable we usually refer them to District hospital for continuation of the care where they are referred further to mental hospital." (Participant 004)

However, other participants reported that they were able to commence treatment for some mild mental health cases while those presenting with serious mental disorders were referred to the district hospital or mental hospital.

"*It depends on the severity of the condition, sometimes I do treat if I have medications and put the patient on observation that is they should come again for review. But if the patient has a very big chance of being a risk to others, I calm the patient down then refer the patient to DHO to see specialized psychiatric clinicians.*" (Participant 007)

"….depending on the condition of the client. After diagnosis, if the condition is treatable, we treat at the health facility. But if it needs referral I refer and most of cases are referred to District hospital where there are specialist clinicians." (Participant 005)

"…….After diagnosis, if the condition is treatable, we treat at the H/C. but if it needs referral I refer and most of cases are referred to district hospital where there are mental health clinicians." (Participant 004)

Where patients were treated as out-patients, a review date was given for patient follow-up. This is shown in the following quotes:

"*But for conditions like depression, some we resolve them because we have the follow-up systems. If they are within our catchment area, our community, some patients ….. Whenever we see them we give them a review date.*" (Participant 001)

"It depends on the severity of the condition, sometimes I do treat if I have medications and put the patient on observation that is they should come again for review." (Participant 007)

4.3.3 Attitudes

While exploring the attitudes of COs towards mental health and people with mental disorders, the study found both positive and negative attitudes.

Responding to the question on how they felt about helping people with mental illness, some participants expressed positive feelings towards people with mental disorders. This is shown in the following quotes:

"I just look at it as normal, as a health practitioner, we don't have to select the type of patient that have to come to hospital, we believe that if they are coming to our clinic, it means that they are

*sure they are going to get help. We are ready to give what we can, and that depends on the level of training that we have been given- to cut it short I feel good. "(*Participant 001)

"……..but we help them the same way we help others. And we approach them like any other client" (Participant 001)

"I feel good but due to lack of resources it is complicated to work with people with mental disorders." (Participant 005)

"Yeah, it is nice to work with people with mental illness as most of the time they feel like they are ok, but as a clinician you will find something abnormal. You just need time with them so that they may know what is happening in with their bodies. As a medical person, we are supposed to work with any person with health problems, so I welcome and I have never have negative attitude towards them." (Participant 008)

Although, another participant mentioned that he feels sorry for people with mental illness.

"I feel sorry for them, sometimes I put myself in their shoes as a person, and I feel for them." (Participant 002)

One participant mentioned that he is happy working with people with mental disorders because when they respond to the treatment given, it results in a feeling of job satisfaction. He presented his feelings as indicated below:

"I feel ok. Because these people come to us looking for assistance, and when I see that they have improved on the assistance provided (treatment) I feel quite ok." (Participant 007)

One participant disclosed that she is only comfortable working with those with less severe conditions such as mild stress because communication is not difficult, unlike where the condition is more severe such as psychosis:

"But those with stress only …….if you try to talk to them you are able to communicate……that one am happy to work with." (Participant 003)

In this study participants also showed positive attitudes to mental health training. This is exemplified in the following quote:

"……. *because these days psychiatric problems are increasing and to take mental health as a minor in training is a mistake according to me. And I think it has to be considered as one of the major subjects because I have observed that most of us COs, we are very good at medicine, paediatrics, surgery and obstetrics and gynaecology – why? Because these are taken as major subjects and they are given a lot of time both in class and at the clinical area."* (Participant 004)

Lastly, another participant expressed his feelings by explaining his experience as CO at several health facilities at district and health center levels. He argued that although mental health is sidelined, it is a major cause of morbidity in the country. This is shown in this quote:

> *"During my experience working at local community level, I noted that mental health is somehow sidelined, it's not supported as other programs. And yet it is a major problem affecting people in the country. So it would be good if there were efforts to support mental health in terms of materials or on job training and other things to make it very effective."* (Participant 005)

In contrast, there were other participants who showed negative attitudes towards people with mental illness. One participant said that he is sometimes afraid of such people and therefore approaches people with mental illness with caution.

> *"We check them like any normal person, but at times I always approach with care because when they are agitated, we are at times afraid."* (Participant 001)

Another participant expressed discomfort especially when dealing with a patient with psychosis.

> *"But for those patients who are really psychotic I have problems to handle those…….those ones are in the negative – I don't feel ok to work with."* (Participant 003)

And, this participant (003) used the word "going crazy" when referring to mental illness and she could only help those that are not violent.

> *"…….if you are having something not so serious like hallucinations or they are going crazy or being violent or beating people. I can handle those ones."* (Participant 003)

Similarly, another participant thought most people with mental illness are aggressive and as a result he is not happy to work with those with mental illness.

> *"Am not very happy working with people with mental illness. It doesn't make me feel very happy because most of them are aggressive. So I am not very comfortable dealing with someone who has psychiatric illness."* (Participant 006)

Another participant expressed his doubts about the effectiveness of mental health treatments and interventions. In addition, he refers to people with mental health problems as harmful to others and he thinks treatment should be given to prevent them harming others:

> *"It's quite challenging especially those with chronic problems unlike the acute ones, those who have just developed the illness, like those with depression sometimes they tend to recover but the chronic ones we know they don't recover, but we work only to suppress the behavior so that they are not harmful – it's quite challenging. The behavior is too much and these people cause a lot of problems to the community.*" (Participant 004)

Furthermore, the same participant mentioned that he lacks interest in mental health and described the provision of mental health services in primary healthcare as doing something in passing compared to services provided by psychiatric COs. This evidenced by the following statement:

> *"……..But because we don't see these patients as specialists. Being a specialist and doing something in passing is different. We did this and it was enough for us to know but maybe we need to have interest. I don't have interest in psychiatry, I don't know……"* (Participant *004*)

Some participants expressed their disappointment with negative attitudes and perceptions shown by health service managers and policy makers toward mental health issues compared to physical health conditions.

> *"The attention is not there. Even government pays more attention to physical illness than mental health. So even at Central Medical Stores you find that these other drugs e.g. for malaria are available so that treatment for malaria should be free. Even Amoxicillin is cheaper while mental health drugs are more expensive. Government puts more money there so that treatment is cheaper."* (Participant 004)

To sum it all, one participant argued that unlike physical health, mental health is particularly sidelined because it is not included in plans for in-service training or CPD sessions to update practitioners on new developments on mental health problems.

> *"I have not heard of any further trainings for clinicians or nurses or workshops, once you are trained in college, that's the only knowledge you will apply directly to the patients practically on the ground. We don't have workshops or even CPD sessions where you can be reminded of mental health disorders, diagnosis as well as management, that is never done. It is mostly sidelined 100%."* (participant 008)

4.3.4 Perceptions of training

When specifically asked whether the training received in college prepared them well to treat and diagnose mental illness, participants expressed positive and negative views about their pre-service training. Some participants described the training as inadequate while some thought the training was adequate. In this section, I will describe the positive and negative views mentioned by participants regarding training.

