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Mental Health Literacy Among Rural and Urban Young Adults in Zambia

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Abstract

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by

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MS, Walden University, 2011

BS, Regent University, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health – Community Health Education

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Abstract

Misconceptions that negatively influence attitudes and beliefs about mental illness are still prevalent in Zambia. Researchers have reported that young adults are the most impacted population for mental disorders in Zambia. Researchers have also highlighted mental health literacy (MHL) as a useful strategy for influencing positive attitudes and beliefs about mental disorders. The purpose of this quantitative cross-sectional study was to investigate the relationship between levels of MHL and attitudes and beliefs about mental illness and health-seeking behaviors of Zambian young adults aged 18 to 24. The study used the health belief theoretical model. A MHL questionnaire was used to collect primary data on a sample size of 474 drawn from higher secondary and tertiary schools. Binary logistic regression and descriptive statistics were used to analyze the data and understand the relationship between levels of MHL and socio-demographics (age, gender, location and education), family history, knowledge about mental illness (depression, stress, marijuana overuse, and alcohol abuse), and attitudes and beliefs about mental illness. The findings revealed a relationship between levels of MHL and family history, knowledge about mental illness, attitudes about mental illness, and beliefs about mental illness. There was no association between levels of MHL and health-seeking behaviors. Young adults in Mongu rural reported higher levels of MHL than those in Lusaka urban. MHL intervention can influence positive social change by changing attitudes and beliefs about mental illness and ultimately reducing mental disorders among rural and urban Zambian young adults.

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Dedication

I dedicate this achievement to my first love and the most important woman in my life, my late dear and beloved mother, Inonge Lukuku Matakala. Her profound love of God instilled in me my deep faith in God and the belief that anything is possible for those who believe. She forever lives in my heart and I felt her spirit throughout this process. I also dedicate my achievement to my husband, Brian, and my dearest children, Brian and Aidan, who never complained but continued to pray for me and support me.

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Chapter 1: Introduction to the Study

Introduction

Misconceptions about mental disorders are still widespread in most African countries, including Zambia. According to Mwape et al. (2011), the negative attitudes towards mental illness are entrenched in society, negatively impacting stigma and fear for the mentally ill. Researchers have also found that most African people still consider mental illness or mental disorders taboo diseases due to a pervasive culture of denial, myths, and negative perceptions that marginalize and ostracize people perceived to have mental illnesses (Amuyunzu-Nyamango, 2013).

In Zambia, a lack of knowledge about mental disorders has contributed to the negative attitudes and beliefs about mental illness and the many challenges people with mental illness face (Mwape et al., 2011). According to Mwape et al., family members carry the burden of looking after their mentally ill relatives in most cases, and because of a lack of resources and the knowledge to care for the mentally ill, the load could be significant. Kishore et al. (2011) reported that fear and adverse attitudes and ignorance of mental illness could result in an insufficient focus on the physical health needs of those impacted by mental disorders.

Published literature on mental illness in Zambia exists. Still, it is unclear whether such research has impacted positive attitudes towards mental illness and the mentally ill, particularly young adults. Further, most of the published literature offers little information on whether mental health literacy could be an effective strategy to influence young adults' perceptions of mental illness. In this study I examined the relationship

between levels of mental health literacy and beliefs and attitudes towards mental illness among Zambian young adults aged 18 to 24 years. Specifically, I examined whether levels of mental health literacy could have an impact on influencing beliefs and attitudes towards mental illness of Zambian young adults. I compared data in young adults in rural and urban areas. The research is particularly important for this segment of the Zambian population because according to the United States Agency for International Development (USAIDS, 2014), adolescents or youth constitute a large portion of the Zambia population.

Globally, adolescents are the most vulnerable population for mental disorders (U.S. Department of Health and Human Services [USDHHS], 2017; Loureiro et al., 2013). In Zambia, adolescents are more likely to suffer from mental disorders due to various vulnerabilities including poverty, diseases (Ministry of Health, 2011a), and lack of knowledge about mental illness (Swiss Academy for Development [SAD], n.d.). Like in most African countries, Atilola (2013) noted that the rural population is more likely to be impacted by mental illness than the urban population due to the impact of cultural myths and misconceptions on beliefs and attitudes about mental illness. In addition to cultural myths, a lack of educational facilities and tools that address health literacy and mental illness also negatively impact the rural community's perceptions about mental illness (USAID, 2014). Zambia has a rich and diverse cultural environment that can promote good health, but certain aspects of religion and social beliefs still play a significant role in influencing health (Ministry of Health, 2011b).

Wei et al. (2015) reported that mental health literacy can influence attitudes and beliefs about mental illness and treatment-seeking habits. Thus, mental health literacy as an intervention strategy for mental illness could positively influence social change by addressing mental ill-health disparities and changing the negative attitudes toward mental illness among Zambian young adults.

In this chapter, I provided background on mental disorders and mental health literacy. I also provided an overview of the pervasiveness and significance of mental disorders in Zambian society, existing literature on mental disorders, factors contributing to high prevalence rates, and mental health literacy as a strategy to influence attitudes towards mental illness positively. Further, the chapter included the impact of mental illness on young adults and how to impact positive social change by addressing mental health disparities.

Background

Although awareness about mental disorders has increased, disparities in addressing mental illness continue in most African countries such as Zambia. Centers for Disease Control and Prevention ([CDC], 2016) defined mental illness (also known as mental disorders) as disorders generally characterized by dysregulation of mood, thought, and/or behavior, which could lead to diseases such as anxiety, depression, psychotic disorders, and bipolar disorders. There is a dearth of research on current global prevalence estimates on mental disorders. World Health Organization ([WHO], 2003) reported that about 450 of the world's population suffer from mental disorders, and although the data are more than a decade old, they establish that mental illness is one of

the leading causes of ill-health and disability worldwide. Further, WHO (2011) reported a severe economic impact in low-income and middle-income countries, with the cost estimated at 3.2% and 5.1%, respectively. According to WHO (2011), depression will be the leading cause of disability globally by 2030. When considering limitation in the calculation of disease burden, mental disorders account for about 25.3% in low-income countries, and 33.5% in middle-income countries, of all years lived with disability (WHO, 2011).

In most African countries, Zambia included, negative stereotypes about mental illness have promoted fear of the mentally ill, both in the general public and inside government institutions, subjecting individuals with mental illness to human rights violations, stigma, and discrimination (Mental Disability Advocacy Center & Mental Health Users Network of Zambia [MDAC & MHUNZ], 2014). According to the MDAC and MHUNZ, vulnerability to mental illness is due to various factors, including lack of knowledge about mental illness, negative attitudes towards mental illness, and lack of effective policies that address mental illness. Amuyunzu-Nyamango (2013) found that because of perceptions that label mental illness as taboo, a disease that cannot be discussed and acknowledged, confronting mental illness in Africa, Zambia included, is a challenge. Further, misinformation and beliefs that negatively influence African peoples' attitudes towards mental illness, including Zambia, prevent the mentally ill from disclosing their conditions for fear of stigma and discrimination (MDAC & MHUNZ, 2014).

Adolescents are the most vulnerable segment of the world's population, and onset could be as early as age 14 years (USDHHS, 2017). According to USDHHS (2017), mental disorders could lead to life-threatening situations, such as suicide, when left untreated. One in five adolescents suffer from depression, anxiety, or other diagnosed mental disorders (USDHHS, 2017), and 28% of adolescents suffer from impairment due to mental illness (Merikangas et al., 2010). The lifetime prevalence of anxiety among adolescents aged 13 to 17 years is estimated at 32.4% (Kessler et al., 2012). Depression is the leading cause of death among young adults aged 15 to 24 years, and children aged 10 to 14 years are more likely to die from suicide than a motor vehicle (USDHHS, 2017; Loureiro et al., 2013). According to Loureiro et al., at least one in five adolescents would have experienced depression by age 18 years, with prevalence among adolescents estimated at 4-8%.

Similarly, adolescents are the most vulnerable segment of the Zambian population due to multiple vulnerabilities, including poverty, diseases, and lack of knowledge about mental illness (SAD, n.d; Ministry of Health, 2011b). Identifying people with mental illness and encouraging them to seek help is a challenge for public health, especially in African countries such as Zambia, where, according to Monteiro (2015), mental illness remains a silent epidemic due to systematic and financial difficulties. Knowledge about mental illness in Africa, and Zambia in particular, is therefore critical because it could impact peoples' attitudes and beliefs about mental illness, and their health-seeking behaviors. WHO (2011) affirmed that knowledge about mental illness could impact how individuals, societies, and communities deal with mental illness. Knowledge about

mental illness could also impact how people control their health and that of families and communities (Kanj & Mitic, 2009; Zimmerman et al., 2015).

Mental health literacy is a relatively new concept that has emerged as a useful strategy in the promotion and early identification of mental disorders (Wei et al., 2015). The term mental health literacy is coined from the name health literacy, which was defined as "the degree to which individuals can obtain, process and understand basic health information and services needed to make appropriate health decisions" (Institute of Medicine ([IoM], 2004, para.1). Mental health literacy is defined as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm et al, 1997, para. 1). Improved knowledge about mental health and mental disorders can potentially improve early identification of mental disorders, mental health outcomes, and treatment-seeking habits (Wei et al., 2015). In Chapter 2, mental health literacy history is discussed in detail, including research that has linked mental health literacy as an effective intervention strategy for mental illness.

Disparities exist in rural and urban mental health outcomes (Vijayalakshmi et al. 2013). According to Vijayalakshmi et al., rural adolescents are more susceptible to adverse mental health outcomes due to lower levels of mental health literacy. In their study, Vijayalakshmi et al. compared the impact of mental health literacy in urban and rural India and concluded that 81% of the rural Indian population who reported no previous contact with mental illness showed a low level of awareness and psychiatric knowledge about mental disorders. Zuniga and Guidry (2014) found that unique developmental needs and limitations of living in geographically isolated areas are some

of the factors that contribute to adverse effects of mental illness in rural areas than urban areas. In Zambia, mental illness is higher among rural populations than urban populations due to lower levels of mental health literacy, poverty, and diseases (SAD, n.d.; MDAC & MHUNZ, 2014).

The relationship between mental health literacy and attitudes and beliefs about mental illness has been examined in Western countries. There is a gap in research that measures mental health literacy among Zambian young adults aged 18 to 24 years. This study is critical to explore whether there is a relationship between levels of mental health literacy and attitudes and beliefs about mental illness and help-seeking behaviors. The study's findings could help design appropriate strategies to improve levels of mental health literacy and ultimately reduce prevalence rates in rural and urban Zambian young adults. The study findings could also help understand whether mental health literacy could be used as an effective strategy in addressing mental disorders among Zambian rural and urban young adults.

Problem Statement

For this study, the question examined was whether there is a relationship between levels of mental health literacy and attitudes and beliefs towards mental illness and health-seeking behaviors among rural and urban young adults in Zambia. Research on mental illness in Zambia is critical, given research that documents the existence of negative attitudes towards mental illness in the Zambian society (Kapungwe et al., 2010) and high prevalence rates of mental illness among the youth (SAD, n.d.) due to myths and misconceptions that have labeled mental disease as a taboo illness (MDAC &

MHUNZ, 2014). The focus on Zambian youth is particularly important because studies have indicated that the youth constitute a more significant segment of the Zambian population (USAID, 2014).

Recognition of mental illness as a public health issue remains a challenge in Africa in general, despite global awareness. Zambia lies in the Sub-Saharan region of Africa. Researchers have reported that most African people still lack a greater understanding of mental illness due to lack of knowledge, cultural beliefs, and lack of adequate national and technical investments in the mental health sector, and options for care and support (Amuyunzu-Nyamango, 2013; Ehiemua, 2014). Due to a lack of knowledge, mental illness is still labeled as possession by supernatural spirits by traditional healers, leading to stigma and discrimination for the mentally ill (Amuyunzu-Nyamongo, 2013). According to Amuyunzu-Nyamango (2013), the mentally ill are scared to disclose a mental illness due to fear of being isolated from society.

Like other African countries, mental disorders remain a silent condition in Zambia. Kapungwe et al. (2010) found that the mentally ill suffer in silence due to the negative attitudes attached to mental illness. According to Kapungwe et al., cultural beliefs and stereotypes that label the mentally ill as magical, dangerous, violent, and unpredictable are pervasive in the Zambian society, leading to negative perceptions about mental illness and treatment options that favor punitive and discriminatory measures. Kapungwe et al. noted that inadequate mental health literacy could lead to misunderstandings of mental health issues and fears of contagion, the perceived

dangerousness of the mentally ill, associations of mental illness to HIV/AIDS, discrimination, and stigma.

Poverty and diseases are high risk factors for mental illness and still persistent in Zambian society (Carvalho & Nsemukila, 2013). Prevalence rates of mental illness could increase due to the extent of poverty, HIV/AIDS, and unemployment (Mwape et al., 2011). Zambia had a population of 13 million in 2011, and adolescents accounted for about 27% of that population (Ministry of Health, 2011a), indicating that adolescents are the most impacted segment of the society, particularly those in rural areas (SAD, n.d.). 61% of the population lives in rural areas where access to education and mental health services is limited (MDAC & MHUNZ, 2014), making the risk to mental illness in rural areas higher than in urban areas.

Ministry of Health (2011b) have reported that 20% to 30% of Zambians suffer from mental disorders. According to Ministry of Health, common factors contributing to mental disorders include family systems, poverty, a rise in urbanization, unemployment, alcohol and substance abuse, child abuse, and HIV/AIDS. MDAC and MHUNZ also reported violations of human rights in the form of abuse and neglect for the mentally ill in Zambian government institutions, private facilities, and family settings.

Culture and religious beliefs influence African peoples' worldviews about mental illness (Atilola, 2013). In Zambia, like in other African countries, culture plays a significant role in influencing attitudes and beliefs towards mental illness and the mentally ill and treatment seeking habits (MDAC & MHUNZ, 2014). Because of the scarcity of conventional medicine in rural areas due to limited mental health literacy,

traditional healers play an essential role in mental health care (MDAC & MHUNZ, 2014). According to MDAC and MHUNZ, traditional healers use culturally appropriate intervention methods, often involving abusive means such as tying and chaining the mentally ill. Ministry of Health (2011a) affirmed that traditional practices still play a significant role in Zambia's healthcare practices and that despite widespread malpractices, no legal framework has been put in place to control such practices. MDAC and MHUNZ also reported that religious leaders also play a significant role in providing mental health services in Zambia.

Increased awareness for mental illness as a public health issue and advocating for protection for human rights for the mentally ill has been the focus for organizations such as WHO for centuries. According to WHO (2007), health is a basic human need and society's development, rich or poor, is judged by its population health quality, and equity in health care distribution.

Despite increased awareness, disparities continue to exist in Zambia in delivering health care in rural and urban areas, with inadequate systems and policies to effectively address mental ill-health (MDAC & MHUNZ, 2014). Public health's role is to protect population health both in small and large populations (CDC, 2018). Therefore, improving mental ill health, especially among young adults and adolescents who are the larger segment of the Zambian people, could significantly reduce the prevalence rate of mental disorders among Zambian youth. There is a gap in research that addresses the relationship between levels of mental health literacy and attitudes and beliefs about mental illness, and mental health literacy as a potential strategy for addressing mental

health issues among Zambian young adults. In a society where cultural factors still influence public perceptions about mental illness (Kapungwe et al., 2010), higher levels of mental health literacy could lead to early intervention for mental illness (Lam, 2014) among Zambian young adults.

Purpose of the Study

Most of the research on mental health literacy has been conducted in developed countries, and few studies in Africa (Burns & Birrell, 2014; Loureiro et al., 2013; McNeal, 2015). In Zambia, most of the research has focused on prevalence and attitudes towards mental illness, and the stigma attached to mental illness (Nseluke & Siziya, 2011; Kapungwe et al., 2011; Kapungwe et al., 2010). To date, very little published research, if any, has explored the extent to which levels of mental health literacy could influence attitudes towards mental illness among Zambian rural and urban young adults.

For this study, the purpose was to examine whether there is a relationship between levels of mental health literacy and attitudes and beliefs towards mental illness and health-seeking behaviors among Zambian rural and urban young adults. This study's dependent variable was levels of mental health literacy, and the independent variables were attitudes and beliefs towards mental illness and health-seeking behaviors.

In this study I examined levels of mental health literacy among rural and urban young adults because the availability of educational facilities and mental health services in rural and urban areas differ (MDAC & MHUNZ, 2014). Previous research findings have revealed that access to communication resources such as the Internet is better in Zambian urban areas than rural areas (USAID, 2014), which factors could lead to the

high prevalence of mental illness in rural young adults. Findings for this study could be used to facilitate campaigns and programs that educate young adults about mental illness and influence positive attitudes towards mental illness, and reduce the stigma attached to mental disorders. Such campaigns and knowledge of information could lead to open discussions about mental illness and early intervention for mental disorders among young adults, particularly those in rural areas. Prevention and promotional programs could also be used by clinicians and Public Health professionals by integrating programs into public health strategies to avoid death, reduce the stigma attached to mental illness and improve economic and social environments (WHO, 2011).

Research Questions and Hypothesis

The data were analyzed to investigate the relationship between levels of mental health literacy and attitudes and beliefs towards mental illness among young adults in rural and urban Zambia. In this study I hypothesized that low levels of mental health literacy contribute to negative attitudes and beliefs towards mental illness. The central question addressed in the study was: Is there a relationship between levels of mental health literacy and attitudes and beliefs towards mental illness among Zambian young adults and their health-seeking behaviors?

The first question examined whether levels of mental health literacy among Zambian young adults differed by levels of education (higher secondary school and tertiary), location (rural/urban), gender, and age. The second question examined whether there was a relationship between family history and levels of mental health literacy. The third question examined whether there was a relationship between knowledge of mental

illness (measured as depression, stress, marijuana overuse, and alcohol abuse) and levels of mental health literacy. The fourth question examined whether there was a relationship between attitudes towards mental illness and levels of mental health literacy. The fifth question examined whether there was a relationship between beliefs about mental illness and levels of mental health literacy. The sixth question examined whether there was a relationship between health-seeking behaviors and levels of mental health literacy.

The subquestions discussed were as follows:

Research Question 1: What is the relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy?

$H_0$1: There is no relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

H_a1: There is a relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

Research Question 2**:** What is the relationship between family history and levels of mental health literacy?

$H_0$2: There is no relationship between family history and levels of mental health literacy.

H_a2: There is a relationship between family history and levels of mental health literacy.