Three participants expressed satisfaction with the mental health training provided at the college. One participant was particularly happy with the practical experience at ZMH during practical attachments. This is how some participants described mental health training as adequate:

"*Yes, of course, if I haven't had training in mental health course at school I wouldn't have been able to handle such cases and I would not have been able to help these people……* **" (**Participant 001)

"But we learn as general practitioners and the knowledge that we get from school is the one we are using now. So in short it has been so beneficial, if at all we didn't learn these things then definitely we wouldn't have been able to handle these cases. Theory…….. all I can say is that it was good it covered what is common on the ground." **(**Participant 001)

"Yes, that training helped us a lot, when a patient comes to me as a clinician, I am very comfortable because I know how am going to welcome him/her, what will I do to him/her and from my experience at ZMH during clinical attachments, up to now and how our teachers taught us I am always comfortable that I will assist the patient based on the knowledge acquired in school. And I help the patient. **(**Participant 007*)*

"Yes the training helped us… as I said, the knowledge I got from the college is the one we tend to apply when dealing with the patient..." **(**Participant 009)

Some participants thought the training they received at the college was inadequate and did not prepare them well for the work they are doing on mental health issues. Various reasons were given to explain their arguments. Participants mentioned factors such as inadequate time allocated for mental health and psychiatry for both theory and practical placement, while others thought the content was not comprehensive enough. This is shown in statements such as the following:

"I think we learnt mental health but not extensively enough, it was just basics to guide us so that if you have such a patient you should know what to do next, but not that you can go deep for conditions like schizophrenia, schizoaffective and other specific diagnosis no, I don't think so. The training just covered the basics, it was not enough." **(**Participant 003)

"Yes, the training was not adequate because of the content itself was not much detailed so what we got at the college and what we see at the clinic sometimes the knowledge acquired at the college is insufficient to understand some cases." **(**Participant 005*)*

Another participant specifically mentioned that time allocated for theory is not enough to cover the content as a result some important areas of mental health content are not covered. This creates a knowledge gap that affects quality of mental health service.

"Mental health is broad topic but the time we spend in our training in as far as theory is concerned …..the time is not enough we just need to improve on the duration or hours because we rush to cover the material skipping some important areas (content) - maybe we need more time allocated to MH during training." **(**Participant 002)

Another participant expressed concern over how the course is designed, where mental health is only

introduced and done in second year of training, as shown by this quote:

> *"Again as I have said it was only 1 month allocation at the mental hospital and the subject was only learnt in 2nd year 1-2 weeks and yet for medicine and other subjects we did from 2nd to 3rd year. You can see now this subject is given very little attention."* **(**Participant 004)

Lastly, two participants specifically describe the time spent at the clinical area as inadequate. This is shown in the following statements:

> *"I would think that the training was not adequate, like mental health issues are something that is very big that people need to concentrate on but then you get a few weeks in which to do history taking and everything so it's not just enough. So people are not comfortable dealing with people with mental illness because the knowledge and the time they spend in psychiatric ward is not adequate so that one can be confident to deal with psychiatric patients in clinical practice."* (Participant 006)

4.3.5 Recommendations for pre-service and ongoing mental health awareness raising an training

In order to improve mental health services in primary health care participants recommended improvements in the following areas: raising awareness, improving training and introduction of in-service training, provision of a room for mental health services and improvements on staffing through the deployment of more staff members.

4.3.5.1 Raising awareness

Participant mentioned the need for a change of attitude towards mental health and mental illness. They suggested awareness campaigns for health service managers, healthcare workers and the general public on the importance of mental health. This is expected to address misconceptions and stigma towards mental health and mental illness.

One participant expressed a need for health facilities to have psychiatric COs in order to improve service delivery. But he argues that this can only happen if management is aware of the importance of mental health. This is how he expressed it:

> *"In most facilities in Malawi the grey area is psychiatry condition that is there. So it's all about mind set, I think as the hospital management and administration should consider having psychiatric specialist (COs). Managers should be informed how important mental health problems are".* (Participant 009)

4.3.5.2 Change in attitudes

Some participants suggested a change in mind set towards mental health issues. This is shown in these two quotes:

> *"I think the first thing should be that change of the mind set about this disease (mental illness). The mindset towards this disease should change, we should think of mental health as important or a major problem in our society; so if we take mental health as a major problem resources will be available."* (Participant 009)

> *"…it is assumed that mental health patients are not always as many as it is with physical problems like malaria or cough, ……Mental patients present once in a while so we cannot buy different types of psychotropic medication in case some get expired"* (Participant 002)

4.3.5.3 Improvements in mental health training

Lastly, recommendations were made on both pre-service training for general COs, in-service training and training and deployment of psychiatric COs. While training is expected to increase staffing levels it is also expected to improve knowledge which may in turn help improve skills in assessment, identifying and management of mental disorders.

> *"And again if there can be a chance that some clinicians or nurses can have a chance of special training just to up-grade themselves on mental health because what I have noted is, we learnt mental health in school but because we rarely meet the cases, we tend to forget these conditions and we concentrate on the other part (physical illness"* (Participant 001)

Most of the participants emphasized the need for in-service training in order to keep them up to-date with new skills and knowledge on mental health. This is shown by these quotes:

> *"There is real need for a course or workshop so that we can attend so that mental health issues should remain as an agenda in our minds. The knowkledge we are using is the one we got at the college. We are using the same pre service knowledge …..no updates or new knowledge"* (participant 002)

Other participants suggested improving pre-service mental health and psychiatry training and emphasized giving more attention to mental health. First, participants suggested an increase in the time allocated to mental health in pre-service training. This is seen in the following quotes:

> *"Mental health is broad topic but the time we spend in our training in as far as theory is concerned …..the time is not enough we just need to improve on the duration or hours because we rush to cover the material skipping some important areas (content) - maybe we need more time allocated to mental health during training"*. (Participant 002)

"*Increase the syllabus content, the conditions that are learnt including conditions like anxiety depression and how to deal with those and the time allocated to mental health should improve. So that people are more conversant with mental health conditions*" (Participant 006)

And the same participant also mentioned improvement in supervision of students during clinical placement. He suggested an increase in visits and use of case presentations in order to improve the clinical skills of students.

"*Supervision of students at the clinical area is another area that needs to be improved. Frequent supervision with presentations can also help improve clinical learning, because presentations are helpful in sharpening clinical skills, some of us are confident up to now, it's all because of those presentations* (Participant 002)

Likewise, participants recommended the increase in the time allocated for clinical practice. Lastly, apart from increasing time in the clinical area, time allocated for teaching theory should also be increased. This is needed since some participants think the content for mental health is not comprehensive enough. This is seen in this quote:

"The time of stay at school, psychiatry should be given enough time, so what I think then only thing. I suggest, if we are trained as general practitioners we are given little knowledge about psychiatric conditions. The hospitals should have specialists in those areas. But for the specialist to get the patient they still have to be identified by general clinicians….. What I am saying is that when I identify a patient with mental illness I should be able to refer to someone to consult with" (Participant 009)

Lastly, apart from increasing numbers of health workers and improving training programs, participants mentioned the need for other cadres with prerequisite expertise such as psychosocial counsellors and psychiatric COs.

These people when they come to hospital they need to see someone whom they will trust to help them. And someone who is also there who can easily identify their problems fast. So it needs someone who is well specialised, otherwise they are treated for other conditions because of lack of knowledge (specialisation) in most facilities" (Participant 001)

"'There is also need for psychosocial counselling services- when there is need for counselling we just use our knowledge which we got from college." (Participant 006)

Similarly, specialized training for psychiatric COs and their deployment into primary healthcare facilities was also suggested in order to improve services.

"But it's time now that COs should also go into training in mental health" (participant 004)

"First, I would like authorities to improve human resources. Whereby they can also employ someone who specialized in mental health" (Participant 002)

CHAPTER 5: DISCUSSION

5.1 Introduction

This study assessed the impact of training on knowledge and attitudes of trainee Clinical Officers (COs) at Malawi College of Health Sciences (MCHS) and explored qualified COs' experience of the Malawian clinical context and their application of skills in detecting and treating mental disorders of qualified COs working in primary healthcare facilities. In this chapter, I start with a discussion of the study's main findings on attitude, knowledge and case vignettes. These results will be compared with qualitative findings and findings in the international and regional literature. Thereafter, I discuss the study's limitations, and conclude the chapter with implications for practice, training and policy development, as well as offering recommendations for future studies.

5.2 Summary of main findings

5.2.1 Attitudes

This study used the MICA-4 to measure changes in mental health attitude for trainee COs after receiving a 2-week psychiatry and mental health training. Results showed a significant change in attitude towards mental health and people with mental illness after training. The quantitative results in this study are not consistent with findings from a study conducted in Mulanje district, Malawi. Using the CAMI (a different measure of attitudes to the MICA), researchers reported no improvement in attitudes of PHC workers after training (Kokota et al, 2020). The difference may be explained by the fact that we used a different group of health workers and the course content was not the same. On the MICA items, trainee COs retained stigmatizing attitudes in the following areas: 1) The COs were less certain that people with a severe mental illness can recover enough to have a good quality of life, and 2) Fewer COs believed that is important that any health/social care professional supporting a person with a mental illness also ensures that their physical health is assessed. Examples of such attitudes were also reported by qualified COs as being areas of challenges. Therefore, it is not surprising that the trainee COs retained some skepticism on these changes. Big improvements were seen in: 1) COs mostly agreeing that people with a severe mental illness are NOT dangerous more often than not, and 2) COs mostly agreeing that the public does not need to be protected from people with a severe mental illness.

The qualitative interviews revealed negative attitudes exist among qualified COs. The negative attitudes were expressed in various forms which included the use of stigmatizing words such as "going crazy", seeing people with mental disorders as being aggressive and potentially harmful to others and

uncomfortable to be with, being fearful to work with people with mental disorders, and approaching them with caution. Participants suggested that treatment should be given to ensure they are not harmful to others. It was also revealed that mental health and psychiatry is not taken seriously compared to other clinical courses during training. These findings are consistent with the reviewed literature where negative attitudes towards people with mental disorders have been noted in health care professionals at all levels (Al-Atram, 2018; Ma, Huang et al., 2018). These findings reflect the gaps in the content of the COs psychiatry and mental health teaching and curriculum. Improving the training of non-specialist health workers in mental healthcare can be an effective strategy to increase the provision of quality services by increasing knowledge, skill and confidence, and improving attitudes among health workers, as well as improving clinical practice and patient outcomes (Caulfield, Vatansever, Lambert, Van Bortel, 2019).

5.2.2 Knowledge

The study used the mhGAP pre-and post-training questionnaire to measure changes in mental health knowledge for trainee COs after receiving a 2-weeks psychiatry and mental health training. The results showed a statistically significant change in knowledge from before (11.16) to after (12.69) training. These findings are confirmed by other studies, albeit mostly of community-based training, in Africa and in developed countries (Mulango, Atashili et al., 2018; Dube, Uys, 2016; Acharya, Hirachan, Mandel, van Dyke, 2016; Gwaikolo, Kohrt, Cooper, 2017). Researchers in Malawi also reported increase in mental health knowledge and confidence following WHO mhGAP based training for PHC workers (Kokota et al, 2020). In this study trainee COs performed well on items regarding major depression, but their performance was poor on items to do with epilepsy, anxiety, dementia and substance abuse disorders. This poor performance was also seen on psychosocial interventions for a patient with anxiety disorders where scores remained low even after training. Since time for mental health and psychiatry teaching is limited, some topics are not fully covered or not done at all. From the interviews with qualified COs, the main barriers to the provision of mental health services were lack of knowledge and skills. Most participants attributed these knowledge gaps to factors such as inadequate time allocated for mental health and psychiatry training, and content that was not comprehensive enough. As a result of the lack of knowledge and skills, COs had difficulties in assessment and diagnosis, leading to misdiagnosis of mental disorders, for example as malaria, and low detection rates of mental disorders. Overall, there seems to be some evidence to indicate that the mental health curriculum does not address population and curriculum needs for the training to be effective.

5.2.3 Case identification for mental disorders

The study showed significantly higher identification rates on three vignettes (depression, epilepsy and anxiety disorder) after the training in psychiatry and mental health. Identification rates were higher for depression (43.5%/66.1%) pre- and post-training compared to epilepsy (38.7%/35.5%) and anxiety (25.8%/33.9%) disorders both of which remained low after training. In congruence, participants in the qualitative interviews reported low identification of anxiety disorders and epilepsy cases. This is concerning because prevalence of anxiety (301 million people in 2019) and epilepsy (about 50 million people) are quite high globally and the majority of cases occur in LICs (WHO, 2019: Scott, Lhatoo, Sanders, 2001). Previous studies conducted in HICs and LICs have also reported low detection rates for common mental disorders (Kazdin, 2019; Germany, Marcus et al., 2011; Kauye, Jenkings, Rahman, 2013).

5.2.4 Findings on clinical context and practice

5.2.4.1 Case load and clinical context

The findings show that the COs' average case load for mental health conditions is 1-3 cases per week with some variation at different facilities. The variations in case load were attributed to factors such as difficulties in assessing and reaching a diagnosis leading to low detection, location of the health facility, and poor help seeking behavior of people with mental illness in some communities. COs' perceptions that problems in detection of common mental disorders is a cause of there being few identified cases in primary care is borne out by previous research in primary care facilities in Malawi (Udedi, 2014). Large detection and treatment gaps for depression and alcohol use disorders were also found in five cross sectional studies conducted in primary healthcare facilities in Sodo District, Ethiopia, Sehore District, India, Chitwan District, Nepal, Dr Kenneth Kaunda District, South Africa and Kamuli District, Uganda (Rathod, Roberts, Medhin, et al., 2018).