Research Question 3. What is the relationship between knowledge of mental illness and levels of mental health literacy?

$H_0$3: There is no relationship between knowledge of mental illness and levels of mental health literacy.

H_a3: There is a relationship between knowledge of mental illness and levels of mental health literacy.

Research Question 4. What is the relationship between attitudes towards mental illness and levels of mental health literacy?

$H_0$4: There is no relationship between attitudes towards mental illness and levels of mental health literacy.

H_a4: There is a relationship between attitudes towards mental illness and levels of mental health literacy.

Research Question 5. What is the relationship between beliefs towards mental illness and levels of mental health literacy?

$H_0$5: There is no relationship between beliefs towards mental illness and levels of mental health literacy.

H_a5: There is a relationship between beliefs towards mental illness and levels of mental health literacy.

Research Question 6. What is the relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy?

$H_0$6: There is no relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

H_a6: There is a relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

Theoretical Framework

The theoretical framework for this study was the health belief model. The health belief model attempts to predict and explain health behaviors by focusing on attitudes and beliefs (Glanz et al., 2015). According to Glanz et al., (2015), the health belief model assumes that people will engage in health behavior if they understand that such action will yield positive outcomes. The conception of the health belief model related to mental health literacy and attitudes and beliefs towards mental illness among young adults in rural and urban Zambia include perceived severity of having a mental illness; perceived susceptibility or vulnerability to mental illness; perceived benefits of seeking help for mental illness; perceived barriers to seeking help for mental illness; cues to action to seek help for mental illness; and self-efficacy or confidence in young adults' ability to seek help.

As further explained in Chapter 2, it was assumed for this study that young adults will take action if they understand their vulnerability to mental illness, the impact on mental illness on their health, and the consequences of not seeking help. It was also assumed that young adults will take action if they understand that the benefits of seeking help outweigh the cost of not seeking help (Glanz et al., 2015).

Nature of the Study

This was a quantitative study and I used binary logistic regression to examine the relationship between attitudes and beliefs about mental illness and health-seeking

behaviors (independent variables) and levels of mental health literacy (dependent variable), and whether such relationship differs in rural and urban Zambian young adults. I also examined whether there was a relationship between demographics such as age, education (higher secondary and tertiary), and location (rural and urban) and levels of mental health literacy.

In this study, I utilized a self-administered questionnaire to examine the relationship between levels of mental health literacy among young adults and their attitudes and beliefs towards mental illness and health-seeking behaviors. English is the primary language in Zambia, used in all educational facilities. The questionnaire was, therefore, in the English language. Informed consent was obtained from participants, and there was no remuneration for participation. The study surveyed young adults between 18 and 24 years from higher secondary schools and tertiary schools in Mongu, a rural area, and Lusaka, an urban area in Zambia. Participants were advised that participation in the study was voluntary and that they could withdraw at any time. Data analysis was performed using the statistical package for the social sciences (SPSS).

Definitions

Mental health, is defined as a state of well-being where individuals realize their own ability to cope with normal stresses of life, work productively, and contribute to the community, (WHO, 2017).

Mental disorders, is defined as a broad range of problems characterized by a combination of abnormal thoughts, emotions, behavior, and relationships with others, (WHO, 2018a). Also referred to as mental illness for this study.

Health literacy, refers to the ability to communicate, process and understand basic health information and services to make appropriate health decisions*,* (Human Health Services, 2010). For this study, it refers to young adults' ability to communicate and understand health information and make appropriate health decisions regarding treatment seeking options.

Mental health literacy, is defined as knowledge and beliefs that aid the recognition, management and prevention of mental disorders (Jorm et al., 1997). According to Jorm et al., (2017), this knowledge includes the ability to recognize different psychological disorders, knowledge, and beliefs about risks and causes, knowledge, and beliefs about available self-help and professional help, attitudes that facilitate recognition and treatment-seeking habits, and abilities to access information about mental health. For this study, it refers to young adult's knowledge about mental illness or mental disorders and their ability to recognize different psychological disorders, causes, risks and health seeking options.

Help-seeking behavior, is a planned behavior or action involving interaction with a healthcare professional" (Cornally & McCarthy, 2011). Also referred to as health seeking behaviors for mental disorders and young adults' ability to take action in regarding to their mental disorders for this study.

Younger adults, refers to higher secondary school and college or university students between the aged 18 to 24 years for this study.

Culture, is defined as common heritage or a set of beliefs, norms, and values, (Office of the Surgeon General, 2001)

Taboo, is defined as cultural or religious rule prohibiting doing or saying something, (Meriam Webster, n.d.). For this study, it refers to traditional and cultural rules prohibiting discussion of mental disorders.

People perceived to have mental disorders, refers to the mentally ill or people suffering from mental disorders.

Health Education, is learning experiences designed to help individuals and communities to improve their health through knowledge or influencing their attitudes, WHO (2018b).

Assumptions

The core idea of the health belief model is to reduce or avoid a disease condition by explaining and predicting health behaviors. According to Tarkang and Zotor (2015), the primary assumption of the health belief model is that people will act if they feel that their health is threatened and perceive that the benefit of the recommended action would outweigh their determent of following through with their original behavior. Tarkang and Zokor noted that the health belief model is based on the following assumptions:

> Assumption 1: an individual will take a health-related action if they feel that an adverse health condition could be avoided. The health belief model assumes that a health situation could be prevented if the individual knew that such a condition could be avoided through knowledge about the problem and ability to take preventive action.
>
> Assumption 2: an individual will take preventive action if they are confident that the adverse condition will be avoided by taking the recommended action. In this

regard, the individual will need to understand the perceived benefits of practicing the recommended behavior. If the individual fails to see the benefit of the recommended action, it would be difficult for the individual to take the necessary action or maintain it.

Assumption 3: an individual will take a health-related action if they believe that they can successfully take the recommended action. In that regard, the individual must feel confident to take the recommended action. Taking a health-related action would require adequate knowledge and skills in a supportive environment to carry the recommended action.

Tarkang and Zotor (2015) stated that through the health belief model, an individual's motivation to act is analyzed as a function of whether or not one expects to attain a health-related goal. According to Tarkang and Zotor, the health belief model also assumes that the world, as perceived by and individual, determines that individual's action. When applied to this study, it was assumed that young adults would be more receptive to learning about mental illness if they understood that such knowledge could lead to positive mental health outcomes, if they are willing to take preventive actions. It was also assumed that young adults understood that misconceptions about mental illness could be avoided or minimized through higher levels of mental health literacy, which could lead to a reduction of negative attitudes, stereotypes, and stigma attached to mental illness. Further, it was assumed that the questionnaire for study would be completed honestly, based on young adults' own understanding of mental illness. It was also assumed for this study that the selection criteria of young adults aged 18 to 24 years

would be met, and participants would be able to complete the questionnaires themselves with confidentiality.

Scope and Delimitations

The scope for this study was young adults from higher secondary schools and tertiary schools in Mongu, a rural area, and Lusaka, an urban area in Zambia, aged 18 to 24 years. Students below age 18 years and above age 24 years, in Mongu and Lusaka were not considered for the study. Students who were not currently enrolled in higher secondary schools and tertiary schools in Mongu or Lusaka were not admitted to the study. The study did not admit vulnerable students, including those who are mentally challenged.

Limitations

The health belief model was developed to predict health-related behaviors and to develop interventions to change behaviors (Glanz et al., 2015). The study was limited to students aged 18 to 24 years, and the results on the questionnaire discussed in Chapter 4 were self-reported. Because of the misconceptions about mental illness, and the traditional or cultural beliefs that label mental illness as taboo, participant responses could have been influenced by society's negative perceptions of mental illness. Another limitation was that no current data was available to understand current prevalence rates for mental illness in Zambia. The data used were from 2008 reports by MDAC & MHUNZ and by Mwanza et al., (2008), which used pooled data from hospital records. The most current prevalence estimates were provided by Zambia Ministry of Health (2011b).

Significance of the Study

The study focused on young adults aged 18 through 24 years. This age group is important because research has shown that the risk to mental illness in Zambia is higher among the young population due to various factors, including age group structural changes (USAID, 2014), and poverty and diseases (Mwape et al, 2011). Researchers have revealed that rural adolescents are more vulnerable to mental illness than urban adolescents (SAD, n.d.). Zambia is projected to be one of the three youngest countries in the world by 2100 (USAID, 2014). According to USAID, the Zambian population's median age in 2014 was 16.6 years, with about 74% of the people under the age of 30 years. Literacy rates were high among the youth, but rural youth were at a disadvantage because rural youth lacked proper educational tools and financial resources compared to urban youth. Further USAID reported that 62% of the rural adolescents had never had Internet access in 2014, compared to 34% of urban adolescents.

In their study, Mwape et al. (2011) affirmed that predisposing factors such as poverty, HIV/AIDS, and unemployment makes the Zambian youth population vulnerable to mental illness. The most impacted segmented of the Zambian community are children due to higher levels of poverty and HIV/AIDS (Carvalho & Nsemukila, 2013), and lower levels of mental health literacy (SAD, n.d.). Mental Health Literacy as a strategy for addressing mental illness among young adults can improve both individual and population health (Lam, 2014; Reavley et al., 2014), particularly in rural young adults. Mental health literacy can reduce the prevalence of mental illness by addressing perceived barriers to treatment and increasing knowledge about perceived symptoms

(Sanchez et al., 2016). Higher mental health literacy levels could also bring about positive social impact by facilitating early recognition that could help in early treatment and management of mental illness in Zambia.

It has been reported that more than 70% of psychiatric disorders that lead to morbidity risks in adulthood start during childhood and adolescent years (Abidi, 2017). Ministry of Health (2011b) reported that 20% to 30% of the Zambian population suffers from mental disorders. About 74% of Zambians are under the age of 30 years (USAID, 2014), meaning that a large segment of the impacted Zambian population is the youth. According to Abidi, youth with mental disorders could face challenges in their homes, schools, communities, or inter-personal relationships. Therefore, investment in young adults' mental wellness is critical because as stated by Abidi, such a venture could lead to positive social change including community wealth development, and prevention in human rights violations.

Social Change

Findings for this study could bring about positive social change by changing attitudes towards mental disorders and removing the stigma attached to mental illness. Such change could be developed by introducing mental health programs that equip young adults with basic mental health knowledge to make informed mental ill-health decisions, prevent or minimize mental ill health through health education, mental health awareness programs and campaigns, and participation in open discussions about mental illness. Such actions could also play a significant role in overcoming the myths and misconceptions about mental illness, influencing positive attitudes towards mental

disorders, and encouraging young adults to change health seeking habits to ensure healthier young adults, communities, and society.

Summary

Myths about mental illness still exist in Zambia. Although there is ample research on mental illness in Zambia, research focusing on the relationship between levels of mental health literacy and beliefs and attitudes towards mental illness, and health seeking behaviors among Zambian young adults aged 18 to 24 years is still lacking. The results of this study could be used as an intervention strategy for mental illness among rural and urban young adults.

Failure to provide adequate mental illness intervention strategies for young adults could negatively impact young adults' productivity in schools, high rates of school dropouts, and unemployment. Lack of effective mental illness intervention strategies for young adults could also negatively impact Zambia's development prospects because young adults constitute a large segment of the Zambian population (USAID, 2014).

Chapter 2 provides literature reviews on the health belief model's history, how the model relates to this study, mental health literacy as an intervention strategy for mental disorders, perceptions of mental disorders in the Zambian rural and urban youth, and whether mental health literacy among young adults could be impacted by age, education, and location (urban and rural). In Chapter 3, the methodology, design, and rationale for the study, including the sample's characteristics, ethical considerations, measures, data collection and analysis, and verification of findings are discussed. In

Chapter 4, the results of the study are presented. Chapter 5 provides an interpretation of the results, conclusions, and suggestions for future research.

Chapter 2: Literature Review

Introduction

Despite global awareness, disparities in addressing mental disorders remain in most parts of Africa (Amuyunzu-Nyamango, 2013; Ehiemua, 2014). In Zambia, researchers have shown a high prevalence of mental disorders due to a pervasive culture of poverty, diseases, and lack of knowledge (Kapungwe et al., 2010). According to Kapungwe et al., mental disorders are still subjected to negative attitudes and stereotypes by most Zambians, leading to perceptions that adversely impact care provision. Researchers have shown that knowledge about mental illness could enable people to make informed decisions about their mental ill health (Zimmerman et al., 2015). In this study I examined whether levels of mental health literacy could influence attitudes and beliefs about mental illness and health seeking behaviors of rural and urban Zambian young adults.

There are numerous studies on mental illness in Zambia (Kapungwe et al., 2011; Kapungwe et al., 2010; MDAC & MHUNZ, 2014). However, there is no research that addresses whether levels of mental health literacy can influence attitudes and beliefs towards mental illness and health seeking behaviors of rural and urban Zambian young adults. Chapter 2 includes literature on the search strategy, the theoretical model used, and incidence rates for mental illness in Zambia. The chapter also includes literature on common forms of mental disorders in Zambia, the impact of mental illness on young adults, mental illness among rural and urban young adults, Zambian culture, and mental health services utilization. The literature on mental illness attitudes is also presented, as

well as literature on mental health literacy as an intervention strategy, mental health literacy and social demographics such as age and education.

Literature Review Search Strategy

Published materials on issues involving mental disorders are in abundance. For studies involving mental illness and its impact on young adults, searches for this study were conducted using electronic databases such as Google, Google Scholar, PsycArticles, PsycINFO, PsycTESTS, and Academic Search Primer from 2010 through 2020. The search items used included health believe model, youth and mental health literacy, adolescence and mental illness, mental health and adolescence, the impact of mental illness in Africa, attitudes and beliefs towards mental disorders in Zambia, the prevalence of mental health disease in Zambia, knowledge about mental illness in Zambia, treatment-seeking habits for mental disorders in Zambia, mental health as a taboo, stigma and mental health literacy and cultural and traditional beliefs about mental illness in Africa.

Health Belief Model

The theoretical framework for this study was the health belief model. The health belief model attempts to predict and explain health behaviors by focusing on attitudes and beliefs (Glanz et al., 2015). The health belief model was developed by public health professionals Hochbaum and Rosenstock in the early 1950s, who sought to explain the failure of peoples' participation in disease prevention and detection programs involving the treatment of tuberculosis (Glanz et al., 2015). According to Glanz et al. (2015), the health belief model has since been used to explore the influence of behavioral responses

to detect potential treatable and curable diseases when suffering from diagnosable conditions. In health-related behaviors, the health belief model focuses on disease prevention and getting well, assuming that specific health actions could prevent diseases for which people believe they may be at risk (Glanz et al., 2015).

The health belief model operates on the assumption that people will take preventive action if they believe that doing so can reduce a likely threat of adverse health risk (Glanz et al., 2015). According to Glanz et al. (2015), the health belief model operates on the following constructs: the belief of the likelihood of getting a disease (perceived susceptibility); the belief of contracting an illness and the impact of leaving it untreated, which could include death, pain, disability, or feeling stigmatized (perceived severity); beliefs about positive benefits that could be achieved by acting, including reducing the risk to a disease and its consequences (perceived benefits); beliefs about obstacles that would prevent an individual from acting (perceived barriers), and cues to action and self-efficacy (cues to action). According to Glanz et al., these cues could either be internal such as feelings that could increase perceived threat, or external such as physician recommendation to take action. Self-efficacy refers to the belief that an individual could successfully execute a recommended health behavior (Glanz et al., 2015).

According to Glanz et al. (2015), using the health belief model as a conceptual framework to explain a change in health-related behaviors and provide guidance in interventions to be used in health promotion research is common. Glanz et al. further noted that the health belief model was built on the cognitive theory's tenets, which

focuses on mental processes such as reasoning and thinking to acquire knowledge. In their study that sought to understand the relationship between education and health, Zimmerman et al. (2015) revealed that education or knowledge is critical to social and economic development and could have a profound impact on population health. According to Zimmerman et al., an individual's health trajectory is an area of population health that could be positively impacted with improved education. Improved education could also lead to opportunities to learn more about health and health related risks, the ability to understand health needs and follow and read instructions, and the ability for individuals to advocate for themselves and families, and efficiently communicate with health care providers (Zimmerman et al., 2015).

When applying the health belief model to this study, the expectation is that higher levels of mental health literacy could influence positive attitudes and beliefs about mental illness among Zambian young adults, particularly young adults in rural areas. This includes an increased awareness about mental illness, imparting young adults with the necessary knowledge to overcome the stigma attached to mental illness, perceive their vulnerability to mental illness and the risks of not seeking help, and recognize available options in managing mental disorders. Mental health literacy could also allow young adults to advocate for themselves by deciding whether to seek professional help. When applying the health belief model to this study, the concepts would include the perceived severity of suffering from mental illness and perceived susceptibility or vulnerability to mental illness. The concepts would also have perceived benefits of seeking professional

help, perceived barriers to seeking professional help, cues to action by seeking professional help, and confidence in young adults' abilities to take action.

In Zambia, like in other African countries, attitudes towards mental illness are influenced by traditional and cultural beliefs (Kapungwe et al., 2010). Thus, traditional beliefs impact how young adults perceive mental illness, which, according to Amuyunzu-Nyamango (2013), is believed to be caused by supernatural powers, leading to stigmatization of the disease and discriminatory attitudes towards the mentally ill. Through mental health literacy awareness programs, knowledge about mental health could reduce the negative perceptions and promote positive attitudes about mental illness in Zambian young adults. Further, young adults could understand the causes of mental illness and available professional treatment options, and the perceived ability to carry out the recommended intervention (self-efficacy).

Utilizing the health belief model, young adults' attitudes towards mental illness could result in positive social outcomes if young adults perceive mental illness as a severe disease. According to Glanz et al. (2015), individuals will act if they feel their health is threatened and perceive the benefit of health promotion activity outweighs the detriment of following through with a behavior. For this study, individual perceptions could include young adults' beliefs about susceptibility to mental illness and the seriousness with which young adults could view mental illness's perceived threat. Potentially, young adults could change perceptions for mental disorders due to higher mental health literacy levels, leading to positive attitudes about mental illness and health-seeking behaviors. In this study, I examined whether there is a relationship between

levels of mental health literacy (measured as low and high) and attitudes and beliefs about mental illness and health seeking behaviors of rural and urban Zambian young adults.