Misconceptions about causes of mental illness where mental illness is associated with a punishment from God, or being possessed by evil spirits and witchraft were given as the main reasons for poor help seeking behaviour for people with mental disorders. This is also consistent with findings in local and intenational studies (Sarikhani, Bastani, Rafee, Kavosi, Ravangard, 2021; Chilale, Silungwe, Gondwe, Masulani-Mwale. 2017). Such help-seeking behavior in some communities may also be determined by their perception of the medical services. Participants in this study reported that patients would seek help from service providers they feel would understand their problems better.

Participants in this study highlighted concerns regarding the availability and quality of services provided. Where services were available there was a limited range and poor quality of services as reported by eight out of the nine of the participants. Lack of drugs, specialist psychiatric COs and clinic space were identified as key barriers for the delivery of quality mental health services in these facilities. Participants reported varying treatment options based on resources available, knowledge and expertise and location of the health facility. The main treatment options in these facilities included pharmacological treatment, counselling, referral, and follow-up of patients treated as out-patients. In facilities where services were available, the services were limited and of poor quality with chronic drug shortages. In many instances psychotropic drugs were only given to sedate the patients before they can be referred to the district hospital or mental hospital. Even patients with chronic conditions who are already on psychotropic drugs fail to refill their medication within the PHC setting. This is consistent with previous reports in Malawi (Kauye, 2008). In South Africa, Booysen, Mahe-Poyo, Grant, (2021) reported challenges experienced by people with mental disorder due to drug stock outs. This forces patients to take long trips to other facilities for treatment.

Psychosocial counselling services were not easily accessible because these counsellors were in most cases based at the district hospital necessitating referrals for patients with severe symptoms to access services. For those patients presenting with mild symptoms counselling services were offered by nurses or the clinician. These findings bring into question the quality of counselling services offered since most participants described their training as basic in nature and this may be the same regarding nursing training. While having professional counsellors would be ideal, it is also important that generalist COs possess basic counseling skills. In this regard evidence based WHO mhGAP brief psychosocial interventions are recommended for non-specialist PHC workers. Previous research findings have shown that using mhGAP training and supportive supervision can effectively improve knowledge and skills of primary healthcare workers in the management of mental disorders (Spagnolo et al., 2019); Kokota et al, 2020; Arhens, Kokota, et al., 2020).

The lack of integration of mental healthcare into primary healthcare services is a common occurrence in LMICs. This is in sharp contrast to the WHO policy recommendations and National Mental Health Policy for the integration of mental health into primary healthcare (MOH, 2020; WHO, 2008). According to WHO recommendations, integration of mental health services should include comprehensive community–based health and social services, mental health services at general hospital and primary care and effective linkages between different levels of service as per the WHOs optimal mix of care pyramid (WHO, 2008;

2013). Similar findings were reported in Pakistan where reports showed slow progress in the integration of mental health into PHC as a result of lack financial support, human resource shortages and lack of community acceptance (Hussain, Khan, Gul, Asad, 2018). These factors lead to problems such as poor quality of service, lack of supervision and support for primary care workers, and inadequate training (Sarikhani, Bastani, Rafiee, Kavosi, Ravangard, 2021).

5.2.4.2 Application of skills

Firstly, this study found that most qualified COs were not able to come up with the correct diagnosis of mental disorders because they could not perform a comprehensive psychiatric assessment on people with mental disorders. This is evidenced by a low case-load of mental disorders reported by participants in most of the facilities. Some mental disorders are completely missed or at times misdiagnosed as malaria. Previous studies have reported similar findings (Kauye et al., 2014; Udedi, 2014). As presented in the results through the extensive quotes, it is clear that the difficulties facing qualified COs were as a result of various factors, such as: i) lack of knowledge as a result of inadequate pre-service training and lack of specialization, ii) lack of in-service training or continuing professional development (CPD) sessions on mental health, and iii) the general attitude of the health management team where mental health services are not supported with adequate resources and supportive supervision to primary care workers. Another participant explained that as a result of lack of exposure, she was only able to identify patients presenting with obvious symptoms such hallucinations and delusions. This may reflect on course delivery problems such as limited time for practical attachment and lack of experiential learning (Rotstein, Caric, Kulkarni, Sharp, 2020). Low detection rates have been reported in previous studies and as a result many patients with mental disorders are not on treatment (Kazdin, 2019; Vermani, Marcus et al., 2011). For example, a WMH survey involving 21 countries reported a high treatment gap (72%) for anxiety disorders (Alonso, Liu, Evans-Lacko, et. al., 2018), and that 35-50% in HICs and 76%-85% in LMICs of people with mental disorders were not on treatment (Demyttenaere et. al., (2004)

Secondly, participants reported difficulties in the managements of mental disorders. Some participants described the management as mere first aid treatment given to patients awaiting to be referred for further management at the district hospital or psychiatric hospital. In this case patient with mental disorders are only given medication to sedate them before they are referred on. For patients presenting with mild symptoms of mental disorders, counselling and psychotropic drugs would be offered when available. Participants observed that drug shortages was the main barrier for mental health services. As a result of this these shortages many patients are not treated at PHC facilities and this includes those with

chronic disorders already on medication not being able to refill their prescribed drugs. Other factors contributing to poor services included challenges such as lack of knowledge, lack of space, lack of a full range of mental health service, and high workload as a result of staff shortages. These results are consistent with local and international findings (WHO, 2011; Vartak and Natarajan, 2019; Udedi, 2016)

5.2.4.3 Perceptions about mental health and psychiatry training

The study found that most participants described their pre-service psychiatry and mental health training as inadequate and did not prepare them well for the work they are doing on mental health issues. A few participants described their training as adequate. Factors contributing to inadequate training included limited time allocation for theory and clinical teaching, and course design and content. Some participants thought the curriculum was not sufficiently comprehensive and did not include some important mental health problems seen in primary care, with limited time allocation resulting in some topics not being covered adequately. Similar findings were shown by a study that investigated undergraduate psychiatry teaching for medical officers in Australia (Rotstein, Caric, Jayashri et al., 2020; Kallivayalil, Enara, 2021).

5.2.4.4 Attitudes

The study found both positive and negative attitudes towards people with mental health problems and some positive attitudes towards mental health training. Some participants expressed positive feelings towards people with mental disorders because they were willing to help these people and were empathetic towards them. But some participants expressed negative attitudes, such as fear or discomfort working with people with mental illness as they saw them as being dangerous. The study also found that some participants were using stigmatizing language such as “crazy” to describe mentally ill people. These participants also thought mental health and psychiatry was less important and did not take mental health training seriously. Lastly, some participants expressed doubts on the effectiveness of treatment for mental disorders. In a systematic review on substance use disorders conducted in UK, Europe and USA, van Boekel, Brouwers et al., (2013) reported negative attitudes towards people with mental disorders. Other researcher from LMICs have also reported the existence of negative attitudes among healthcare workers (Alfredsson, San Sebastian et al., 2017; Al-Atram, 2018; Sahile, Yitayih et al., 2019).