Literature on Mental Illness in Zambia

Zambia Mental Illness Incidence Rates

There is a lack of evidence based official data on the burden of mental health in Zambia. Lack of current data on mental illness is a challenge and makes it difficult to understand incidence rates on mental illness in Zambia. Mwanza et al. (2008) found that Zambia lacked prevalence, incidence, or severity data on mental health conditions in the Ministry of Health's government records, indicating that data presented by the Ministry of Health in 2008 was not evidence based. According to Mwanza et al., pooled prevalence estimates on mental illness were calculated using hospital figures. There were seven general hospitals in Zambia in 2008, with mental health services integrated at the Chainama hospital in Lusaka, the Zambian capital city. Mwanza et al. reported that Chainama hospital figures had a prevalence rate of 3.61 and 1.8 per 10000 population served by the hospital's catchment area for acute psychotic states and schizophrenia, respectively. Mwanza et al. further reported that Chainama hospital psychiatric units admitted about 2667 patients per 100,000 population. The Chainama hospital had 210 beds, excluding the 167-floor beds, which were not officially recognized by the Ministry of Health. According to Mwanza et al., the combined data revealed a significant burden of diseases resulting from mental illness in Zambia in 2008. As of 2008, primary health care units did not have any mental health plans, no adequate psychotropic drugs, and few

employees with sufficient knowledge about mental health to cope with mental health challenges (Mwanza et al., 2008).

Ministry of Health (2011b) reported that 20% to 30% of the Zambian population suffered from mental disorders in 2011. It was not clear where and how the Ministry of Health obtained its data. However, it is important to state that the data presented by Mwanza et al. is consistent with the data provided by MDAC and MHANZ. Mwanza et al. and MDAC and MHANZ relied on data calculated using hospital records.

Common forms of Mental Illness in Zambia

Some of the common types of mental disorders in Zambia include depression, anxiety disorders, acute psychotic episodes, schizophrenia, mood disorders, organic brain syndromes, and alcohol and substance abuse (Ministry of Health, 2011a).

Depression

WHO (2017) defined depression as a common mental disorder characterized by persistent sadness and a loss of interest in activities that one would typically enjoy, often accompanied by an inability to carry out daily activities for at least two weeks. People with depression experience loss of energy, change in appetite, sleeping more or less, anxiety, reduced concentration, indecisiveness, restlessness, feelings of worthlessness, guilt, hopelessness, and thoughts of self-harm or suicide (WHO, 2017). WHO noted that persistent depressive disorder, also known as dysthymia disorders, is another form of depression where episodes of significant and less severe symptoms of depression are displayed for up to two years.

Anxiety Disorders

The National Institute of Mental Health (NIH, 2018a) defined anxiety disorders as feelings of extreme fear or stress that could interfere with daily activities such as job performance, schoolwork, and relationships. Other forms of anxiety disorders include generalized anxiety disorder, panic disorder, and social anxiety disorder. According to NIH, generalized anxiety disorders include feelings of excessive anxiety or worry for several months. People with generalized anxiety disorders display symptoms of restlessness, being easily tired, difficulty concentrating, muscle tension, difficulty controlling worry, and sleep problems.

NIH described panic disorders as feelings of sudden and repeated attacks of intense fear and being out of control during a panic attack. This could include extreme worrying about when the next attack will happen, and fear or avoidance of places where panic attacks have occurred. According to NIH, social anxiety disorders, also known as social phobia, is a fear of social or performance situations where people may feel embarrassed, judged, rejected, or fearful of offending others. NIH reported that people with social anxiety disorders may feel repeated attacks of intense fear, the anxiety of being with other people, self-conscious in front of other people, and worried about feeling humiliated, embarrassed, rejected, or fearful of offending others. This could include fear of being judged by others, fear of making friends, feeling nauseous or blushing, or trembling when around other people (NIH, 2018a).

Schizophrenia

Schizophrenia affects how people think, feel, and behave (NIH, 2018b). According to NIH, people with schizophrenia display a loss of touch with reality and symptoms that could be disabling. NIH reported that positive symptoms of schizophrenia include psychotic behaviors generally not seen in healthy people such as hallucinations, delusions, thought disorders, and movement disorders, including agitated body movements. According to NIH, the negative symptoms of schizophrenia include disruptions to normal emotions and behaviors. NIH further reported that cognitive symptoms for schizophrenia may be subtle in some patients and more severe in some patients, including lack of understanding of information to make decisions, failure to focus or pay attention, and poor working memory (inability to use the information immediately after learning).

Mood Disorders

Mood disorders represent any category of mental illnesses where the underlying problem primarily affects a person's persistent emotional state (NIH, 2018c).

Organic Brain Syndromes

Chandrasekaran et al. (2005) described organic brain syndromes (OBS) as diseases of the brain, including a full range of abnormal mental systems. According to Chandrasekaran et al., OBS does not refer to any specific neurological disease but is a general term used to describe unclassified brain diseases. Given the complexity of the nervous systems, Chandrasekaran et al. noted that OBS covers many illnesses, some of which could be missed in clinical settings. OBS's psychotic symptoms are analogous to

those found in neuropsychological disorders such as dementia, organic personality syndrome, organic hallucinosis, organic affective disorder, organic delusional syndrome and delirium (Elliot, 1987).

Alcohol Disorders

Also known as alcohol use disorder is defined as a chronic relapsing brain disease resulting from severe alcohol overuse (National Institute of Alcoholism, n.d.). According to National Institute of Alcoholism, the alcohol overuse could lead to loss of control over alcohol intake, and a negative emotional state when not using.

Determinants of Mental Disorders in Zambia

Social disadvantages could make people more vulnerable to mental illness (Ehimua, 2014). According to Kleintjes et al. (2010), some of the social obstacles of poverty and diseases are intertwined. Kleintjies et al. stated that people living in poverty were more likely to suffer from mental illness, and those living with pre-existing mental illness were more likely to be trapped in poverty because of decreased everyday function capacity. WHO (2011) also affirmed that poverty is a significant contributor to mental disorders, particularly in low-income countries, due to a lack of mental health services.

Although Zambia is a middle-income country, persistent poverty impacts many Zambians' health status (Carvalho & Nsemukila, 2013). Located in the sub-Saharan region of Africa, Zambia's population was estimated at 14.1 million in 2015, with 60% of that population living in rural areas (United Nations Economic and Social Council [UNESCO], 2015). UNESCO reported that the child population represented 53.4% of the overall country population. The United Nations Development Program (UNDP,

2013) reported that 43.2% of Zambians lived in extreme poverty, with rural areas showing higher concentrations of extreme poverty (57.7%) than urban areas (13.1%). Similarly, the United Nations International Children's Emergency Fund (UNICEF, 2013) reported that the child population was more significant in rural areas than in urban areas (55.4% and 48% respectively).

Researchers have reported that because of HIV/AIDS stigma, poor coping skills and marginalization, people living with HIV face significant mental health issues such as loneliness, depression, anxiety, distress, anger, and low self-efficacy (Wu & Li, 2013). Zambia, like in other African countries, has a high HIV prevalence. In 2016, Zambia had 59 000 new HIV infections, 21000 AIDS related deaths, and 1,200,000 people living with HIV, among whom 65% were accessing antiretroviral therapy (UNAIDS, 2018). UNAIDS (2018) reported that among pregnant women living with HIV, 83% were obtaining treatment or prophylaxis to prevent transmission of HIV to their children, with an estimated 8900 children newly infected with HIV due to mother-to-child transmission. UNICEF (2017) revealed that 14.3% of the Zambian female population between the ages of 15 and 49 years lived with HIV and AIDS in 2017. Given the high prevalence of poverty and HIV in Zambia, the implications for poverty and HIV on mental ill health on the Zambian population, particularly young adults, could be significant.

Impact of Mental Illness on Young Adults

Young adults present a significant challenge in addressing Zambia's mental health problems because they represent a significant Zambian population (USAID, 2014). Of the total 14 million of Zambia's population in 2014, 74% were under 30 years (USAID,

2014). Young adults also face multiple vulnerabilities resulting from social disadvantages such as poverty and diseases (Carvalho & Nsemukila, 2013), and high illiteracy rates, particularly young adults in rural areas (USAID, 2014).

Ministry of Health (2011a) reported that adolescents accounted for a more substantial portion of the Zambian population at about 27% in 2011. In their report, Ministry of Health (2011b) highlighted the burden of diseases, socioeconomic and physical environment, and individual and behavioral circumstances as factors that impacted adolescents' health status. According to Ministry of Health, mental disorders are some of the health problems facing Zambian adolescents, with depression (which includes loneliness, hopelessness, suicidal ideas, and friendship loss) being the most common form of mental health among adolescents in 2011. Ministry of Health (2011a) also reported that in 2011, about 31.9% of students (31.4% male and 31.5% female) reported serious attempts to commit suicide, and 41.4% of the students (40.4% male and 41.7% female) reported having made actual plans to commit suicide.

Ministry of Health (2011a) also reported extreme poverty among adolescents. In 2011, overall poverty was estimated at 67% of the population, and extreme poverty was estimated at 72% (Ministry of Health, 2011a). According to Ministry of Health, poverty could lead to failure to meet basic human needs and nutrition. Poverty could also have a significant impact on adolescents' health, growth, morale, and self-esteem and could also contribute to environments that promote drug use, violence, and sexual abuse, particularly among adolescents (Ministry of Health, 2011a).

Disparities exist regarding literacy levels among the young Zambian population in rural and urban areas. It has been reported that literacy levels impact how individuals function in society and that low literacy skills could affect health and health care (Berkman et al., 2010). This could include an adverse impact on mental ill health and mental health services. USAID (2014) reported that despite a significant increase in access to primary and secondary education, not much impact has been made on Zambia's poor, which has been obliterated by lack of educational facilities such as universities, colleges, and technical schools. Urban Zambian young adults have better access to secondary education and better facilities than rural young adults, who only have access to primary education due to limited availability of secondary schools (USAID, 2014).

UNICEF (2017) revealed that 14.3% of the Zambian female population aged 15 and 49 years lived with HIV and AIDS in 2017. Emerging evidence indicates that people with HIV are prone to anxiety due to the unpredictable nature of AIDS progression and that anxiety or depression is likely to affect adherence to antiretroviral therapy (UNICEF, 2017). Based on these previous findings, the implications for HIV on the Zambian young adults' mental health could be significant.

Mental Illness Among Zambian Rural Young Adults

In this study, I examined whether levels of mental health literacy could influence attitudes and beliefs about mental illness and health seeking behaviors of rural and urban Zambian young adults. Given research findings that have established that levels of mental health literacy could influence attitudes towards mental disorders (Wei et al.,

2015), my research findings could help design programs that meet specific needs of rural and urban young adults in Zambia.

SAD (n.d.) reported that vulnerable rural children are more likely to be impacted by mental disorders than urban children. In a study that examined mental illness among vulnerable populations in Zambian rural areas, SAD found that adolescents in rural areas were far more likely to suffer from mental disorders than those in urban areas. SAD's findings affirmed that rural Zambian children showed higher depression prevalence rates of 23.3% than urban children. According to SAD, suicidal thoughts revealed a prevalence rate of 33.7% among vulnerable rural children, compared to 31.0% among non-vulnerable children. 6.1% of participants presented suffering from post-traumatic stress disorders compared to 2.2% among non-vulnerable children (SAD, n.d.).

There are various factors that determine an individual's mental well-being, including social circumstances and the environments in which people live (WHO, 2012). According to WHO, certain individuals are particularly vulnerable to mental disorders, including those living in poverty, people with chronic health conditions, minorities, and people exposed or displaced by war and conflicts. Ironically, many African countries, Zambia included, fit into one or all of these categories. Zambian rural populations are vulnerable to mental ill health due to extreme poverty (Cavalho & Nsemukila, 2013; Kapungwe et al., 2010). Rural children were more likely to live in extreme poverty than urban children (Carvalho & Nsemukila, 2013). In a study that identified patterns and trends of inequality among Zambian children and women, Carvalho and Nsemukila found that 85% of Zambian children lived in rural areas, 4.6 million children and adolescents

lived in poverty, and 46% of poor children lived in extreme poverty in 2013. Thus, Carvalho and Nsemukila's findings revealed that rural children were more likely to be impacted by extreme poverty than those in urban areas, consistent with the findings by SAD.

Poverty, as an underlying factor for mental illness, could directly or indirectly affect health status and outcome (Griffiths & Thorpe, n.d.). According to Griffiths and Thorpe, major disease outbreaks emerge or persist wherever poverty is widespread because poverty creates conditions that favor the spread of diseases. Poverty also prevents people from obtaining adequate access to prevention and care (Griffiths & Thorpe, n.d.). People living with HIV/AIDS are at a higher risk for mental illness (NIH, 2016), indicating that HIV/AIDS is also an infectious disease of poverty. The Sub-Saharan African region, Zambia included, had approximately 24.7 million people living with HIV in 2013, with Zambia being one of the ten countries with the highest HIV prevalence rates (UNAIDS, 2013). According to Carvalho and Nsemukila, poverty could indirectly lead to increased prevalence rates for HIV/AIDS among rural children through mother to child transmission, absence of appropriate measures, mistaken behavioral attitudes, and lack of knowledge. Because rural children are more vulnerable to high HIV incidences due to poverty (Carvalho & Nsemukila, 2013), rural children are likely to be at higher risk for mental disorders than urban children.

Another causative factor for mental illness is health illiterate (NIH, n.d.). NIH defined health literacy as the degree to which an individual can obtain, process, and understand necessary health information to make appropriate health decisions. Poor

health literacy has also been linked to poor health, higher death risks, more emergency visits, and hospitalization (NIH, n.d.). According to NIH, limited health literacy is due to a lack of education. Similarly, MDAC and MHUNZ reported disparities in the availability of educational facilities and tools in rural and urban Zambia. MDAC and MHUNZ noted that rural children are particularly vulnerable to mental illness due to a lack of knowledge resulting from lack of proper educational facilities. For this study, empowerment through education could include awareness by developing campaigns or programs that educate young adults about mental disorders and help-seeking options.

A lack of information access could be a barrier to improved individual health (Schiavo, 2014). Schiavo stated that information exchange through communication plays a crucial role in fostering behavioral and social changes and facilitating community engagements that focus on preventing and addressing health and social upheavals. In a study that examined how nurses and patients could perceive communication barriers, Norouzinia et al. (2016) found that effective communication skills by health professionals were vital in healthcare provision and promotion of positive outcomes such as decreased anxiety, guilt, pain, and disease symptoms. To improve knowledge about mental disorders, communication through social media tools such as the Internet and Facebook could have a significant impact in educating young adults about mental disorders. However, USAID (2014) reported that urban youth are more likely to have better access to the Internet than rural youth. Zambia has over 8 million mobile phones, and mobile phones are particularly widespread in urban areas (UNDP, 2013). According to UNDP, mobile phones provide access to markets and public knowledge and skills. Thus, the

disparities in information access could be a barrier to improving individual health because it prevents rural youth from receiving evidence-based information to make informed decisions about their health.

The ability to utilize mental health services is another challenge for the Zambian rural population. Rural areas have less access to good quality health care (MDAC & MHUNZ, 2014; USAID, 2014). About 64% of rural youth have never had quality health centers (USAID, 2014), making it a challenge or barrier to mental service utilization. For example, Zambia had only one psychiatric hospital located in Lusaka with smaller units outside Lusaka in 2014 (MDAC & MHUNZ, 2014). According to USAID, rural areas lacked specialized mental health services, and people had to walk several miles to get to health care centers. MDAC and MHUNZ noted that fear and misconceptions regarding health services, long distances to health care facilities, illiteracy, and cultural and religious beliefs presented challenges for rural youth in the utilization of mental service care.

Beliefs about mental disorders could have an impact on young adult's health-seeking behaviors. In Africa, Zambia included, cultural beliefs significantly influence the notions of mental health etiology (Opare-Henaku & Utsey, 2017). In Zambia, like in most African countries, the predominant view is that mental illness is a spiritual illness, and that traditional healing is a vital health delivery system (Opare-Henaku & Utsey, 2017). In a study that examined the role of African traditional medical practitioners in treating mental disorders in Zimbabwe, Kajawu et al. (2015) found that traditional healing used spiritual power by performing rituals to meet patients' expectations. In their

findings, Kajawu et al. stated that traditional healers used distinct treatment methods to meet patients' cultural expectations. According to Kajawu et al., the traditional treatments, in some cases, met expectations that biomedicine did not meet.

Mental Illness Among Zambian Urban Young Adult

Urbanization and social norms could lead to higher risks of mental illness (Silver et al. 2002; Van Os et al. 2010). Maimon et al. (2010) found that factors that could contribute to mental disorders in urban areas include neighborhood collective efficacy and norms that lead to substance use disorders and suicide attempts. Other challenges include building and sustaining supportive social relationships, particularly among people living in disadvantaged areas of the city (Galea et al. 2011). In a study by Silver et al. which analyzed the degree to which residents' mental health depended on living conditions in neighborhood areas, researchers found that a relationship existed between neighborhood disadvantage and higher depression and substance abuse disorder rates. Silver et al. also found an association between neighborhood residential mobility and higher schizophrenia, depression, and substance abuse disorder rates. In a study which examined the relationship between the environment and schizophrenia, Van Os et al. (2010) found an association between psychotic syndromes onset and environmental factors such as early life adversities and growing up in urban environments.

Being one of the largest urban areas in Zambia, Lusaka presents adverse social norms such as alcohol abuse, a factor which, according to Hammerstein et al. (2017), has been linked to neuropsychiatric disorders. In their study, which explored the increasing problem of alcohol abuse among the Zambian population, Hammerstein et al. found an

increase in the prevalence of alcohol use disorders, dependence, and alcohol-related disorders among Zambians aged 15 years and older in Lusaka, reported at 7.9% in male and 1.0% in females. Chanda-Kapata et al. (2016) also found that Zambian urban teenagers were twice likely to be HIV positive than teenagers in rural areas due to HIV risk associated behaviors resulting from alcohol abuse. According to Chanda-Kapata et al., the effect of higher HIV prevalence is higher HIV/AIDS related deaths and elevated poverty levels. Researchers have reported that urban youth impacted by HIV/AIDS related deaths were more likely to be orphaned early or leave home to become street youth to support themselves and their families financially (Tyler et al., 2016).

Socioeconomic status could determine the course of mental disorders, including barriers to treatment (WHO, 2001). 60% of the Zambian population was below the poverty line and 42% at extreme poverty levels in 2015 (World Food Program, 2015). In the World Food Program report, researchers revealed that poverty was prevalent in rural Zambia (about 60%) and urban Zambia (about 15%). Lusaka, despite being an urban area, presents two population segments –the wealthier part of the population and the poorer section of the community. Thus, problems with mental disorders resulting from poverty and lack of resources such as education are still massive in poorer segments of Lusaka urban populations, similar to those experienced in rural areas. Compared to rural areas where utilization of care is heavily impacted due to poverty and lack of mental health services (MDAC & MHUNZ, 2014), poverty as a challenge to use of care impacts mostly the poorer segments of the urban population areas.

Religion could influence attitudes towards mental disorders and treatment seeking habits (Lentz & Majumdar, 2015) in urban areas. Contrary to traditional practices commonly practiced in rural areas, most urban populations have turned to religious leaders for mental ill-health healing (MDAC & MHUNZ, 2014). According to Lentz and Majumdar, preaching is a form of education, provided by religious organizations, to communicate with people of all ages. Because 75% of Zambians consider themselves either Christians or Muslims who attend Church regularly (Lentz & Majumdar, 2015), sermons could reach many Zambians, including young adults. Therefore, it is possible that aspects of religion could influence attitudes towards mental illness, particularly among the youth who attend sermons.

Zambian Culture and Health Seeking Behaviors

Health professionals have described mental illness as a product of a complex interaction among biological, psychological, social, and cultural factors (Office of the Surgeon General, 2001). Defined as commonly shared beliefs, norms, or values (Office of Surgeon General, 2001), culture plays a significant role in addressing Africa's mental health issues. Health professionals have also stated that the meaning of illness is rooted in attitudes and beliefs a culture holds about whether a disease is real and imagined (Surgeon General Office, 2001). Thus, the essence of culture has consequences in seeking treatment, coping with the illness or symptoms, how people seek help, and pathways to therapy and how well people fair with treatment (Office of the Surgeon General, 2001).

At the core of health seeking for most Africans is mental health stigma, which is often considered a barrier. Researchers have reported that social stigma plays an integral part in how Africans conceptualize mental illness, a silent (Amuyunzu-Nyamongo, 2013; Monteiro, 2015) and isolated (Ehiemua, 2014) disease. Although some differences exist in social cultural norms and beliefs, what remains common are beliefs regarding the underlying supernatural causes of mental health, such as the mental health stigma that prevent people from seeking help (Monteiro, 2015). Specifically, Amuyunzu-Nyamongo stated that socially constructed and defined concepts label mental illness as taboo, which attracts stigma. According to Amuyunzu-Nyamongo, stigma yields fear, avoidance, and anger towards the mentally ill. Amuyunzu-Nyamongo also noted that the stigma equates mental illness to a silent epidemic, where the mentally ill hide for fear of discrimination and ostracism from society. For girls, mental illness reduces marriage prospects, and at the government level, mental illness as a silent epidemic, impacts inadequate focus on policies that address mental illness and financial and technical investments (Amuyunzu-Nyamongo, 2013).

The role of culture in shaping African peoples' beliefs about mental illness has been highlighted by various researchers (Atilola, 2013). From the Zambian perspective, researchers have shown that pervasive mental health stigma is a lifelong impediment for the mentally ill and their families, and like other African countries, culture plays a significant role in influencing attitudes towards mental illness (MDAC & MHUNZ, 2014). The influence of culture in shaping attitudes and beliefs towards mental disorders is higher in rural areas than in urban areas due to a lack of understanding of mental

disorders (Amuyunzu-Nyamongo, 2013). In a study by MDAC and MHUNZ, researchers reported that women perceived to have mental illness are beaten by their husbands and in-laws and relatives, and physically and sexually abused by others in their communities. Men perceived to have mental illness are abused and stoned by community members for fear that they are possessed (MDAC & MHUNZ, 2014).

Culture also influences health seeking behaviors. Researchers have reported that traditional healing is common in Zambia and openly advertised as means to solve all life problems, including mental illness (MDAC & MHUNZ, 2014). According to MDAC and MHUNZ, the location of traditional healers is the heart of local communities in Zambia, and because traditional healing is readily available, there is a high demand for traditional healing, particularly in rural areas where mental health services are non-existence. While some traditional healers may offer helpful support, some traditional healers financially exploit desperate people, often without the mentally ill's or their families' consent (MDAC & MHUNZ, 2014).

Religious leaders also play a significant role in providing mental health services and health-seeking behaviors. MDAC and MHUNZ found that Pentecostal and Charismatic churches' rise in 1990 led to an uptick in religious services and treatments. Developed under the influential charismatic wing, Pentecostal and Charismatic churches encourage prayer to cure diseases, including mental illness (MDAC & MHUNZ, 2014). However, some of the charismatic wing religious leaders carry negative attitudes towards mental illness, while some offer paid prayer services to the mentally ill and their family members (MDAC & MHUNZ, 2014).

Researchers have found disparities regarding educational facilities and utilization of care among rural and urban young adults (MDAC & MHUNZ, 2014). According to MDAC and MHUNZ, urban young adults are more likely to have easy access to educational facilities and mental health services than rural areas because educational and mental health facilities are easily accessible in urban areas than rural areas. It has been established that improved knowledge about mental illness could improve mental health outcomes and treatment seeking (Kutcher, 2015).

Mwape et al. (2011) affirmed that vulnerable populations, particularly those in rural areas, are negatively impacted by barriers to mental healthcare facilities compared to those in urban areas in Zambia. According to Mwape et al., mental health provision is centralized at Chainama Hills Hospital, a third level inpatient long-term care facility located in Lusaka. Chainama Hills Hospital is supported by a network of psychiatric units in seven provincial general hospitals and three general psychiatric rehabilitation units. Mwape, et al. stated that rehabilitation centers are not funded by the government and are usually scanty and located far away from patients, making mental services provided at rehabilitation facilities inadequate for vulnerable recipients, including children and young people. According to Mwape et al, primary healthcare units and district hospitals offer fragmented and uncoordinated mental health plans, and medical doctors are not readily available at primary healthcare, particularly in rural areas. Thus, barriers at mental healthcare facilities could have an implication in utilization of care among rural and urban young adults.

Atilola (2013) stated that what constitutes mental illness leans more on orthodox psychiatry knowledge and western views of mental illness, leaving a genuine need to advance mental health care, and to overcome the prejudices and stereotypes labeled against mental illness and the mentally ill in the Sub-Saharan region, including Zambia. While stigmatization of mental illness is complex and challenging to address, Atilola stated that through greater prioritization of treatment and enhanced support and education, attitudes towards mental illness could change among Africans, including Zambians.

Beliefs about Mental illness

In a study by Choudhry et al. (2016), the researchers stated that mental illness beliefs are shaped by personal knowledge about mental illness, including being personally impacted through sickness or interaction with a mentally ill person, and cultural stereotypes. According to Choudhry et al., the cultural context is particularly significant because the interpretation of mental illness varies from culture to culture, and such interpretation could influence help-seeking behaviors of the mentally ill. Within the African context, Zambia included, mental illness is perceived as caused by supernatural forces resulting from spiritual wrath (Choudhry et al., 2016). Similar to other African countries, the mentally ill in Zambia suffer in silence and endure the stressors resulting from mental disorders due to the negative beliefs attached to mental illness (Amuyunzu-Nyamango, 2013). According to Amuyunzu-Nyamango, mental illness is rarely discussed, preventing the mentally ill from seeking professional help for fear of being stigmatized by society. While researchers have highlighted the role of culture in shaping

beliefs about mental illness in Africa (Amuyunzu-Nyamango, 2013), Zambia included, very few studies have explored whether such beliefs differ in rural and urban Zambia, particularly among Zambian young adults.

Attitudes about Mental illness

In Zambia, as is in other African countries, mental illness is associated with negative perceptions, which have led to stigma, discrimination, exclusion, and other forms of abuse of the mentally ill (Kapungwe et al., 2010). Kapungwe et al. found systemic discrimination at government and policy levels for the mentally ill. According to Kapungwe et al., lack of mental health legislation in Zambia contributed to disparaging labels assigned to the mentally ill, with structural disadvantages attributed to inadequate funding. Kapungwe et al. also reported generalized sentiments of blame and condemnation for the mentally ill, fueled by cultural and religious views about disease etiology, which labeled mental illness as a divine punishment for atrocities committed.

MDAC and MHUNZ found violations of the mentally ill's rights in government facilities and family settings due to a lack of knowledge and misconceptions about mental illness. According to MDAC and MHUNZ, negative perceptions resulting in isolation, poor health, poverty, and violence are prevalent in the Zambian society, leading to adverse outcomes such as stigma, dependency, social exclusion, and barriers. MDAC and MHUNZ reported that mental health services in Zambia are almost non-existence, governed by an outdated legal framework that calls for detention of the mentally ill in psychiatric facilities without any legal basis or safeguards. According to MDAC and MHUNZ, the mentally ill are also denied basic needs such as mental health professionals'

assessment, legal representation, or involvement of the mentally ill or those involved in their health status.

Further, MDAC and MHUNZ reported that families carry the burden of looking after the mentally ill, with minimal support from communities because of negative perceptions of mental illness and the stigma that label the mentally ill as mad. Thus, the burden of supporting the mentally ill is significant not only on families but also on the mentally ill because the mentally ill have to cope and struggle with being chained and tied up to prevent them from hurting themselves.

Kampungwe et al. (2011) explored attitudes towards mental illness among health care providers in Lusaka district (urban area) and Mumbwa district (rural area) and found negative attitudes towards the mentally ill in Lusaka and Mumbwa primary care providers. Kapungwe et al. affirmed that mental illness' negativeness is common in both rural and urban Zambian communities among health care professionals.

When comparing literacy levels among young adults in urban and rural areas, the Lusaka district had higher literacy rates among youth at 95.0% compared to Mongu at 82.0% in 2014 (USAIDS, 2014). The rural and urban divide regarding literacy levels was due to a lack of educational institutions and financial resources, particularly for the rural young population (USAIDS, 2014). According to WHO (2018b), education can increase knowledge or influence attitudes towards mental health.

Previous researchers have reported that access to care could impact the way people perceive mental disorders (Alfredsson et al., 2017). In assessing attitudes towards mental health and integrating mental services in primary care settings in Cambodia,

Alfredsson et al. reported that improving mental health provisions in health care settings could improve the treatment gap for mental, neurological, and substance use disorders. In a study by Mwape et al. (2011), researchers also a lack of access to care in rural areas due to a lack of mental health facilities. These findings indicate disparities in access to care among rural and urban populations.

Mental Health Literacy

Mental health literacy is a relatively new concept that has emerged as a useful strategy in the promotion and early identification of mental disorders (Wei et al., 2015). According to Wei et al. (2015), the term mental health literacy originated from the term health literacy, a term developed by Peter Simmonds in 1994. The definition of the term health literacy has since evolved and redefined in different ways. The Institute of Medicine (2004) defined the term health literacy as the extent to which individuals have the capacity to obtain, process and understand basic health information to make informed health decisions. World Health Organization (2007) later defined health literacy as the cognitive and social skills that determine individuals' motivation and ability to gain access to, understand, and use information in ways that promote and maintain good health. Kanj and Mitic (2009) defined health literacy as the degree to which people can obtain, communicate, process, and communicate health information to make informed health decisions. In 2010, health literacy was defined as the degree to which an individual can "obtain, communicate, process, and understand basic health information and services to make appropriate health decisions." (Human Health Services, 2010, p. 1252).

In 1997, Jorm et al. applied the concept of health literacy and defined mental health literacy as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (para. 1). Thus, Jorm et al. expanded the term health literacy to include the ability to recognize different psychological disorders, knowledge, and beliefs about risks and causes, knowledge and beliefs about self-help available, professional help available, attitudes that facilitate recognition and treatment seeking habits and abilities to access information about mental health. In 2000, Jorm stated that unlike cancer and other public health diseases, knowledge about mental disorders had not received adequate attention, and therefore, the need to educate society about mental illness and its impact on individual health, using mental health literacy as a health promotion strategy.

Mental health literacy programs could improve knowledge about mental disorders, including reducing stigma and influencing positive attitudes about mental illness (Jorm et al., 1997; Lam, 2014; Wei et al., 2015). Specifically, Jorm et al. (1997) stated that mental illness knowledge provides a basic understanding of treatment options and beliefs about causes. In their study, Kanj and Mitic found that the level of one's literacy could impact one's ability to act and control their health and that of families and communities. Lam found a relationship between mental health literacy and mental health status, particularly depression, among young people. It has also been reported that labeling symptoms as mental illness is associated with identifying the need to ask professional help and greater endorsement of seeking help from professionals (Altweck et al., 2015; Yu et al., 2015). According to Wei et al., improved knowledge about mental

health and mental disorders can improve early identification of mental disorders, mental health outcomes, and treatment-seeking habits.

Despite an abundance of literature on mental health literacy as a strategy in promoting mental health services, there is little research examining whether enhancing mental health literacy among young adults in Zambia could be used as an intervention for mental ill-health. Knowledge about mental disorders in Zambia is poor (Kapungwe et al., 2010), which underscores the need for mental health literacy promotion programs to address the disparities in mental health services among Zambian young adults.

Within the sub-Saharan region, which includes Zambia, implementation of mental health services initiatives and intervention programs has been a challenge due to lack of mental health literacy (Kapungwe et al., 2011; Kapungwe et al., 2010). Lack of mental health literacy has also been a key driver of some of the attitudes and beliefs attributed to mental illness, including stigmatization (Kapungwe et al., 2011; Kapungwe et al., 2010). Kapungwe et al. (2011) reported a lack of awareness, education programs, and mental health providers' training. According to Kapungwe et al. (2011), improving the recognition, diagnosis, and treatment of mental disorders, as well as promoting the realization of ideals enshrined in progressive health reforms, is critical in the implementation of mental health programs. Such recognition could be achieved by developing more effective awareness-raising, training, and education programs among health care providers, and an increased consensus, commitment, and political will within the government to make funding for mental health programs a priority (Kapungwe et al., 2011).

Atilola (2014) also reported that constrained resources for mental health services in the Sub-Saharan region, including Zambia, underscore the need for mental health literacy as a potential additional mental health resource. Within the Sub-Saharan area, mental illness is mostly attributed to witchcraft and spiritual possession of demons (Atilola, 2014). Knowledge about mental illness is poor and requires public enlightenment (Atilola, 2014). According to Atilola, overcoming mental illness ignorance would require public mental health enlightenment as a panacea to poor orthodox mental health utilization.

Disparities exist in levels of mental health literacy among the rural and urban populations (SAD, n.d., MDAC & MHUNZ, 2014). In their studies, SAD and MDAC and MHUNZ reported that prevalence of mental disorders is higher in rural areas than urban areas due to lower levels of mental health literacy. Mental health literacy could impact treatment seeking habits and utilization of health care services (Wei et al., 2015), suggesting that rural young adults are more likely to be disadvantaged regarding usage of care compared to urban young adults. Children and adolescents in rural areas are the most impacted population due to poverty and diseases (Carvalho & Nsemukila, 2013) and high illiterate rates (USAID, 2014). Literacy levels could be used to understand differences in education, with studies indicating that Lusaka had the highest literacy levels than Mongu in 2014 (Central Statistics Office [CSO], 2014a). Kapungwe et al. (2010) affirmed that negative attitudes towards mental illness are pervasiveness among Zambians (urban and rural).

Mental Health Literacy in Rural and Urban Zambia

Knaak et al. (2017) reported that lack of awareness and unconscious biases that acknowledge hidden beliefs and attitudes that underlie stigmatized behaviors contribute to the negative attitudes labeled towards mental disorders. According to Knaak et al., most people may not identify mental illnesses or have the skills or knowledge to identify mental disorders because of lack of awareness. It is through education and experience of learning about mental disorders, that healthcare professionals could become aware of the subtle and unintended ways in which preexisting beliefs may be contributing to stigmatized attitudes (Knaak et al., 2017).

Researchers have reported that there is a pervasiveness of negative perceptions about mental illness among Zambians (Kapungwe et al., 2010), including healthcare professionals (Kapungwe et al., 2011), and government institutions (MDAC & MHUNZ, 2014). These findings indicate that the negative perceptions towards mental illness and the mentally ill are not isolated to rural areas alone but systematic. It could be argued that the negative perceptions labeled towards mental disorders are significantly more in rural areas than in urban areas due to myths and misconceptions fueled by traditional beliefs. However, findings by MDAC & MHUNZ which highlighted human rights violation for the mentally ill, and Kapungwe et al. (2011) which examined attitudes of health professionals towards mental illness in urban and rural Zambia, indicated that underlying beliefs fueled by myths and misconceptions still influenced attitudes towards mental illness in urban areas, only perhaps in a more subtle way.

MDAC and MHUNZ reported that mental illness is still a taboo topic both in urban and rural areas of Zambia. Mental health patients who end up at Chainama hospital, the main psychiatric hospital in the country, are still treated like prisoners and chained and tied to their beds (MDAC & MHUNZ, 2014). Such treatment is no different from the treatment given to the mentally ill in rural areas, who are stoned in some cases (MDAC & MHUNZ, 2014). The fact that the Zambian government has failed to acknowledge the magnitude of the problem by implementing effective mental health policies, both in urban and rural areas indicate that mental health care is not a priority in Zambia, and still carries a stigma. Such actions underscore the need to recognize mental health as a public health issue, one that requires attention not only by the Zambian government but society as a whole, to overcome the widespread ignorance attached to mental disorders.

The youth are the most impacted segment of the population, in regard to mental disorders, because of the developmental challenges they face (Kutcher et al., 2016). Poverty plays a significant role in the rural and urban divide regarding education, utilization of care, and age (Carvalho & Nsemukila, 2013). Because of poverty, the rural population lacks the educational tools and mental health resources to equip them with the necessary knowledge to understand mental health disorders. Such vulnerabilities also indicate that the rural communities, with children and adolescents being the most impacted, have limited education (MDAC & MHUNZ, 2014) and lower levels of mental health literacy (SAD, n.d.; MDAC & MHUNZ, 2014) compared to the urban population.

Age and Mental Health Literacy

A lot of studies examining associations between age and mental health literacy in developed countries have been conducted (Farrer et al., 2008; Hadjimina & Furnham, 2017; Marcus & Westra, 2012). Farrer et al. revealed that recognition for depression and schizophrenia was lower in older adults (70+ years) than in young adults (18-24 years). In the study, Farrer et al. examined differences in various mental health literacy elements in adults aged 18 years and older by investigating age differences in depression and schizophrenia recognition and risk factors associated with treatments and sources of help. Farrer et al. reported differences in recognition of mental disorders across the life span, which included recognizing knowledge and beliefs about mental health problems, their risk factors, treatments, and sources of help. Farrer et al. also reported that age group was an important target to raise knowledge and awareness of mental health disorders because such knowledge could help facilitate early intervention for mental disorders and designing of more specific age-appropriate interventions.