5.3 Limitations

Several limitations of this study should be considered while interpreting these findings. Firstly, sampling for the quantitative component of the study was the number of trainees in one cohort only who were willing to take part in the study and available for mental health training. The sample size is therefore not large enough to allow generalization of the finding to other populations. Secondly, the study only tested

knowledge and attitude of trainee COs before and after undergoing training in the theory content before gaining clinical experience and knowledge. We therefore have not measured the impact of exposure to psychiatric clinical settings on knowledge, skills and attitudes of the trainees. In addition, due to time constraints the study did not include qualitative interviews with trainee COs after they had completed their practical attachments at Zomba Mental Hospital. This area may be considered for future research.

5.4 Implications for policy, training, practice and research

Firstly, the study revealed that mental health services are absent in some facilities and where services are available the quality of service is below standard. This points to the fact that, despite WHO policy recommendations and Malawi's mental health policy recommendations, the country has not done enough to integrate mental health into primary care. Investment in mental healthcare systems and appropriate resources is vital to improve services and address population mental health needs.

Secondly, the study findings showed that negative attitudes exist among trainee COs and COs working in primary care facilities. This means that mental health stigmatizing attitudes among COs working in primary care facilities contributes to poor mental health services. Mental health curricula for COs and other cadres should include information on attitudes and stigma against mental health in order to improve attitudes and behavior of PHC workers.

Thirdly, the study revealed that mental health training did result in increased knowledge and skills to identify mental disorders, as evidenced by the detection rates on the vignettes. Therefore, with some adjustments to COs curriculum and an increase in the number of hours of mental health training, utilizing general COs in the provision of mental health service could potentially be a more efficient strategy for integration of mental health into primary care.

Lastly, this study only assessed knowledge and attitudes in trainee COs before and after theoretical training but not after clinical placement. As such, we do not know the impact of clinical experience on their knowledge and attitudes. Such an assessment would be beneficial in future research.

5.5 Recommendations for policy, education, practice and research

In order to improve mental health services in primary health care, participants recommended improvements in the following areas: raising awareness, better availability of resources, improving training and introduction of in-service training, provision of a room for mental health services, and

improvements on staffing through the deployment of more staff members and increased in-service training.

Firstly, there is need for awareness and advocacy programs targeting policy makers, health service managers and healthcare workers and the general public. The reasons need to be made clear on why it is important to invest in mental health services and the expected effects and benefits. Changing attitudes towards mental health and mental illness is expected to address misconceptions regarding the magnitude of mental disorders conditions, their effects and stigma towards mental health and mental illness (Alfredsson, San Sebastian et al., 2017; Haider, Rahman et al., 2018). But as suggested by the participants, this can only happen if management is aware of the importance of mental health. With good perceptions and positive attitudes about mental health, management teams will make sure mental health services are supported adequately. In addition, national mental health plans should include in-service mental health training and deployment of psychiatric COs into the PHC. Being a low-income country Malawi may benefit in this regard by rolling out evidence-based programs such as WHO's mhGAP based training. WHO mhGAP based training has already been piloted in Malawi by various researchers and its impact on increasing knowledge, skills and confidence is well documented (Kokota et al, 2020; Arhens et al, 2020). This demonstrates that mhGAP based training can also be effectively used in pre-service training of healthcare workers.

Secondly, since this study revealed that funding for mental health is still directed at psychiatric hospitals as opposed to primary care facilities, policy makers should decentralize funding for mental health services. This is expected to improve resource allocation required for drug supplies, human resources, and infrastructure in order to improve service delivery (Semrau, Alem, Ayuso-Mateos et al, 2019; Twea, Manthalu, Mohan, 2020).

Thirdly, apart from increasing numbers of health workers, qualified CO participants mentioned the need for other cadres with prerequisite expertise such as psychosocial counsellors and psychiatric COs. The study found serious knowledge gaps for COs working in primary care. In addition, in-service mental health training is needed in order to up-date PHC workers on new mental health knowledge and skills. Increasing the capacity of COs will help them identify and manage ultimately more people suffering from mental will be able to access appropriate treatment. Lastly, government should look into providing infrastructure to accommodate mental health services, including dedicated spaces or rooms for mental health services at primary level.

Fourthly, the findings show evidence of poor knowledge, attitudes, and assessment and diagnosis of mental disorders. There is a need to improve the training for general COs so as to increase their knowledge and skills and reduce negative attitudes for increased efficiency in identifying and management of mental disorders. For this to happen training institutions should consider an increase in time allocation for theory and clinical placement on mental health during the basic CO training. To achieve this, mental health curriculum improvements are also needed to include anti-stigma education and ensure the curricula are responsive to patients' needs and address common conditions seen in PHC facilities (Rotstein, Caric, Jayashri et al., 2020). Trainers should also include WHO mhGAP based training in the pre-service for COs and nursing students. Introducing WHO mhGAP training into undergraduate training can play a big role in the scaling-up of mental health services into primary care. In addition, to improve the identification of mental disorders there is need for adequate training of COs and provision of supportive supervision by specialized mental health professionals is critical to improve the quality mental health services (Kauye, et al. 2014; Arhens, et. al., 2020; Rebello, Marques et al. 2014). Clinical Officers working in primary care should be able to get advice and support of specialized health professionals whenever they encounter difficulties. Study participants also highlighted the need for the deployment of psychiatric COs in primary care facilities.

Lastly, since this study involved few qualified COs, there is a need for further studies involving a larger sample to explore difficulties and experiences of COs in the delivery of mental health services. This will help to identify key areas to be targeted for intervention and help in the design of a model for mental health integration that is suitable for Malawi. In this study, trainee COs at MCHS (Blantyre campus) were involved. Furthermore, studies that involve all training institutions that train primary health workers should be done. This would help to generate information that would be used in the development of mental health curricula and the delivery of psychiatry and mental health module during training. Due to limited time this study tested knowledge and attitudes of trainee COs after undergoing mental health theory module without practical experience. A study that would evaluate knowledge and attitudes both theory and practical experiences of trainee COs is required to better understand the effect of COs training program.

5.6 Conclusion

This study is the first one in Malawi to investigate pre-service mental health training of COs coupled with an exploration of the application of learned skills and knowledge in PHC by qualified COs. The main findings of the study are that knowledge and attitudes increased following theoretical training. The study also revealed that factors such as lack of knowledge, lack of in-service training, drug shortages and inadequate training in pre-service programs are key barriers to the provision of effective mental health services at PHC. Overall, the interviews with qualified COs provide some evidence of knowledge gaps that need to be addressed to improve detection and management of mental disorders. These findings point to a greater need for including anti-stigma education in mental health training, the need to make the curricula responsive to patients' needs in primary care settings and the necessity of offering ongoing training and support for in-service COs.

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APPENDICES

Appendix 1: Consent Form

Evaluating the knowledge and attitudes of trainee clinical officers' (COs) in identifying and managing mental disorders in Malawi

Thank you for taking the time to think about helping with this research study. This study is run by Mr. E. J. Matoga from the University of Cape Town.

Please complete this consent form by ticking each point to indicate that you agree.

I confirm that I have read and understand the information sheet	
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	
I understand that confidentiality and anonymity will be maintained, and it will not be possible to identify me in any research outputs	
I consent to my interview being audio/video recorded. (Clinical Officers only)	

Participant Name _____ Date _____

Signature _____

Appendix 2: Information sheet for trainee clinical officers

Evaluating the knowledge and attitudes of trainee clinical officers' (COs) in identifying and managing mental disorders in Malawi

Thank you for taking the time to think about helping with this research study. This study is run by E. J. Matoga from the University of Cape Town.

What is the purpose of the study?

Many Clinical Officers find it difficult to work with people with mental illness when they are working in primary healthcare facilities. Before we can suggest measures to improve the delivery and content of the psychiatry and mental health module, we are hoping to obtain some background information on what you feel about mental illness and your knowledge about psychiatry and mental health. We believe this information will help us to improve the content of the psychiatry and mental health module and its delivery for the Diploma in Clinical Medicine course. We have organized questions to ask you about mental illness

Why am I being invited to take part?

You are being asked to take part in this study because you are undergoing training to become Clinical Officers who will work at PHC facilities. We would like you to help us understand how you feel about mental illness and we would also like to assess your knowledge on psychiatry and mental health.

What will happen if I take part?

If you agree to take part, you will answer questions about your age and schooling, and complete two questionnaires on what you feel about mental illness and assessing your knowledge about mental health and psychiatry. The first questionnaires will be completed at the beginning of training and the second one will be completed immediately after the training before the practical attachments.

Do I have to take part?

Participation is voluntary. If you choose not to take part, it will not affect your course participation or any of your examination results. However, by choosing to participate in this study you will be contributing to very important information that will help to improve the mental health training and practice. Therefore, consider your participation as a very vital contribution you can make in the field of mental health.

What if I change my mind about taking part?

You can choose to stop at any time and again you will not be penalized. You can refuse to answer any question or decide to stop answering the questionnaire at any point.

What are the possible risks of taking part?

The questionnaire contains questions about what you think about mental illness and questions assessing your knowledge about mental disorders. The questions are not different from those you are familiar with in your academic work. So we do not expect any discomfort to occur during the session. But in case you

feel uncomfortable during the exercise, we will do our best to support you. There are counselors available at the hospital to assist you and we can refer you to other places for help as well.

What are the possible benefits of taking part?

While there are no direct benefits for you, the information we collect will be used to improve the mental health training being provided to COs.

Data handling and confidentiality

We do not put your name on your answers. And we keep these consent forms separately from your answers. Since your name will not be used on the questionnaires, I will not know the responses you gave in this study. When we talk about information we were given, we say 'so many people responded this way' or 'so many people said this', and so on. This means no one will know your responses on the questionnaires. Information collected in this study will not be shared with anyone.

What will happen to the results of the study?

When the study is over, the information will be analyzed and articles could be published in academic journals, along with information collected in the interview. This will not include any names or addresses. We may also give the information, without names or any identifying details to other people who are interested in health information.

What if I have further questions, or if something goes wrong?

If you have any questions, comments or concerns about the research, please contact Mr. E. J Matoga, via telephone (0881767896) or email (ematoga2000@gmail.com). Or you can contact the UCT FHS Human Research Ethics Committee on +27 21 406 6338.

You may keep this copy of the information sheet.

Appendix 3: Information sheet for clinical officers

Evaluating the behavior of qualified clinical officers' (COs) in identifying and managing mental disorders in Malawi

Thank you for taking the time to think about helping with this research study. This study is run by E. J. Matoga from the University of Cape Town.

What is the purpose of the study?

Many Clinical Officers find it difficult to work with people with mental illness when they are working in primary healthcare facilities. Before we can suggest measures to improve the delivery and content of the psychiatry and mental health module, we are hoping to obtain some background information on what you feel about mental illness and your knowledge about psychiatry and mental health. We believe this information will help us to improve the content of the psychiatry and mental health module and its delivery for the Diploma in Clinical Medicine course. We have organized questions to ask you about mental illness

Why am I being invited to take part?

You are being asked to take part in this study because you are a Clinical Officer working at PHC facility. We have also chosen you because you were trained at MCHS Blantyre campus. We would like your help to see if the questions we will ask you about your experiences working with people with mental illness will help us to understand the challenges COs go through when assessing and treating mental disorders.

What will happen if I take part?

If you agree to take part, I will ask you questions about your age and number of years of working. Then I will ask a few questions about your psychiatry and mental health course and your experiences and opinion about mental health. We are also interested in recording this session with audio recorder, so we can listen when different people say different things

Do I have to take part?

Participation is voluntary. You can choose to take part, or you can refuse to take part. If you choose not to take part, you will not be treated badly by anyone or your superiors. However, by choosing to participate in this study you will be contributing very important information towards improvement of mental health training and practice. Therefore, consider your participation as a very vital contribution you can make in the field of mental health.

What if I change my mind about taking part?

You can choose to stop at any time and again you will not be penalized. You can refuse to answer any question or decide to stop answering the questionnaire at any point.

What are the possible risks of taking part?

The questionnaire contains questions about what you think about mental illness and questions assessing your knowledge about mental disorders. The questions are not different from those you are familiar with

in your academic work. So we do not expect any discomfort to occur during the session. But in case you feel uncomfortable during the exercise, we will do our best to support you. There are counselors available at the hospital to assist you and we can refer you to other places for help as well.

What are the possible benefits of taking part?

While there are no direct benefits for you, the information we collect will be used to improve the mental health training being provided to COs.

Data handling and confidentiality

We do not put your name on your answers. And we keep these consent forms separately from your answers. Since your name will not be used on the questionnaires, I will not know the responses you gave in this study. When we talk about information we were given, we say 'so many people responded this way' or 'so many people said this', and so on. This means no one will know your responses on the questionnaires. Information collected in this study will not be shared with anyone.

What will happen to the results of the study?

When the study is over, the information will be analyzed and articles could be published in academic journals, along with information collected in the interview. This will not include any names or addresses. We may also give the information, without names or any identifying details to other people who are interested in health information.

What if I have further questions, or if something goes wrong?