Hadjimina and Furnham (2017) explored the relationship between age and gender and mental health literacy and sought to determine whether gender and age significantly affected participants' ability to recognize anxiety disorders. In their findings, Hadjimina and Furnharn reported gender differences with females demonstrating higher mental health literacy than men, and younger group (18-29 years) showing better mental health literacy than older groups. Similar to Farrer et al., Hadjimina and Furnharn revealed that younger participants were more likely to recognize mental disorders compared to older participants. Marcus and Westra (2012) reported different findings. Marcus and Westra

conducted a comparative study, which explored the mental health literacy of young adults (18 to 24 years of age) and older adults (25 to 64 years) in a Canadian national survey. In their findings, Marcus and Westra reported that both age groups demonstrated adequate mental health literacy. It is possible that Marcus and Westra's findings reflected a changing public perception about mental illness, indicating that both younger and older populations are becoming more aware and more educated about the etiology of mental illness and its impact on human health.

Education and Mental Health Literacy

The concept of mental health literacy was developed from the health literacy domain, which was formed from the observation that low functional literacy had an impact on poor health outcomes (Kutcher et al., 2016), and that health literacy was an important skill in improving one's health (Van der Heide et al., 2013). According to Kutcher et al., the definition of mental health literacy has expanded beyond its original focus on mental illness and risks to include educational initiatives for health promotion. Because adolescents constitute a more significant segment of the Zambian population and are more vulnerable to mental disorders (USAID, 2014), learning and adopting health-related knowledge during adolescent years could lead to improved health decision-making and health literacy among adolescents (Broder et al., 2017), which could lead to positive social change for Zambians. Learning about mental disorders during adolescence could be a critical component of mental health literacy initiatives because adolescence is a formative period where students develop decision-making skills, including decisions relating to health (Kutcher et al., 2016). According to Kutcher et al.,

school health services could play a critical role in promoting mental health literacy programs.

WHO (2018b) defined health education as a combination of learning experiences designed to improve human health through knowledge or by influencing attitudes. According to Zimmerman et al. (2015), health education could impart various benefits that could improve mental health status for young adults and contribute to human capital. For example, health education could be incorporated into school curriculums offered in school settings or through health literacy campaigns designed to prevent and manage diseases. Through health education, knowledge about mental disorders could be accrued at individual or community levels, or in a broader society cultural context such as schools (Zimmerman et al., 2015). Knowledge about mental disorders could also promote health outcomes by allowing recipients, such as young adults, the ability to navigate the healthcare system, and understand disparities in personal health behaviors, and exposure to chronic stress (Zimmerman et al., 2015).

For mental health literacy programs to be effective, the designed programs should be content specific, developmentally appropriate, and effectively integrated into existing social and organizational structures, such as school curriculums (Kutcher et al., 2016). Thus, education plays a vital role when conducting research that focuses on young adults because it allows the development of sustainable mental health information sessions that could be integrated into school curriculums and mental health literacy campaigns that target young adults in rural and urban secondary and tertiary schools. However, it is vital

to understand the rural and urban divide regarding educational levels for the promotional and education materials to be content specific.

Researchers have reported disparities in rural and urban educational levels, particularly among young adults. Specifically, in a 2010 census, the Zambian government reported that the literacy rate for Mongu district (rural area) in 2010 was at 82.0% CSO (2014a), compared to the literacy rate for Lusaka district (urban area), which was at 95.0% among individuals aged 15 years and older CSO (2014b). For Mongu district, about 36.1% of those aged 15 years and older had completed secondary school, and 13.5% had completed tertiary school (CSO, 2014a). Secondary school completion for those aged 15 years and older for Lusaka district was reported at 47.1% and 26.5% for tertiary school (CSO, 2014b). USAIDS (2014) reported steady progress in the Zambian government's efforts to improve access to basic education among youth but noted that challenges continue to exist regarding the quality of education being offered, high dropout rates at secondary school levels, and limited access to tertiary education particularly in rural areas.

Significance

Although various studies on mental disorders have been conducted in Zambia, there are very few studies, if any, that have focused on mental health literacy as a strategy in treating mental illness among Zambian young adults. In a country where traditional beliefs play a significant role in influencing attitudes towards mental illness, research on mental health literacy in addressing mental health needs could determine whether knowledge about mental health could reduce mental health prevalent rates among young

adults and change attitudes towards mental disorders. Higher levels of mental health literacy could potentially change attitudes towards mental illness and influence help-seeking habits (Altweck et al., 2015).

The focus on young adults is particularly important because young adults and adolescents account for a large segment of the Zambian population (USAID, 2014; Ministry of Health, 2011b). The majority of young adults live in rural areas (SAD, n.d.). 75% of Zambia's population was below the age of 30 years, with 28% between the ages of 15 to 29 years in 2014 (USAID, 2014). USAID estimated the annual young population growth rate from 2.4% to 3% in 2014. According to USAID, the youth cohort in Zambia is expected to continue to grow. Zambia is projected to have the highest fertility rate in the SADC sub-region by 2020-2025 (USAID, 2014). These demographic dynamics underscore the importance of focusing on the younger population's health needs because lack of focus in young people's health and education limits their ability to reach their full productivity potential and contribution to economic development (United Nations Children Fund [UNCF], 2015).

The focus on Zambian young adult is also important because adolescent and young adult years are the most vulnerable years for mental illness (Loureiro et al., 2013). According to Loureiro et al., mental health literacy is essential, particularly during adolescence and early adulthood years, because it is the peak period for the onset of mental disorders. Loureiro et al. further stated that people with mental disorders have their first episode before the age of 18 because the adolescent and early adulthood years are characterized by significant changes and transitions that could profoundly impact a

young person's life, including social, occupation, physical, and emotional growth. According to Loureiro et al., the negative impact could have long-term repercussions for a person's personal and professional career.

Although prevalence of mental disorders is higher among young people, most young people do not seek help or postpone seeking help due to the negative perceptions attached to mental disorders (Loureiro et al., 2013). The negative perceptions include structural barriers such as the stigma and discrimination attached to mental disorders, fear of lack of confidentiality and anonymity, and lack of knowledge about mental disorders and the availability of help (Loureiro et al., 2013). According to Loureiro et al., the barriers related to limited mental health literacy could lead to a delay or lack of seeking help.

In Zambia, the young population in rural areas is at a higher risk for mental illness than urban young adults due to a lack of knowledge about mental illness (MDAC & MHUNZ, 2014). SAD (2010) reported that mental health prevalence, particularly depression, is higher among vulnerable rural Zambian children than urban Zambian children due to a lack of knowledge about mental illness. Urban adolescents have better access to the Internet compared to rural adolescents (USAID, 2014). According to USAID (2014), about 64% of rural youth had never had access to the Internet in 2014, compared to 34% of urban youth. In an age where young adults are turning more to social media such as Facebook or the Internet as a source for information (USAID, 2014), addressing disparities in accessing educational tools could have a significant impact in

communicating health behaviors such as mental health awareness, thereby overcoming the challenge or barrier for mental service utilization for rural young population.

Summary

There is increased awareness of mental illness globally, but disparities in addressing issues related to mental illness remain a challenge in Zambia. In Zambia, like in most African countries, mental illness remains a silent epidemic where the disease is characterized as a taboo subject (Amuyunzu-Naymongo, 2013) due to disparaging perceptions about mental disorders. The young populations, particularly those in rural areas, are the most impacted segment of the Zambian population due to lack of knowledge (SAD, n.d) and resources to address mental illness (MDAC & MHUNZ, 2014). Introducing programs that address mental illness and educate the young population about mental illness could reduce the negative perceptions towards mental illness and positively influence health-seeking habits. A lack of knowledge about mental illness could lead to continued misconceptions about mental illness, fear and stigma of the mentally ill, mistrust for conventional mental health treatment, and increased mental health equity disparities.

Chapter 3 addressed the research methodology, including the study design, participant selection, sample size and selection, instruments used, data collection methods, and data analysis.

Chapter 3: Research Method

Introduction

The purpose of the study was to investigate the relationship between levels of mental health literacy and attitudes and beliefs towards mental illness among young adults in rural and urban Zambia. Chapter 3 therefore described the study methodology, including the research design and rationale, methodology, procedure, instrumentation and operationalization of constructs, and ethical considerations.

Research Design and Rationale

This research question is: Is there a relationship between levels of mental health literacy and attitudes and beliefs towards mental illness among Zambian young adults? The dependent variable is levels of mental health literacy, and the independent variables are attitudes and beliefs towards mental illness and health-seeking behaviors. A cross-sectional descriptive quantitative study design was used to predict the relationship between levels of mental health literacy and attitudes and beliefs towards mental illness and health-seeking behaviors. A quantitative cross-sectional study was appropriate for this study because I sought to determine whether levels of mental health literacy among rural and urban young adults differed, and whether there was an association between levels of mental health literacy and attitudes and beliefs towards mental illness and health seeking behaviors.

Research Setting

I conducted the study in four schools: two higher secondary schools and two tertiary schools in Lusaka district and Mongu district, representing an urban and rural

setting, respectively. Mongu district lies in the Western Province of Zambia outside the railway line. Western Province has seven districts, with Mongu being the capital city of Western Province. No current data is available on the population of Mongu district. 2010 census data provided by CSO (2014a) estimated a population of 179,585. According to CSO (2014a), approximately 127,261 of the population lived in rural Mongu and 52,324 of the population lived in urban Mongu in 2010.

Figure 1**.** Western Province Profile

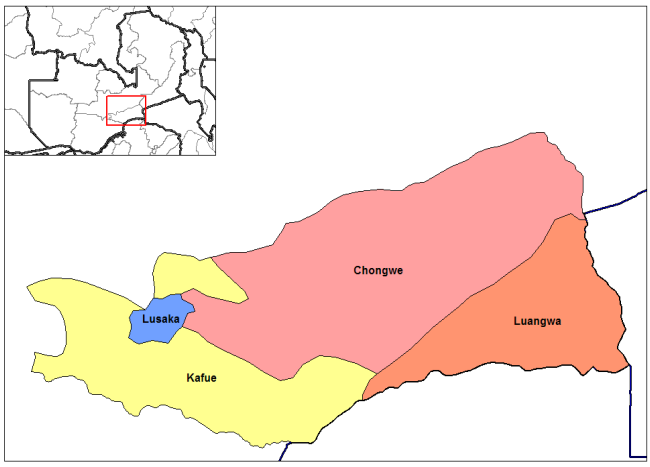
From UNDP: Millennium Development Goals (zm.one.un.org/download/file/fid/131/)

Population age structure for the youth aged 15 to 24 years accounted for about 19.6% of Western Province's total population of 902,974 in 2010 (CSO, 2014a). The youth literacy for Western Province was at 82.0%, with Mongu district recording the second-highest literacy rate at 90.5%.

Lusaka province is divided into four districts: Chongwe, Kafue, Luangwa, and Lusaka (CSO, 2014b). Lusaka district is the capital of Zambia. Lusaka district had a total urban population of 1,747,152 in 2010 (CSO, 2014b). The youth population of 15 to 24 years was 22.4% of the Lusaka province's total population of 2,191,225 (CSO, 2014b). According to CSO (2014b), the youth literacy rate for Lusaka Province was 96.1%, with Lusaka district recording the highest youth literacy rate at 96.9% in 2010.

Figure 2. Lusaka Province Profile

Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Lusaka_districts.png)



Mongu district and Lusaka district were purposively selected as research settings for this study because both sites have sufficient study populations with characteristics that satisfy the study requirements.

The Study Population

The study participants were Zambian young adults aged 18 to 24 years currently attending higher secondary school or tertiary schools in Mongu and Lusaka districts.

Zambia's education system is divided into lower secondary school and higher secondary school (UNESCO Institute of Statistics, 2013). The entry level for the lower secondary education is 14 years and lasts for two years, and the entry level for higher secondary education is 16 years and lasts for three years (UNESCO Institute of Statistics, 2013). According to the UNESCO Institute of Statistics, entry level to tertiary or post-secondary school entry level is 19 years of age. Thus, the target population was appropriate for this study because ages 18 and 24 years lie within the school ages for higher secondary and postsecondary schools in Zambia.

Sampling and Sampling Procedures

The age category for the participants was 18 to 24 years of age. Higher secondary school students and tertiary students were students who were enrolled in higher secondary schools and tertiary schools in Mongu and Lusaka districts. Data selection was from two higher secondary schools (one in Mongu rural and one in Lusaka urban) and two tertiary schools (one in Mongu rural and one in Lusaka urban). The selection criteria for higher secondary schools and tertiary schools was done by random selection from the educational facilities in Mongu rural and Lusaka urban accessed online from the Zambia Ministry of Education.

WHO (2017a) stated that quantitative studies should aim to quantify well defined variables, and that estimates of what the proportions of the target population are likely to be (informed guess or results from previous surveys) could be used to calculate the size of the sample. For example, when the target population is young adults in Mongu and Lusaka districts, the proportion of young adults in the selected areas could be estimated

using previous survey results. For this study, the rough estimate for Mongu and Lusaka districts' total target population was 284,500 for young adults aged 18 to 24 years. This estimate was based on 2010 census data (CSO, 2014a), which reported the total youth population for ages 15 to 24 years in Mongu district to be 177,999, of which half (88,500) was estimated to be between the ages of 18 to 24 years for this study. For Lusaka district, the total youth population for ages 15 to 24 years in 2010 was 392,000 (CSO (2014b), of which half (196,000) was estimated to be between the ages of 18 to 24 years for this study.

Fertman and Allensworth (2010) stated that three techniques must be used to obtain results that represent health-related perceptions, behaviors, and needs of the target population. According to Fertman and Allensworth, the methods involve selecting correct people to represent the target population, selecting a large sample size, and ensuring that the return rate is high enough to reach at least 50% of the sample size. For this study, the educational facilities represent the target population of young adults between the ages of 18 to 24 years old.

Cluster sampling was used to select participants from secondary schools and colleges in Mongu district (rural area) and Lusaka district (urban area). Simple random selection was used to select higher secondary and tertiary schools in Mongu and Lusaka districts, from which data was collected. Targeted recruitment was used. Prior to collecting data, permission was requested from school administrators to distribute flyers to students 18 to 24 years in higher secondary and tertiary schools. Those willing to participate in the study were requested to meet with the researcher in privacy to complete

the questionnaire. I was on-site to distribute the flyers and administer the sampling procedure.

Inclusion Criteria

All students attending higher secondary or tertiary schools in Mongu or Lusaka aged 18 and 24 years were eligible to participate in the study. This age group was selected because entry-level to tertiary or postsecondary school is 19 years of age (UNESCO Institute of Statistics, 2013) and those aged 18 years were captured in higher secondary schools. Further, Fertman and Allensworth stated that school settings are pivotal in developing health promotion programs because young people spend the majority of their lives in school settings. Thus, the focus was on young adults who were attending higher secondary schools and tertiary schools. The study also included those who consented to participate in the study.

Exclusion Criteria

The study excluded students who were physically/mentally unwell (determined clinically). The study also excluded students who were younger than 18 and those who were older than 24. Additionally, the study excluded those who did not consent to participate in the study as participation was voluntary.

Sample Size

Figure 3. Sample Size Calculation

Population survey or descriptive study
For simple random sampling, leave design effect and clusters equal to 1.

Population size:	284500
Expected frequency:	50 %
Acceptable Margin of Error:	5 %
Design effect:	1.0
Clusters:	2

Confidence Level	Cluster Size	Total Sample
80%	82	164
90%	135	270
95%	192	384
97%	235	470
99%	331	662
99.9%	540	1080
99.99%	753	1506

The sample size was determined using EPINFO version 7.2, with an estimated 2010 population of youths aged between 18 to 24 years of 88,500 in Mongu district and 196,000 in Lusaka district, to a total of 284,500 as shown in figure 3 above. The expected frequency of low level of mental health literacy was estimated at 50% with an acceptable error margin of 5%. With 2 clusters, the estimated sample size at 95% confidence level was 192 in each group for a total of 384. Adding an additional 25% contingency of 90, the sample size was therefore 384 + 90 = 480. The estimated total sample size was then 480, of which 240 was Low levels of mental health literacy, and 240 was high level of mental health literacy. The proportionate distribution entailed 1:2 ratio spread 1 in Mongu district, and 2 in Lusaka district.

Procedure: Data Collection

Data Collection Tools

I used a self-administered questionnaire to identify levels of mental health literacy and sociodemographic factors, attitudes and beliefs towards mental illness, and health-seeking habits. The survey questionnaire was developed for this study and was reviewed by Public Health experts for content and test construction to ensure that the intended constructs were measured. The questionnaire did not identify participants by name. Instead, each questionnaire was coded with an identification number. The survey questionnaire had six sets of questions specifically designed to measure demographics in subsection A, family history of mental illness (FMI) in subsection B, knowledge about mental illness (KMI) in subsection C, beliefs about mental illness (BMI) in subsection D, attitudes about mental health (AMI) in subsection E, and health-seeking behaviors (HSB) in subsection F.

Data Collection Technique

The sample population consisted of young men and women aged 18 to 24 years of age in higher secondary and tertiary schools in Mongu (rural area) and Lusaka (urban area) districts. I used the list of schools from the Ministry of Education, which is available online, to randomly select two schools from Lusaka district: one higher secondary and one tertiary school. I also randomly selected two schools from Mongu district: one higher secondary and one tertiary school. One school was also randomly selected from Lusaka district to conduct a pilot study. Before recruiting participants, I called and scheduled meetings with school administrators in all the schools to inform

them about the study and seek permission to recruit participants in their schools. Approvals from Walden University Institutional Review Board and the University of Zambia (UNZA) Biomedical Research Ethics Committees were provided to school administrators and arrangements were made for me to distribute the flyers to eligible participants during the students' free time. I distributed a total of 155 flyers to tertiary schools in Lusaka district to conduct the pilot study. I distributed a total of 300 flyers in Lusaka district to two schools and a total of 300 flyers in Mongu district to two schools to recruit participants for the study.

I used targeted recruitment, and I was on site at all times to distribute flyers and to avoid return bias. Participants who responded to flyers met with me privately and were given an informed consent describing the study, inclusion, and excluding criteria, before completing the questionnaire. Participants were also informed that no signatures would be required on the consent form because implied consent would be used. Instead, by agreeing to participate in the study, they had given their consent. Participants were also informed that their responses would be confidential and that there would be no identifiers such as names on the questionnaires. The questionnaires were coded with identification numbers. Further, participants were informed that participation was voluntary and that they were free to withdraw from the study at any time without penalty.

Instrumentation and Operationalization of Constructs

The questionnaire developed for this study was reviewed by Public Health experts for content and test construction to ensure that the intended constructs were measured. Some of the questions to assess attitudes and beliefs towards mental illness and health-

seeking habits were adopted from a study by Bener and Ghulom (2010) to measure knowledge, beliefs, and attitudes about mental illness in the Arab society. The questionnaire was obtained from the Walden University Library, PsycTests database. Permission to reproduce the test content is granted by the authors for non-commercial research and educational purposes, without seeking written permission. The questions from Bener and Ghulom were modified to answer the research questions for this study.

Pretest for Data Collection Tools

Pretesting the data collecting tool was done at a tertiary school in Lusaka, a different site from the actual study sites, to avoid getting preconceived answers. The purpose of pretesting the tool was to assess the data collection tool's validity and reliability, determine the time required to administer the tool, and evaluate the respondents' understanding of the instruments. Initially, 55 flyers were distributed, and 44 participants responded. After testing the tool, edits were made to the questionnaire. 100 flyers were distributed again to retest the tool, and 75 individuals responded.

Validity and Reliability

In this study, using a tool that has been validated and checked by the experts in public health to determine if the tool elicits the responses on the variables to be measured ensured validity. Thus, the contents of the test items were assessed by a panel of experts in public health, who ensured that items used measured the intended material to ensure validity. According to Davis and Smith (2005), content validity can be used to establish a test's validity. The tool was piloted at a tertiary school in Lusaka district. Cronbach's test was used to test the reliability and validity of the tool. Based on Cronbach's initial test

score, the questionnaire was slightly modified to ensure that the questions measured the same constructs. The tool was retested, and the Cronbach's test for the second pilot study produced a 93% validity score, which was appropriate for this study. The pretested tool was administered to all the respondents in rural and urban research sites, hence upholding equivalence reliability (Polit & Beck 2013).

Description of the Dependent variable

Binary Logistic Regression analysis was performed to determine whether there is a relationship between levels of mental health literacy and young adult's attitudes and beliefs about mental illness and their health-seeking behaviors. The logistic regression model was chosen for this study due to the study's categorical dependent variable: levels of mental health literacy, which was measured as high and low. Participants were asked to answer “yes” or “no” and don’t’ know, to the statement: “Depression, alcohol abuse, stress, and Marijuana overuse all fall under the category of mental illness and can be diagnosed by health professionals just like any other health condition". The "yes" response categorized as "1" represented a high level of mental health literacy, and the "no" response categorized as "2" and "don't know" response categorized as "3", represented a low level of mental health literacy. The "no" and "don't" know responses were collapsed into one category in SPSS. Therefore, the SPSS coding was 1 = yes (high) and 2 = No (Low).

Description of the Independent Variables

A questionnaire developed for this study was constructed with ”yes", "no" and "don't know" responses. The "yes" response was categorized as "1", the "no" response

categorized as "2" and the "don't know" response categorized as "3". The independent variables included age, gender, location, education, family history of participants, knowledge, attitudes, and beliefs about mental illness, and health-seeking behaviors.

Family History

Family history consisted of two variables. A single statement measured each variable. Family history was a nominal scale of measurement, where respondents were assessed “yes”, “no” or “don’t know” to each statement. The SPSS coding was “1” for “yes”, “2” for “no” and “3” for “don’t know”. The two statements were as follows: (a) I have had a close family member or friend suffer from some kind of mental illness, and (b) I would be ashamed if people knew someone in my family has been diagnosed with mental illness [Coded FMI1 and FMI2].

Knowledge about Mental Illness

Knowledge about mental Illness (KMI) consisted of four variables. A single statement measured each variable. Participants' knowledge about mental illness was a nominal scale of measurement, where respondents were assessed by stating "yes", "no" or "don't know" to each statement. The SPSS coding was "1" for "yes", "2" for "no" and "3" for "don't know". The four statements were as follows: (a) depression is some form of mental illness, (b) stress in daily life could lead to mental illness, (c) marijuana overuse could result in mental illness, (d) Alcohol abuse could result in mental illness (Coded KMI1, KMI2, . . . KMI4).

Beliefs About Mental Illness

The beliefs about mental illness (BMI) consisted of five variables. A single statement measured each variable. Participants' beliefs towards mental illness was a nominal scale of measurement, where respondents were assessed by stating “yes”, “no” or “don’t know” to each statement. The SPSS coding was “1” for “yes”, “2” for “no” and “3” for “don’t know”. The five statements were as follows: (a) mental illness is not infectious, (b) people with mental illness are not dangerous, (c) People with mental illness experience stigma and discrimination due to their mental health problems, (d) mental illness is not due to possession by evil spirits, and (e) mental illness is not a punishment from God [Coded: BMI1, BMI2…….,BMI5].

Attitudes Toward Mental Illness

The attitudes towards mental illness (AMI) consisted of four variables. A single statement measured each variable. Participants' attitude towards mental illness was a nominal scale of measurement, where respondents were assessed by stating "yes", "no" or "don't know" to each statement. The SPSS coding was "1" for "yes", "2" for "no" and "3" for "don't know". The four statements were as follows: (a) I am not afraid to have a conversation with someone with mental illness, (b) I am willing to maintain a friendship with someone with mental illness, (c) I am willing to share a room with someone who has a mental illness, and (d) I am not ashamed to mention someone in my family who has a mental illness. [Coded AMI1, AMI2, ……AMI4].

Health Seeking Behaviors

The health-seeking behavior (HSB) variable consisted of three variables. A single statement measured each variable. Participants' health-seeking behaviors were a nominal scale of measurement, where respondents were assessed by stating "yes", "no" or "don't know" to each statement. The SPSS coding was "1" for "yes", "2" for "no" and "3" for "don't know". The three statements were as follows: (a) I would visit a psychiatrist if I knew I had an emotional problem, (b) I would not visit a traditional healer if I knew I had emotional problems, and (c) the stigma and discrimination towards people with mental illness will not prevent me from seeking help. [Coded: HSB1, HSB2 and HSB3].

Sociodemographic

The age variable was coded, 18 to 20 = 1, 21 to 24=2; education (type of school attending) was coded, higher secondary school = 1, tertiary school = 2; and location/District was coded, rural (Mongu) = 1 and urban (Lusaka) = 2.

Table 1 shows how the dependent variable and the independent variables were categorized and measured in SPSS.

Table 1

Variable Measurement using SPSS

Type of Variable	**Description**	**Abbreviation**	**How Measured in SPSS**	
Dependent Variable				
Mental Health Literacy	Depression, alcohol abuse, stress and marijuana are diagnosable diseases just like any other health condition	MHL	Yes (**High**)	1
			No/Don't Know (**Low**)	2

Independent Variables				
Sociodemographic Characteristics				
Age	18 to 24 years		18 to 20	1
			21 to 24	2
Gender	Male/Female		Male	1
			Female	2
Education	Type of School Attending		Higher Seco School	1
			Tertiary	2
Location/District	Rural/Urban		Mongu (Rural)	1
			Lusaka (Urban)	2
Family History				
Family history of mental illness (FMI)	Have close family/friend with Mental illness	FMI1	Yes	1
			No	2
			Don't Know	3
	Not ashamed if family member has mental illness	FMI2	Yes	1
			No	2
			Don't Know	3
Knowledge About Mental Illness				
Knowledge about mental illness (KMI)	Depression is mental illness	KMI1	Yes	1
			No	2
			Don't Know	3
	Stress is mental illness	KMI2	Yes	1
			No	2
			Don't Know	3
	Marijuana overdose can cause mental illness	KMI3	Yes	1
			No	2
			Don't Know	3
	Alcohol abuse can cause mental illness	KMI4	Yes	1
			No	2
			Don't Know	3
Beliefs About Mental Illness				
	Mental illness not infectious	BMI1	Yes	1
			No	2

Beliefs about mental illness (BMI)			Don't Know	3
	People with mental illness not dangerous	BMI2	Yes	1
			No	2
			Don't Know	3
	Mental illness could result in stigma/discrimination	BMI3	Yes	1
			No	2
			Don't Know	3
	Mental illness not due to evil spirits	BMI4	Yes	1
			No	2
			Don't Know	3
	Mental illness not punishment from God	BMI5	Yes	1
			No	2
			Don't Know	3
Attitudes About Mental Illness				
Attitudes about mental illness (AMI)	Not afraid to have conversation with mentally ill	AMI1	Yes	1
			No	2
			Don't Know	3
	Willing to maintain friendship with mentally ill	AMI2	Yes	1
			No	2
			Don't Know	3
	Willing to share a room with mentally ill	AMI3	Yes	1
			No	2
			Don't Know	3
	Not ashamed to mention someone who has mental illness	AMI4	Yes	1
			No	2
			Don't Know	3
Health Seeking Behaviors				
Health Seeking Behaviors (HSB)	Will visit psychiatrist if I knew I had emotional problem	HSB1	Yes	1
			No	2
			Don't Know	3
	Will not visit traditional healer if I knew had emotion problem	HSB2	Yes	1
			No	2
			Don't Know	3
	Stigma/discrimination towards mental illness will not prevent me from seeking help	HSB3	Yes	1
			No	2
			Don't Know	3

Analysis Plan

Research questions

The first question examined whether there is a relationship between socioeconomic demographics such as education (higher secondary/tertiary), location (rural/urban), gender, age, and levels of mental health literacy. The second question examined whether there is a relationship between family history and levels of mental health literacy. The third question examined whether there is a relationship between knowledge about mental illness and levels of mental health literacy. The fourth question examined whether there is a relationship between attitudes about mental illness and levels of mental health literacy. The fifth question examined whether there is a relationship between beliefs about mental illness and levels of mental health literacy. The sixth question examined whether there is a relationship between health-seeking behaviors and levels of mental health literacy. The research questions were as follows:

Research Question 1: What is the relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy?

$H_0$1: There is no relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

H_a1: There is a relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

Research Question 2: What is the relationship between family history and levels of mental health literacy?

$H_0$2: There is no relationship between family history and levels of mental health literacy.

H_a2: There is a relationship between family history and levels of mental health literacy.

Research Question 3. What is the relationship between knowledge of mental illness and levels of mental health literacy?

$H_0$3: There is no relationship between knowledge of mental illness and levels of mental health literacy.

H_a3: There is a relationship between knowledge of mental illness and levels of mental health literacy.

Research Question 4. What is the relationship between attitudes towards mental illness and levels of mental health literacy?

$H_0$4: There is no relationship between attitudes towards mental illness and levels of mental health literacy.

H_a4: There is a relationship between attitudes towards mental illness and levels of mental health literacy.

Research Question 5. What is the relationship between beliefs towards mental illness and levels of mental health literacy?

$H_0$5: There is no relationship between beliefs towards mental illness and levels of mental health literacy.

H_a5: There is a relationship between beliefs towards mental illness and levels of mental health literacy.

Research Question 6. What is the relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy?

H_06: There is no relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

H_a6: There is a relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

Statistical analysis

For research question 1: level of mental health literacy was quantified, and prevalence calculated against the total population of youths aged between 18 to 24 years in the study population. The quantification was also done by age, education (higher secondary school/tertiary), location/district attending school (rural/urban), and gender.

For research question 2: the family history was compared between low and high levels of mental health literacy.

For research question 3: the knowledge towards mental illness was compared between low and high levels of mental health literacy.

For research question 4: the attitudes towards mental illness was compared between low and high levels of mental health literacy.

For research question 5: the beliefs towards mental illness was compared between low and high levels of mental health literacy.

For research question 6: health-seeking behavior was compared between low and high level of mental health literacy.

Descriptive statistics using SPSS grouped and summarized the data to give meaning to the responses. Frequency distribution of responses according to yes, no, and don't know responses was used to determine family, knowledge, attitudes, beliefs as well as health-seeking behaviors among the young adults. Logistic regression modeling was used to model the low versus high levels of MHL by socio-demographic characteristics, family, knowledge, attitudes, beliefs, and health-seeking behaviors.

Ethical and Cultural Considerations

I obtained approval from Walden University's Institutional Review Board (IRB) before conducting the study in Zambia. I also obtained permission from the UNZA Biomedical Research Ethics Committee to conduct the study. Further, the National Research Authority of Zambia was informed about the study before proceeding with data collection.

To recruit participants, I scheduled meetings with school administrators by phone to inform them about the study and requested permission to recruit participants in their schools. I also requested permission to use school premises to meet privately with participants. I used targeted recruitment, which entailed distributing flyers to eligible participants during their free time. The flyers had a brief description of the study and my contact information to allow participants to contact me and make arrangements to meet me privately.

Respondents were given a consent form, which included a brief description of the study, inclusion and exclusion criteria, voluntary nature of the study, sample questions from the questionnaire, benefits of the study, confidentiality of the study, the right to withdraw, and contact information should questions arise. Implied consent was used, and I explained to participants that by participating in the study, they had given their consent. No signatures were required on the consent form, and participants were informed that identifiers such as names and schools would not be on the questionnaires. Participants were informed that the files and data would remain confidential, only available to the researcher. The data has been placed on a CD drive, accessible with a key code only available to the researcher. The CD drive is kept in a locked cabinet with a key, only accessible to the researcher, and will be kept for five years. After five years, the CD drive will be destroyed.

Summary

The study sought to determine the extent to which levels of mental health literacy could influence attitudes and beliefs towards mental illness, and health-seeking behaviors among young adults in Zambian rural and urban areas. In this chapter, I provided the research methodology, including sampling procedures, inclusion and exclusion criteria, data collection procedures, description of the population, and data analysis. Binary Logistic Regression was used for the study, and data were analyzed using SPSS Statistical Software. The research findings and a summary of the data obtained from the study are discussed in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this study was to explore the relationship between levels of mental health literacy and attitudes and beliefs about mental illness among Zambian young adults aged 18 to 24 years. The study also examined whether age, gender, education (higher secondary/tertiary school), and location (rural/urban) predicated levels of mental health literacy. This chapter describes the results of the cross-sectional quantitative study. The chapter also describes the data collection process, the statistical analysis used to test the hypothesis for the research questions, and the findings of the tests.

I used primary data from higher secondary and tertiary schools in Lusaka urban and Mongu rural districts in Zambia. I used a pretested questionnaire to collect the data (Appendix C). I conducted a pilot study in Lusaka urban district before collecting data and used Cronbach's alpha to measure the instrument's reliability. The dependent variable was levels of mental health literacy, and the independent variables were family history, knowledge about mental illness, beliefs about mental illness, attitudes about mental illness, health seeking behaviors, and socio-demographic factors such as age, gender, location/district (rural/urban) and education (higher secondary/tertiary). The questions and hypotheses that guided this study were as follows:

Research Question 1: What is the relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy?

$H_0$1: There is no relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

H_a1: There is a relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

Research Question 2**:** What is the relationship between family history and levels of mental health literacy?

$H_0$2: There is no relationship between family history and levels of mental health literacy.

H_a2: There is a relationship between family history and levels of mental health literacy.

Research Question 3. What is the relationship between knowledge of mental illness and levels of mental health literacy?

$H_0$3: There is no relationship between knowledge of mental illness and levels of mental health literacy.

H_a3: There is a relationship between knowledge of mental illness and levels of mental health literacy.

Research Question 4. What is the relationship between attitudes towards mental illness and levels of mental health literacy?

$H_0$4: There is no relationship between attitudes towards mental illness and levels of mental health literacy.

H_a4: There is a relationship between attitudes towards mental illness and levels of mental health literacy.

Research Question 5. What is the relationship between beliefs towards mental illness and levels of mental health literacy?

H_05: There is no relationship between beliefs towards mental illness and levels of mental health literacy.

H_a5: There is a relationship between beliefs towards mental illness and levels of mental health literacy.

Research Question 6. What is the relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy?

H_06: There is no relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

H_a6: There is a relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

Pilot Study

A pilot study was conducted in Lusaka at tertiary schools from October 28, 2019 to November 29, 2019, after obtaining full clearance from Walden University IRB and the University of Zambia (UNZA) Biomedical Research Committee. The pilot study was conducted to measure the internal consistency and reliability of the tests, as well as to determine whether the questions were easy to understand, whether there were any problems with the way the questions were constructed, and the time it would take to complete the questionnaire by each participant. Prior to conducting the study,

arrangements were made by phone to meet the school administrators to provide details about the study and seek permission to recruit participants. I used targeted recruitment and distributed flyers to eligible participants.

Initially, 55 flyers were distributed from October 28 to November 8, 2019. I made some arrangements to meet in private with participants. Participants were informed that participation was voluntary and that there was complete privacy of the information provided. Implied consent was used, and participants were informed that they were giving their consent to participate in the study by agreeing to complete the questionnaire. Overall, 44 participants responded and agreed to take part in the study. The pilot study comprised young adults 18-20 years old (n = 18) and 21-24 years old (n = 26). Girls were (n = 22), and boys were (n = 22).

Pilot Study Analysis

The data were analyzed using IBM Statistical Package for Social Sciences (SPSS) Statistics, Version 25. The dependent variable was levels of mental health literacy measured as "1" for high level of mental health literacy and "2" for low level of mental health literacy. The independent variables were age, gender, education (higher secondary/tertiary), location(rural/urban), family history, knowledge about mental illness, attitudes about mental illness, beliefs about mental illness, and health-seeking behaviors. I used binary logistic regression using SPSS to analyze the data.

Validity and Reliability

I used Cronbach's coefficient α to assess the internal consistency of the 23 items included in the questionnaire on all the 44 respondents. According to Gilem (2002, as cited

in Namdeo & Rout, 2016), the closer the Cronbach's alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale. The extent of variability on the 23 items resulted in a score of .674. This implied an internally consistence variance of 67%.

After carefully analyzing the pilot study results, I discovered that the question measuring the dependent variable was positively phrased while some questions measuring the independent variables were negatively phrased. To ensure that the questionnaire measured the same constructs, I made slight modifications to ensure that all questions were positively phrased. I conducted another pilot study with the modified questionnaire at another tertiary school from November 18, 2019 to November 29, 2019. Out of the 100 distributed flyers, a total of 75 participants responded. The pilot study comprised young adults 18-20 years old (n = 33) and 21-24 years old (n = 42). Girls were (n = 33), and boys were (n = 42).