If you have any questions, comments or concerns about the research, please contact Mr. E. J. Matoga, via telephone (0881767896) or email (ematoga2000@gmail.com). Or you can contact the UCT FHS Human Research Ethics Committee on +27 21 406 6338.

You may keep this copy of the information sheet.

Appendix 4: Questionnaire for trainee Clinical Officers

Date		Participant ID		Are you repeating year 2	YES		NO	
Age		Date of Birth		Gender	M		F	

For each of the 16 questions below, respond by choosing the option that best describes your level of agreement

1	I just learn about mental health when I have to, and would not bother reading additional material on it	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
2	People with a severe mental illness can recover enough to have a good quality of life.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
3	Working in the mental health field is just as respectable as other fields of health and social care.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
4	If I had a mental illness. I would never admit this to my friends because I would fear being treated differently.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
5	People with a severe mental illness are dangerous more often than not.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
6	Health/social care staff know more about the lives of people treated for a mental illness than do family members and friends.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree

7	If I had a mental illness, I would never admit this to my colleagues for fear of being treated differently.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
8	Being a health/social care professional in the area of mental health is not like being a real health/social care professional.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
9	If a senior colleague instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
10	I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree Strongly disagree
11	It is important that any health/social care professional supporting a person with a mental illness also ensures that their physical health is assessed.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
12	The public does not need to be protected from people with a severe mental illness.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree Strongly disagree

13	If a person with a mental illness complained of physical symptoms (such as chest pain) I would attribute it to their mental illness.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
14	General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
15	I would use the term 'crazy', 'nutter', 'mad' etc. to describe to colleagues' people with mental illness who I have seen in my work	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
16	If a colleague told me they had a mental illness, I would still want to work with them.	☐ Strongly agree ☐ Agree ☐ Somewhat agree ☐ Somewhat disagree ☐ Disagree ☐ Strongly disagree
The next few questionare about your knowledge of mental health. Please choose the correct answer for each question		
1	Which of the following is considered a core effective communication skill? Choose the one best answer: A. Speaking to the person only and not the carer B. Start by listening C. Using an open space for safety D. Limited eye contact	
2	Which of the following is consistent with promoting respect and dignity for people with a mental neurological and substance use (MNS) condition? Choose the one best answer: A. Making decisions on behalf of a person with an MNS condition, with their best interests in mind B. Using correct medical terminology to explain things, even if complicated C. Ensuring consent to treatment is received from the carer and/or family D. Ensuring privacy in the clinical setting	

3	Which of the following cluster of symptoms best fits with an episode of depression? Choose only one best answer: A. Marked behavioral change, agitated or aggressive behavior, fixed false beliefs B. Decline in memory, poor orientation, loss of emotional control C. Inattentive, over-active, aggressive behavior D. Low energy, sleep problems, and loss of interest in usual activities
4	Which of the following is a good combination treatment for depression? A. Vitamin injections and increasing exercise B. Psychosocial interventions and an antidepressant C. An antipsychotic medication and a mood stabilizer D. Hypnotherapy and relaxation
5	Which of the following cluster of symptoms fits best with an acute manic episode? Choose only one answer: A. Confusion, disorientation to time, place and person, marked functional decline B. Admits to consuming alcohol, has slurred speech and uninhibited behavior C. Has recently stopped taking regular benzodiazepines, and presents with agitation, sweating and poor sleep D. Decreased need for sleep, increased activity and reckless behavior
6	Which of the following statements concerning psychosis and bipolar disorder is correct? Choose the best answer: A. People with psychosis or bipolar disorder do not need evaluation for medical conditions B. People with psychosis or bipolar disorder are best cared for with long-term hospitalization C. People with psychosis or bipolar disorder are unlikely to be able to work or contribute to society D. People with psychosis or bipolar disorder are at high risk of stigmatization and discrimination
7	Which of the following is part of a psychosocial intervention in psychoses? Choose the best answer: A. Encourage participation in daily activities but recommend against work or serious relationships as they may be too stressful B. Discuss with the carer and family whether long-term institutionalization may be appropriate C. Provide psycho-education, especially to avoid sleep deprivation, stress, and drugs and alcohol D. Discuss with the carer different ways that they might be able to challenge the delusions of the person
8	Which of the following statements concerning epilepsy is correct? Choose the best answer: A. Epilepsy is a communicable disorder of the brain B. Epilepsy is a sign of spirit possession C. Epilepsy is always genetic in cause D. Epilepsy is one of the most common neurological disorders

9	Which of the following requires emergency medical treatment? Choose the best answer: A. When someone starts to feel that a seizure is imminent B. If the seizure lasts for more than 1 minute C. If the seizure lasts for more than 5 minutes D. If the person is drowsy once the seizure is over
10	Which of the following is a common presentation of dementia? Choose the best answer: A. Low mood and loss of enjoyment in usual activities B. Fixed false beliefs and hearing voices C. Excessive activity and inattention D. Decline or problems with memory and orientation
11	Which of the following is a common presentation of dementia? Choose the best answer: A. Severe forgetfulness and difficulties in carrying out usual work, domestic or social activities B. Drowsiness and weakness down one side of the body C. Fluctuating mental state characterized by disturbed attention that develops over a short period of time D. Low mood in the context of major loss or bereavement
12	Which of the following is the best description of dementia? Choose only one answer: A. Dementia can have a large impact on the person, their carer, family and society at large B. Dementia can be cured through pharmacological interventions C. Dementia does not interfere with activities of daily living, such as washing, dressing, eating, personal hygiene and toilet activities D. Dementia is a normal part of aging
13	Which of the following statements best describes treatment options in dementia? Choose only one answer: A. All people with dementia should have access to pharmacological interventions, regardless of specialist availability B. Pharmacological interventions, if started early enough, can cure dementia C. With early recognition and support, the lives of people with dementia and their carers can be significantly improved D. Psychosocial interventions for dementia should only be provided by a specialist, due to their complexity
14	Which of the following best describes symptoms of substance dependence? Choose only one answer: A. Sedation, unresponsiveness, pinpoint pupils following use B. Current thoughts of suicide, bleeding from self-inflicted wound, extreme lethargy C. Strong cravings, loss of control over substance use, withdrawal state upon cessation of use D. Intravenous drug use once per month, but violent towards others when using