For the overall reliability, the Cronbach's test on the 23 items on all the 75 respondents produced a score of .933 as shown in figure 4 below. This implied a true internally consistence variance of 93%. The results indicated the satisfactory level of construct validity and internal consistency of the modified questionnaire.

Figure 4. Pilot Study Results

Reliability Statistics

Cronbach's Alpha	N of Items
.933	23

Pilot Study Results and Conclusion

All participants answered the research questions in the second pilot study accurately, indicating that the research questions were clear and easy to understand. Each participant took approximately 5 to 10 minutes to complete the questionnaire. The result of the reliability measure on the modified questionnaire was good. Based on that, I found the questionnaire appropriate to use for this study.

Data Collection

I obtained conditional IRB approval from Walden University on April 17, 2019 to start Zambia's research clearance process. In March 2020, I started the process to obtain clearance from the UNZA Biomedical Research Committee by uploading a copy of the proposal, the conditional IRB approval from Walden, and all recruitment materials, including the email to contact applicants (**Appendix A**), the flyer (**Appendix B**) and the questionnaire (**Appendix C**) on their IRB link. Approval from UNZA was granted on August 29, 2019. Following clearance for data collection from UNZA, a copy of my proposal and UNZA ethical clearance were forwarded to the National Health Research Authority of Zambia (NHRA), an entity that records all research conducted in Zambia. I received clearance to start data collection from NHRA on September 19, 2019. I obtained full IRB clearance from Walden University on October 22, 2019. As stated above, the pilot study was conducted from October 28, 2019 to November 29, 2019. Data for the study was collected in Mongu from January 6, 2020 to January 31, 2020 and the data from Lusaka was collected from February 3, 2020 to February 20, 2020.

I used a self-administered questionnaire approved by the Walden University Institutional Review Board to collect data**.** As noted in Chapter 3, data was collected from higher secondary schools and tertiary schools in Mongu rural and Lusaka urban districts. Simple random selection was used to select two higher secondary schools (one from Mongu and one from Lusaka) and two tertiary schools (one from Mongu and one from Lusaka) from the list of educational facilities in Mongu and Lusaka. The list was obtained from the Zambia Ministry of Education website. Before data collection, I contacted school administrators at the research sites by email (Appendix A) and phone and met them in person to discuss the study and make arrangements to collect data at their schools. I used targeted recruitment and distributed flyers to eligible participants in higher secondary and tertiary schools. The flyers had my contact information**.** Those willing to participate were requested to contact me directly to make the necessary arrangements to meet with me privately on school premises. Participants were informed that participation was voluntary and that there was complete privacy of the information provided. Participants were also informed that consent was implied and that by completing the questionnaire, they were giving their consent to participate in the study.

Response Rate

EPINFO version 7.2 was used to determine the sample size of 480. Six hundred flyers were distributed, 300 to two schools in Lusaka district (one higher secondary school and one tertiary school), and 300 to two schools in Mongu (one higher secondary school and one tertiary school). A total of 476 individuals responded and completed the questionnaires. Of the 476, there were two incomplete assessments because participants

did not report their age. The two incomplete questionnaires were not included in the analysis. The total number of properly completed questionnaires was, therefore, *N*=474.

Changes in Data Collection and Analysis Process

One of the minor changes which was not reported in chapter 3 was that after ethical clearance from the UNZA Biomedical Research Committee, my proposal was forwarded to the NHRA. The NHRA is an entity that keeps track and records all research conducted in Zambia. After the study was recorded, the NHRA issued a letter for me to start data collection.

To ensure that all the main analysis variables were answered, I added another question to examine the family history characteristics. I also split the question that examined attitudes and beliefs about mental illness into two. These two modifications increased my research questions to six, which was not reflected in chapter 3. These were all minor changes that did not affect the outcome of the study.

Data Analysis

The sample size of 480 was determined using EPINFO Version 7.2. However, the actual sample size obtained was 474. Six research questions with the corresponding hypothesis guided the study. This was a quantitative study using primary data from Lusaka urban and Mongu rural districts in Zambia. Binary logistic regression was used to understand the relationship between the different variables and levels of mental health literacy. The categorical dependent variable was level of mental health literacy, which was measured as high and low. Participants' level of mental health literacy was assessed by asking them to answer "yes", "no" or don't' know, to the statement: "Depression,

alcohol abuse, stress and marijuana overuse all fall under the category of mental illness and can be diagnosed by health professionals just like any other health condition." The "yes" response categorized as "1" represented a high level of mental health literacy, and the "no" response categorized as "2" and "don't know" response categorized as "3", represented a low level of mental health literacy. The "no" and "don't" know responses were collapsed into one category in SPSS to represent a low level of mental health literacy.

Binary logistic regression analysis was used to understand how socio-demographics were related to levels of mental health literacy. The sociodemographic variables, measured as categorical variables, included age, gender, education/type of school (higher secondary/tertiary), and location/district (Mongu rural/Lusaka urban). Binary logistic regression was also used to understand the relationship between the independent variables and levels of mental health literacy. The independent variables included family history, knowledge about mental illness, beliefs about mental illness, attitudes about mental illness, and health-seeking behaviors, which were measured as nominal variables. Each variable was measured by a single statement and participants were asked to state “yes”, “no” or “don’t know” to each statement. The SPSS coding was “1” for “yes”, “2” for “no” and “3” for “don’t know”.

Sociodemographic

To assess whether there was a relationship between age, gender, education (higher secondary/tertiary), and location/district attending school (rural/urban), I attempted to answer the following questions:

Research Question 1: What is the relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy?

$H_0$1: There is no relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

H_a1: There is a relationship between education (higher secondary school/tertiary), location/district (rural/urban), gender, age, and levels of mental health literacy.

Binary logistic regression was used to determine whether four predictors – age, gender, education (higher secondary/tertiary) and location/district (rural/urban) could predict levels of mental health literacy.

Table 2 below shows characteristics for sociodemographic and crude odds ratios (*OR*) of the predictors. The regression analysis comparing the frequency distribution for socio-demographics and levels of mental health literacy show that among the 474 young adults who participated in the study, 313 (66%) young adults could be classified as having high level of mental health literacy, compared to only 161 (34%) who identified as having low level of mental health literacy. Out of the 66% who reported high level of mental health literacy, 162 (51%) were those aged 18 to 20 years, compared to 151 (48%) who were aged 21 to 24 years old. Of the total 34% who reported low level of mental health literacy, 78 (48%) were 18 to 20 years old, compared 83 (51%) who were 21 to 24 years old. The majority young adults with high level of mental health literacy were female at (n = 221) compared to men at (n = 92). The majority of female participants

also reported low level of mental health literacy at (*n* = 114) compared to men at *(n* = 47). Most of the participants who reported a high level of mental health literacy were from Mongu rural district at (*n* = 204) compared to Lusaka urban district at (*n* = 109). Participants from tertiary schools reported a high level of mental health literacy at (*n* = 228) compared to participants from higher secondary schools at (*n* = 85).

On the other hand, higher secondary school (reference tertiary school) reported some form of relationship with level of mental health literacy (*OR = 1.47*) compared to age, gender, and district of attending school.

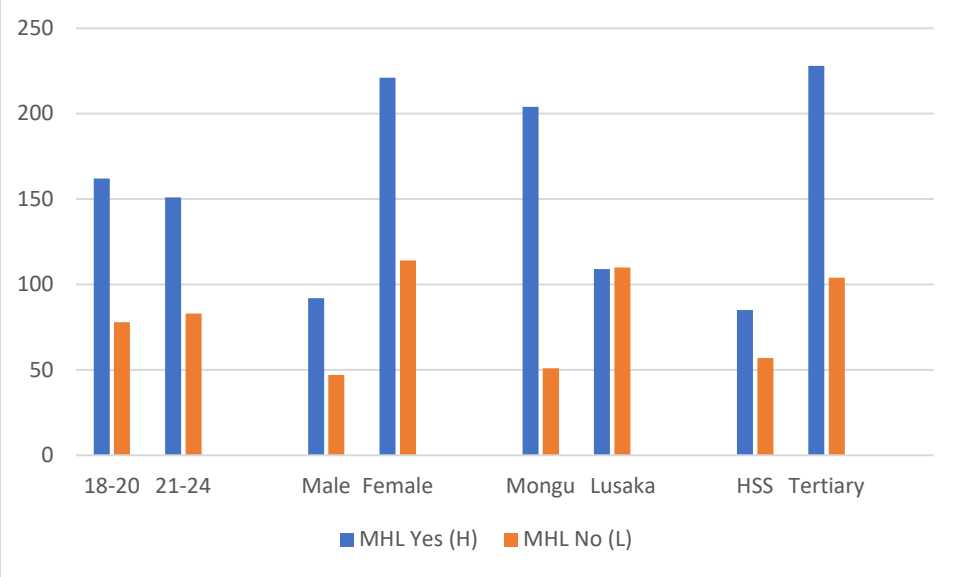
Table 2

Frequency Distribution and Crude Ratios for Socio-demographic Characteristics

	Total		Levels of MHL				Crude Odds ratio	95% Confidence Intervals
			No (Low)		Yes (High)			
Characteristics	**n**	**%**	**N**	**%**	**n**	**%**		
Total	474	100%	161	34.0%	313	66.0%		
Age								
21– 24 years	234	49.4%	83	51.6%	151	48.2%	Reference	Reference
18 – 20 years	240	50.6%	78	48.4%	162	51.8%	0.88	0.60 – 1.28
Gender								
Female	335	70.7%	114	70.8%	221	70.6%	Reference	Reference
Male	139	29.3%	47	29.2%	92	29.4%	0.99	0.65 – 1.50
District Attending								
Lusaka (Urban)	219	46.2%	110	68.3%	109	34.8%	Reference	Reference
Mongu (Rural)	255	53.8%	51	31.7%	204	65.2%	0.25	0.17 – 0.37
Type of School								
Tertiary	332	70.0%	104	64.6%	228	72.8%	Reference	Reference
Higher Secondary	142	30.0%	57	35.4%	85	27.2%	1.47	0.98 – 2.21

Figure 5 shows that, overall, young adults reported a high level of mental health literacy. More participants from Mongu rural reported a high level of mental health literacy compared to participants from Lusaka urban. Further, participants aged 18 to 20 years reported a high level of mental health literacy, with most participants with a high level of mental health literacy from tertiary schools.

Figure 5. Response characteristics of Sociodemographic Factors



Family History

To assess the relationship between family history and levels of mental health literacy, I attempted to answer the following questions:

Research Question 2**:** What is the relationship between family history and levels of mental health literacy?

$H_0$2: There is no relationship between family history and levels of mental health literacy.

H_a2: There is a relationship between family history and levels of mental health literacy.

Participants' family history was assessed by asking them to answer "yes", "no" and "don't know" to two questions: (a) I have a family member or friend suffering from mental illness, and (b) I will not be ashamed if people knew I have a family member suffering from mental illness. A "yes" or "no" question was asked to identify participants' level of mental health literacy, with "yes" indicating a high level of mental health literacy and "no" indicating a low level of mental health literacy.

Table 3 below shows the family history characteristics of study participants. Out of the 313 (66%) participants who identified as having a high level of mental health literacy, 170 (54%) participants identified as having no family member or friend suffering from mental illness compared to 101 (32%) who identified as having a family member or friend with mental illness and 42 (13%) who did not know. Of those who identified as having a low level of mental health literacy, 103 (64%) participants identified as having no family member or friend with mental illness, compared to only 32 (19%) who did have a family member or friend and 26 (16%) who did not know.

On the other hand, of the participants who identified as having high level of mental health literacy, there were 233 (74%) participants who indicated that they would not be ashamed if people knew they had a family member suffering from mental illness, compared to only 64 (20%) who indicated that they would be ashamed and 16 (5%) who did not know. Of those who identified as having a low level of mental health literacy,

there were 101 (62%) who indicated that they would not be ashamed, compared to 40 (24%) who indicated they would be ashamed and 20 (12%) who did not know.

Table 3

Frequency Distribution of Family History Characteristics

	Total		Levels of MHL			
			No (Low)		Yes (High)	
Characteristics	**N**	**%**	**n**	**%**	**n**	**%**
Total	474	100%	161	34.0%	313	66.0%
Have family/Friend with MI						
Yes	133	28.1%	32	19.9%	101	32.3%
No	273	57.6%	103	64.0%	170	54.3%
Don't Know	68	14.3%	26	16.1%	42	13.4%
Not ashamed if People Knew family Member has MI						
Yes	104	21.9%	40	24.8%	64	20.4%
No	334	70.5%	101	62.7%	233	74.4%
Don't Know	36	7.6%	20	12.4%	16	5.1%

Table 4 below reports the crude odd ratios (*OR*) and adjusted odds ratio (*AOR*) for the family history characteristics after adjusting for age, gender, education and location. Young adults who had no family member or friend who has mental illness (reference – have family member or friend) was statistically significant at 95% (AOR: 1.71; 95% CI: 1.04 – 2.81), indicating some type of relationship between level of mental health literacy and family history. Participants who stated that they did not know was not statistically significant at 95% (AOR: 1.46; 95% CI: 074 – 2.84). The question of whether young adults would not be ashamed if people knew they had a family member suffering from mental illness (reference – yes, not ashamed) was not statistically significant at the 95% (AOR: 1.27; 95% CI: 0.76 – 2.11), and those who indicated that they did not know was

not statistically significant at 95% (AOR: 2.147; 95% CI: 0.96 – 4,82), indicating no association in that category.

Table 4

Crude and Adjusted Odds Ratios for Family History

Characteristics	Crude Odds ratio	95% Confidence Intervals	Adjusted Odds ratio	95% Confidence Intervals
Have family/Friend with MI				
Yes	Reference	Reference	Reference	Reference
No	**1.91**	**1.20 - 3.05**	**1.71**	**1.04 - 2.81**
Don't Know	1.95	1.04 – 3.67	1.46	0.74 – 2.84
Not ashamed if People Knew family Member has MI				
Yes	Reference	Reference	Reference	Reference
No	0.69	0.44 - 1.10	1.27	0.76 – 2.11
Don't Know	0.73	0.30 – 1.79	2.14	0.96 – 4.82

Knowledge about Mental Illness

To determine whether there was a relationship between levels of mental health literacy and knowledge about mental illness, I attempted to answer the following question:

Research Question 3. What is the relationship between knowledge of mental illness and levels of mental health literacy?

$H_0$3: There is no relationship between knowledge of mental illness and levels of mental health literacy.

H_a3: There is a relationship between knowledge of mental illness and levels of mental health literacy.

Table 5 below reports the characteristics of knowledge about mental illness. Participants' knowledge for mental illness was assessed by asking them to answer "yes", "no" and "don't know" to four questions to identify depression, stress, marijuana overuse, and alcohol abuse as some form of mental illness: (a) depression is some form of mental illness, (b) stress can lead to mental illness, (c) marijuana overuse can lead to mental illness, and (d) alcohol abuse can lead to mental illness. Participants were asked to answer "yes" or "no" to a question to identify their level of mental health literacy, with "yes" indicating a high level of mental health literacy and "no" indicating a low level of mental health literacy.

Of the 313 (66%) who identified as having a high level of mental health literacy, there were 261 (83%) respondents who identified depression as some form of mental illness, compared to only 34 (10%) who did not and 18 (5%) who did not know. 279 (89%) respondents indicated that stress could lead to mental illness, compared to 26 (8%) who did not recognize stress as some form of mental illness, and 8 (2%) who did not know. 294 (93%) respondents identified marijuana overuse as something that could lead to mental illness, compared to 15 (4%) who did not and 4 (1%) who did not know. 256 (81%) respondents identified alcohol abuse as something that could lead to mental illness, compared to only 44 (13%) who did not and 14 (4%) who did not know.

Of the 161 (34%) respondents who identified as having a low level of mental health literacy, 89 (55%) identified depression as some form of mental illness, compared to 46 (28%) who did not and 26 (16%) who did not know. 106 (65%) respondents identified stress as some form of mental illness compared to 33 (20%) who did not and 22

(13%) who did not know. 124 (77%) respondents agreed that marijuana overuse could lead to mental illness compared to 30 (18%) who did not and 7 (4%) who did not know. 105 (65%) respondents agreed that alcohol abuse could lead to mental illness compared to 34 (21%) who did not and 22 (13%) who did not know.

Table 5

Frequency Distribution of the Knowledge about Mental Illness Factors

	Total		Levels of MHL			
			No (Low)		Yes (High)	
Characteristics	N	%	n	%	n	%
Total	474	100%	161	34.0%	313	66.0%
Depression is MI						
Yes	350	73.8%	89	55.3%	261	83.4%
No	80	16.9%	46	28.6%	34	10.9%
Don't Know	44	9.3%	26	16.1%	18	5.8%
Stress can lead to MI						
Yes	385	81.2%	106	65.8%	279	89.1%
No	59	12.4%	33	20.5%	26	8.3%
Don't Know	30	6.3%	22	13.7%	8	2.6%
Marijuana overuse can lead to MI						
Yes	418	88.2%	124	77.0%	294	93.9%
No	45	9.5%	30	18.6%	15	4.8%
Don't Know	11	2.3%	7	4.3%	4	1.3%
Alcohol abuse could lead to MI						
Yes	361	76.2%	105	65.2%	256	81.8%
No	78	16.5%	34	21.1%	44	13%
Don't Know	35	7.4%	22	13.7%	14.1	4.2%

Overall, most participants recognized depression, stress, marijuana overuse and alcohol abuse as some form of mental illness, as shown in figure 6 below.

Figure 6. Participant Responses on Knowledge about Mental Illness

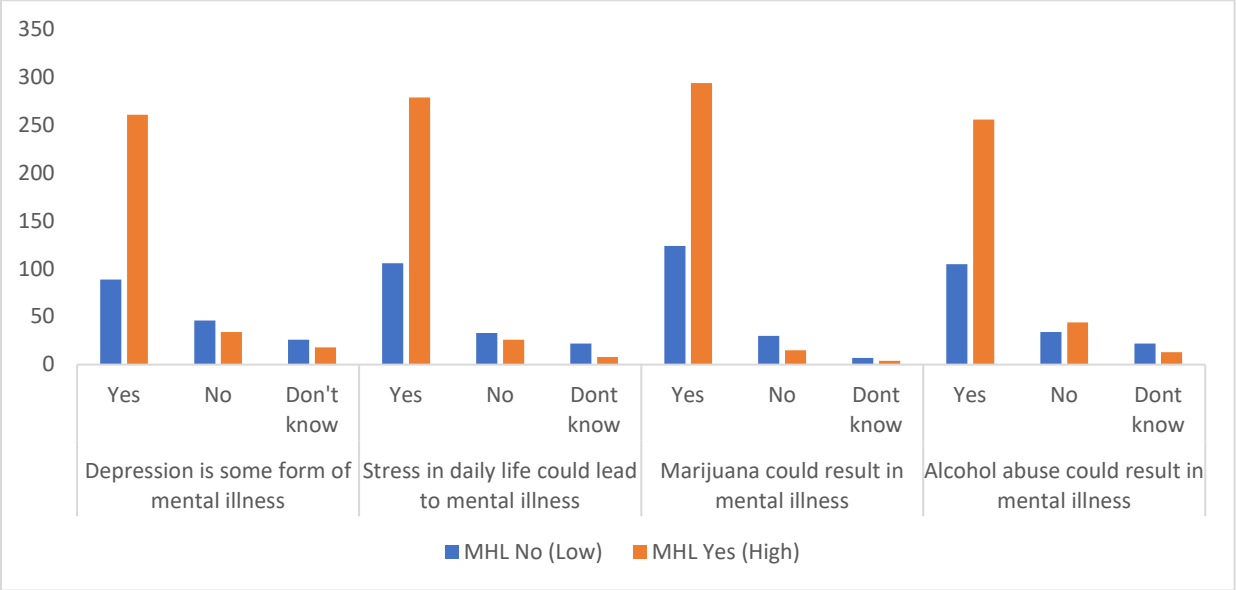


Table 6 below reports crude odd ratios (*OR*) and adjusted odd ratios (*AOR*) for characteristics on knowledge about mental illness after adjusting for age, gender, education (higher secondary school/tertiary school), and location (rural/urban). All the knowledge characteristic variables showed some form of association at 95% CI. In terms of depression, the association was statistically significant for young adults who did not recognize depression as some form of mental illness, AOR 3.58, 95% CI (2.09 - 6.11) and young adults who did not know, AOR 3.85, 95% CI (1.94 – 7.64), compared to those who knew that depression was some form of mental illness. The association was also statistically significant for young adults who did not recognize stress was some form of mental illness, AOR 1.95, 95% CI (1.05 – 3.55) and those who did not know, AOR 5.42, 95% CI (2.25 – 13.08), compared to those who knew that stress was some form of mental illness. In terms of marijuana overuse, this category was also statistically significant for

young adults who lacked knowledge of marijuana overuse as something that could lead to mental illness, AOR 2.79, 95% CI (1.40 – 05.57), and those who did not know, AOR 4.44, 95% CI (1.16 – 17.2), compared to knowledge of marijuana overuse as something that could lead to mental illness. Lack of knowledge for alcohol abuse as something that could lead to mental illness (reference – yes – alcohol abuse could lead to mental illness) was not statistically significant, AOR: 1.47, 95% CI (0.86 – 2.29, and participants who did not know was statistically significant, AOR 2.89, 95% CI (1.34 – 6.24), indicating some form of association with levels of mental health literacy.

Table 6

Crude and Adjusted Odds Ratios for Knowledge about Mental Illness Characteristics

Characteristics	Crude Odds ratio	95% Confidence Intervals	Adjusted Odds ratio	95% Confidence Intervals
Depression is MI				
Yes	Reference	Reference	Reference	Reference
No	**3.97**	**2.40 - 6.57**	**3.58**	**2.09 – 6.11**
Don't Know	**4.24**	**2.22 – 8.09**	**3.85**	**1.94 – 7.64**
Stress can lead to MI				
Yes	Reference	Reference	Reference	Reference
No	**3.34**	**1.91 – 5.85**	**1.95**	**1.05 – 3.55**
Don't Know	**7.24**	**3.13 – 16.76**	**5.42**	**2.25 – 13.08**
Marijuana overuse can lead to MI				
Yes	Reference	Reference	Reference	Reference
No	**4.74**	**2.46 – 9.12**	**2.79**	**1.40 – 05.57**
Don't Know	**4.15**	**1.19 – 14.43**	**4.44**	**1.16 – 17.02**
Alcohol abuse could lead to MI				
Yes	Reference	Reference	Reference	Reference
No	**1.88**	**1.14 - 3.11**	1.47	0.86 - 2.49
Don't Know	**3.83**	**1.88 – 7.77**	**2.89**	**1.34 – 6.24**

Attitudes about Mental Illness

Participants' attitudes towards mental illness was assessed by asking them to answer "yes" "no" and "don't know" to four questions: (a) I am not afraid to have a conversation with someone with mental illness, (b) I am willing to maintain a friendship with someone with mental illness, (c) I am willing to share a room with someone with mental illness, and (d) I am not ashamed to mention a family member with mental illness. I attempted to answer the following questions to assess participants' attitudes towards mental illness:

Research Question 4. What is the relationship between attitudes towards mental illness and levels of mental health literacy?

$H_0$4: There is no relationship between attitudes towards mental illness and levels of mental health literacy.

H_a4: There is a relationship between attitudes towards mental illness and levels of mental health literacy.

Table 7 below shows the frequency distribution of the attitudes towards mental illness characteristics. Out of a total of 313 (66%) young adults who were identified as having high levels of mental illness, 196 (62%) stated that they would not be afraid to have a conversation with someone with mental illness, compared to 101 (32%) who answered "no" and 16 (5%) who did not know. There were 182 (58%) young adults who were willing to maintain a friendship with someone with mental illness compared to 107 (34%) who were not willing to maintain friendship and 24 (7%) who did not know. There were 50 (16%) young adults who were willing to share a room with someone with

mental illness compared to 225 (71%) who were not willing to share a room, and 38 (12%) who did not know. Young adults who were not ashamed to mention a family member with mental illness were 233 (74%) compared to 56 (17%) who stated they would be ashamed and 24 (7%) who did not know.

Table 7

Frequency Distribution on Attitudes about Mental Illness Factors

	Total		Levels of MHL			
			No (Low)		Yes (High)	
Characteristics	N	%	n	%	n	%
Total	474	100%	161	34.0%	313	66.0
Not Afraid to have conversation with someone with MI						
Yes	282	59.5%	86	53.4%	196	62.6%
No	166	35.0%	65	40.4%	101	32.3%
Don't Know	26	5.5%	10	6.2%	16	5.1%
Will maintain friendship someone with MI						
Yes	233	49.2%	51	31.7%	182	58.1%
No	206	43.5%	99	61.5%	107	34.2%
Don't Know	35	7.4%	11	6.8%	24	7.7%
Willing to share room with someone with MI						
Yes	71	15.0%	21	13.0%	50	16.0%
No	356	75.1%	131	81.4%	225	71.9%
Don't Know	47	9.9%	9	5.6%	38	12.1%
Not ashamed to mention family with MI						
Yes	321	67.7%	88	54.7%	233	74.4%
No	104	21.9%	48	29.8%	56	17.9%
Don't Know	49	10.3%	25	15.5%%	24	7.7%

Table 8 below reports crude odd ratios (*OR*) and adjusted odd ratios for attitudes about mental illness after adjusting for age, gender, education (higher secondary/tertiary), and location (rural/urban). Young adults who were unwilling to maintain a friendship with someone with mental illness were statistically significantly associated, AOR 2.06, 95% CI (1.29 – 3.27), compared to young adults who were willing to maintain a

friendship with someone with mental illness. This indicated a relationship between levels of mental literacy and young adults' willingness to maintain a friendship with someone suffering from mental illness.

All the other variables were not statistically significant at 95% CI. Young adults who were afraid to have conversation with someone with mental illness, AOR 1.04, 95% CI (0.67 – 1.61) and those who did not know, AOR 0.85, 95% CI (0.35 – 2.05), compared to those who were not afraid to have a conversation; young adults who did not know whether they could maintain friendship with someone with mental illness, AOR 1.51, 95% CI (0.68 – 3.41), compared to those who were willing to maintain friendship; young adults who were not willing to share a room with someone with mental illness, AOR 0.90, 95% CI (0.50 – 1.64) and those who did not know, AOR 0.44, 95% CI (0.17 – 1.11), compared to those who were not afraid to share a room; and young adults who were ashamed to mention someone in the family had mental illness, AOR 1,38, 95% CI (0.83 – 2.31) and those who did not know, AOR 1.60, 95% CI (0.82 – 3.12), compared to those who were not ashamed to mention someone in the family had mental illness.

Table 8

Crude and Adjusted Odds Ratios on Attitudes about Mental Illness Characteristics

Characteristics	Crude Odds ratio	95% Confidence Intervals	Adjusted Odds Ratio	95% Confidence Intervals
Not Afraid to have conversation with someone with MI				
Yes	Reference	Reference	Reference	Reference
No	1.47	0.98 – 2.19	1.04	0.67 – 1.61
Don't Know	1.42	0.62 – 3.27	0.85	0.35 – 2.05
Will maintain friendship someone with MI				
Yes	Reference	Reference	Reference	Reference
No	3.30	2.18 – 4.99	**2.06**	**1.29 – 3.27**
Don't Know	1.64	0.75 – 3.56	1.51	0.68 – 3.41
Willing to share room with someone with MI				
Yes	Reference	Reference	Reference	Reference
No	1.39	0.80 – 2.41	0.90	0.50 – 1.64
Don't Know	0.57	0.23 – 1.37	0.44	0.17 – 1.11
Not ashamed to mention family with MI				
Yes	Reference	Reference	Reference	Reference
No	2.27	1.44 – 3.58	1.38	0.83 – 2.31
Don't Know	2.76	1.50 – 5.08	1.60	0.82 – 3.12

Beliefs about Mental Illness

Participants' beliefs about mental illness was assessed by asking them to answer "yes" "no" and "don't know" to four questions: (a) mental illness is not infectious, (b) people with mental illness are not dangerous, (c) people with mental illness experience stigma and discrimination, (d) mental illness is not due to possession by evil spirits, and (e) mental illness is not a punishment from God. To assess whether there is a relationship between beliefs about mental illness and the level of mental health literacy. I attempted to answer the following questions:

Research Question 5. What is the relationship between beliefs towards mental illness and levels of mental health literacy?

$H_0$5: There is no relationship between beliefs towards mental illness and levels of mental health literacy.

H_a5: There is a relationship between beliefs towards mental illness and levels of mental health literacy.

Table 9 below shows the frequency distribution of the beliefs about mental illness characteristics. Out of a total of 313 (66%) young adults who were identified as having a high level of mental illness, 260 (83%) stated that mental illness was not infectious, compared to 38 (12%) who indicated that mental illness was infectious, and 15 (4%) who did not know. There were 60 (19%) young adults who stated that people with mental illness are not dangerous, compared to 235 (18%) who stated that people with mental illness were dangerous, and 75 (5%) who did not know. There were 219 (70%) young adults who stated that people with mental illness experienced stigma and discrimination, compared to 67 (21%) who indicated that they did not experience stigma and discrimination and 27 (8%) who did not know. There were 222 (70%) young adults who stated that mental illness was not possession by evil spirits, compared to 60 (19%) who said it was possession by the evil spirit, and 31 (9%) who did not. There were 229 (73%) young adults who stated that mental illness was not a punishment from God, compared to 45 (14%) who stated that it was a punishment from God, and 39 (12%) who did not know.

Table 9

Frequency Distribution on Beliefs about Mental Illness Characteristics

	Total		Levels of MHL			
			No (Low)		Yes (High)	
Characteristics	**N**	**%**	**n**	**%**	**n**	**%**
Total	474	100%	161	34.0%	313	66.0%
MI is not Infectious						
Yes	383	80.8%	123	76.4%	260	83.1%
No	54	11.4%	16	9.9%	38	12.1%
Don't Know	37	7.8%	22	13.7%	15	4.8%
People with MI not dangerous						
Yes	101	21.3%	41	25.5%	60	19.2%
No	346	73.0%	111	68.9%	235	18%
Don't Know	27	5.7%	9	5.6%	75.1	5.8%
People with MI experience stigma/discrimination						
Yes	290	61.2	71	44.1	219	70.0
No	133	28.1	66	41.0	67	21.4
Don't Know	51	10.8	24	14.9	27	8.6
MI not due to possession by evil spirits						
Yes	312	65.8	90	55.9	222	70.9
No	111	23.4	51	31.7	60	19.2
Don't Know	51	10.8	20	12.4	31	9.9
MI not due to punishment from God						
Yes	308	65.0	79	49.1	229	73.2
No	86	18.1	41	25.5	45	14.4
Don't Know	80	16.9	41	25.5	39	12.5

Table 10 below shows crude odd ratios (*OR*) and adjusted odd ratios for beliefs about mental illness characteristics after adjusting for age, gender, education (higher secondary/tertiary), and location (rural/urban). The results showed that some relationship exist between levels of mental health literacy and young adults' beliefs about mental illness. Young adults who did not know that mental illness was infectious was statistically significantly associated, AOR 2.35, 95% CI (1.12 – 4.74) (reference - mental

illness is infectious), indicating some form of relationship in that category. However, young adults who indicated that mental illness was infectious, AOR 0.81, 95% CI (0.42 – 1.57) was not statistically significant.

In relation to people with mental illness not experiencing stigma and discrimination, the association was significant, AOR 1.71, 95% CI (1.05 – 2.80), indicating a relationship in that category. The relationship was not statistically significant for young adults who did not know, AOR 1.61, 95% CI (0.83 – 3.12), compared to young adults who knew that people with mental illness experience stigma and discrimination. The association was also statistically significantly associated with young adults who did not know that mental illness was not a punishment from God, AOR 2.22, 95% CI (1.30 – 3.82), indicating a relationship in that category. The relationship was not statistically associated with those who responded that mental illness was a punishment from God, AOR 1.69, 95% CI (0.99 – 2.90), compared to those who knew that mental illness was not due to God's punishment.

All the other variables in the beliefs about mental illness category were not statistically significant; people with mental illness were dangerous, AOR 0.90, 95% CI (0.55 – 1.47), and those who did not know, AOR 1.00, 95% CI (0.38 – 2.60), compared to those who knew that people with mental illness were not dangerous. Young adults who responded that mental illness was due to possession by the evil spirit, AOR 1.40, 95% CI (0.86 – 2.27), and those who did not know, AOR 1.02, 95% CI (0.53 – 1.98), compared to those who knew, was also not statistically significant.

Table 10

Crude and Adjusted Odds Ratios on Beliefs about Mental Illness Characteristics

Characteristics	Crude Odds ratio	95% Confidence Intervals	Adjusted Odds ratio	95% Confidence Intervals
MI is not Infectious				
Yes	Reference	Reference	Reference	Reference
No	0.89	0.48 – 1.66	0.81	0.42 – 1.57
Don't Know	3.10	1.55 – 6.18	2.35	1.12 – 4.94
People with MI not dangerous				
Yes	Reference	Reference	Reference	Reference
No	0.69	0.44 – 1.09	0.90	0.55 – 1.47
Don't Know	0.18	0.08 – 0.39	1.00	0.38 – 2.60
People with MI experience stigma/discrimination				
Yes	Reference	Reference	Reference	Reference
No	3.04	1.97 – 4.68	1.71	1.05 – 2.80
Don't Know	2.74	1.49 – 5.05	1.61	0.83 – 3.12
MI not due to possession by evil spirits				
Yes	Reference	Reference	Reference	Reference
No	2.10	1.34 – 3.28	1.40	0.86 – 2.27
Don't Know	1.60	0.86 – 2.94	1.02	0.53 – 1.98
MI not due to punishment from God				
Yes	Reference	Reference	Reference	Reference
No	2.64	1.61 – 4.33	1.69	0.99 – 2.90
Don't Know	3.05	1.83 – 5.06	2.22	1.30 – 3.82

Health Seeking Behaviors about Mental Illness

Participants' health-seeking behaviors was assessed by asking them to answer "yes" "no" and "don't know" to three questions: (a) I will visit a psychiatrist if I knew I had a mental illness, (b) I will not visit a traditional healer if I knew I had a mental illness, and (c) stigma and discrimination will not prevent me from seeking help. To

assess whether there is a relationship between health-seeking behaviors and level of mental health literacy, I attempted to answer the following questions:

Research Question 6. What is the relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy?

$H_0$6: There is no relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

H_a6: There is a relationship between the health-seeking behaviors of Zambian young adults and levels of mental health literacy.

Table 11 below shows the frequency distribution of health-seeking behavior characteristics. Out of a total of 313 (66%) young adults who were identified as having high level of mental illness, a total of 206 (65%) participants stated that they would visit a psychiatrist if they knew they had mental illness, compared to 89 (28%) who stated they would not visit a psychiatrist, and 18 (5%) who did not know. Young adults who stated they would not visit a traditional healer if they knew they had emotional problems were 257 (82%), compared to 39 (12%) who stated that they would, and 17 (5%), who stated that they did not know. Young adults who indicated that stigma and discrimination would not prevent them from seeking help were 183 (58%), compared to 93 (29%) who stated that stigma and discrimination would stop them, and 37 (11%) who did not know.

Table 11

Frequency Distribution on Health Seeking Behavior Characteristics

	Total		Levels of MHL			
			No (Low)		Yes (High)	
Characteristics	N	%	n	%	n	%
Total	474	100%	161	34.0%	313	66.0%
Will visit psychiatrist if had emotional problems						
Yes	285	60,18%	79	49.1%	206	65.8%
No	151	31.9%	62	38.5%	89	28.4%
Don't Know	38	8.0%	20	12.4%	18	5.8%
Not visit traditional healer if had emotional problems						
Yes	366	77.2%	109	67.7%	257	82.1%
No	77	16.2%	38	23.6%	39	12.5%
Don't Know	31	6.5%	14	8.7%	17	5.4%
Stigma/discrimination will not prevent me from seeking help						
Yes	263	55.5%	80	49.7%	183	58.5%
No	139	29.3%	46	28.6%	93	29.7%
Don't Know	72	15.2%	35	21.7%	37	11.8%

Figure 7 below shows participant responses. The majority of participants responded that they would not visit a traditional healer if they knew they had a mental illness. Similarly, most participants responded that they would visit a psychiatrist if they knew they had a mental disorder. Figure 3 also shows that most participants indicated that stigma and discrimination would not prevent them from seeking help.

Figure 7. Participant Responses on Health Seeking Behaviors