15	Which of the following illnesses should you screen for in people who inject opioids? Choose the best answer: A. HIV and hepatitis B. Wernicke's encephalopathy C. Epilepsy D. Thyroid disease	
16	Which of the following should you tell the carer of someone who has had an episode of self-harm or a suicide attempt? Choose the best answer: A. Medication will be made available so that they can keep the person sedated B. Restrict the person's contact with family, friends and other concerned individuals in case it is too overwhelming C. Remove access to any means of self-harm and try and provide extra supervision for the person D. Forced vomiting is an emergency treatment option if they suspect any self-harm or suicide	
17	Which of the following is part of a psychosocial intervention where the person seeking help witnessed the death of a loved one to violence? Choose the best answer: A. They should talk about the incident as much as possible, even if they do not want to B. It is normal to grieve for any major loss, in many different ways, and in most cases, grief will diminish over time C. Avoid discussing any mourning process, such as culturally appropriate ceremonies/rituals, as it may upset them further D. Refer to a specialist within one week of the incident if they are still experiencing symptoms	
The next few questions are about case scenarios. Please read the vignette below and choose ONE answer that best fits with one of the diagnoses on the right		
1	Emmanuel is a 20-year-old man who is brought to your clinic by his friends. They are very worried about him because he is afraid that the government is monitoring him and keeps saying that he can hear people talking about him. When you ask them for more information, they say that he has not been himself for several months, at times does not make sense, and has not been coming to the university much. He is about to fail the semester. There is nothing remarkable on physical history, examination or blood tests, and his urine drug screen is negative. When you speak to him, he seems suspicious of you, does not make a lot of sense, and does not think that there is anything wrong with him. He wants to leave and starts to become quite aggressive when you ask him to stay, saying that he is unsafe here and people are watching him.	☐ Depression ☐ Psychoses ☐ Epilepsy ☐ Anxiety disorder ☐ Dementia ☐ Disorders due to substance use ☐ Self-harm/suicide ☐ Bereavement

2	Cara is a 17-year-old woman who is brought in by her family after having a period of shaking, rigidity and incontinence at home. She is currently confused and drowsy and does not know where she is. She reports she has always been happy and healthy, did well at school but left last year to start working, which is also going well. She is worried that she has been possessed by a spirit. When you speak to Cara, she is still not sure what has happened and why she is in hospital. She complains of weakness down one side of her body and feeling sore all over.	☐ Depression ☐ Psychoses ☐ Epilepsy ☐ Anxiety disorder ☐ Dementia ☐ Disorders due to substance use ☐ Self-harm/suicide ☐ Bereavement
3	A 28-year-old female presents to the clinic with complaints of joint pain (arthralgia) and intermittent low back pain. Patient cannot recall any mechanism of injury. She reports she has trouble falling asleep at night and is unable to get a good night's rest. She often feels "restless" or "on edge", which she associates with not sleeping. She states she constantly worries about her performance at work, her family, and her mother's health, who has recently been diagnosed with cancer. Patient also states she wakes up at night with throbbing headaches that last for a couple hours. She feels tense the majority of the day, causing her to feel stiff. She also has difficulty focusing at work.	☐ Depression ☐ Psychoses ☐ Epilepsy ☐ Anxiety disorder ☐ Dementia ☐ Disorders due to substance use ☐ Self-harm/suicide ☐ Bereavement

Appendix 5: Pre- and Post- Knowledge Test Answers

1	b
2	d
3	d
4	b
5	d
6	d
7	c
8	d
9	c
10	d
11	a
12	a
13	c
14	c
15	a
16	c
17	a
Case studies	
18	b
19	c
20	d

Appendix 6: Interview Guide for qualified Clinical Officers

Date		Participant ID						
Age		Date of Birth		Gender	M		F	

Interview Guide

1. In which year did you graduate?
2. How long have you been working at this facility?
3. Have you worked at other facilities since graduating?
4. Would you please describe the most common conditions you see and treat on daily basis?
5. On average, how many mentally ill patients do you see per day/week/month? (Probe: if none, what could be the reason? What type of mental illnesses?)
6. How do you feel working with people with mental illness? (Probe: positive or negative feelings)
7. What do you do when you have a patient with mental disorders? (Probe: assess? Diagnose and treat? Assess and refer?)
8. Can you describe how you diagnose mental disorders? (Probe: any challenges?)
9. Tell me what problems you face working with people with mental illness? (Probe: Challenges? Good /positive things?)
10. How do you describe the mental health services you are providing at this facility? (Probe: present or absent? The quality of care?)

11. Which resources do you think are needed for you to work better? (Probe: Drugs? Human?)

12. What kind of help would you like to receive from authorities? (Probe: Social support? Psychological support?)

13. We have talked a lot about your experiences working as a CO and your experiences working with people with mental illness. How well do you think the training you received at the college helped prepare you for this work? What do you suggest should change in the training, if anything?"

Finally, is there anything important we have left out that you would like to discuss?

Appendix 7: University of Cape Town ethics approval

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

Room G50- Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6492
Email: hrec-enquiries@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

03 November 2020

HREC REF: 647/2020

Dr Z Abrahams
Department of Psychiatry & Mental Health
Alan J Flisher Centre for Public Mental Health
Room 3, The Annex
46 Sawkins road, Rondebosch
Email: Zulfa.abrahams@uct.ac.za
Student: Iematoga2000@gmail.com

Dear Dr Abrahams

PROJECT TITLE: EVALUATING THE KNOWLEDGE AND ATTITUDES OF TRAINEE CLINICAL OFFICERS' (CO s) AND THE SKILLS OF QUALIFIED CO's IN IDENTIFYING AND MANAGING COMMON MENTAL DISORDERS IN MALAWI-MASTERS CANDIDATE-MR ELLIOTT J MATOGA

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee (HREC) for review.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study, subject to local Malawi approval.

This approval is subject to strict adherence to the HREC recommendations regarding research involving human participants during COVID -19, dated 17 March 2020 & 06 July 2020.

Approval is granted for one year until the 30 November 2021.

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)

The HREC acknowledge that the student: - Mr Elliott Matoga 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, where necessary, before the research may occur.

Appendix 8: National Health Sciences Research Committee ethics approval

Telephone: + 265 789 400
Facsimile: + 265 789 431
e-mail doccentre@malawi.net
All Communications should be addressed to:
The Secretary for Health and Population

In reply please quote No. MED/4/36c

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

11th December, 2020

Elliot Matoga
Malawi College of Health Sciences

Dear Sir/Madam,

RE: Protocol #20/12/2636: Evaluating the Knowledge and Attitudes of Trainee Clinical Officers' (Cos) and the Skills of Qualified Cos in Identifying and Managing Common-99O Mental Disorders in Malawi

Thank you for the above titled proposal that you submitted to the National Health Sciences Research Committee (NHSRC) for review.

The Committee reviewed the protocol and asked the researcher to **resubmit for expedited review** after addressing the following concerns;

1. Name the specific stakeholders in your dissemination plan and include NHRSC when disseminating
2. Under Section 5.7 under ethical considerations – it should read as National Health Sciences Research Committee (NHSRC)
3. Budget and work plan should be part of the main proposal and not placed in the appendices (Follow NHSRC Checklist)
4. Provide CVs for the supervisors as per the requirement; the NHSRC does not have CVs for the mentioned names
5. Include NHSRC contact details in the ICF

Ministry of Health
11 DEC 2020
Research Department
P.O. Box 30377, Lilongwe

Kind regards from the secretariat

.....

FOR CHAIRMAN, NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE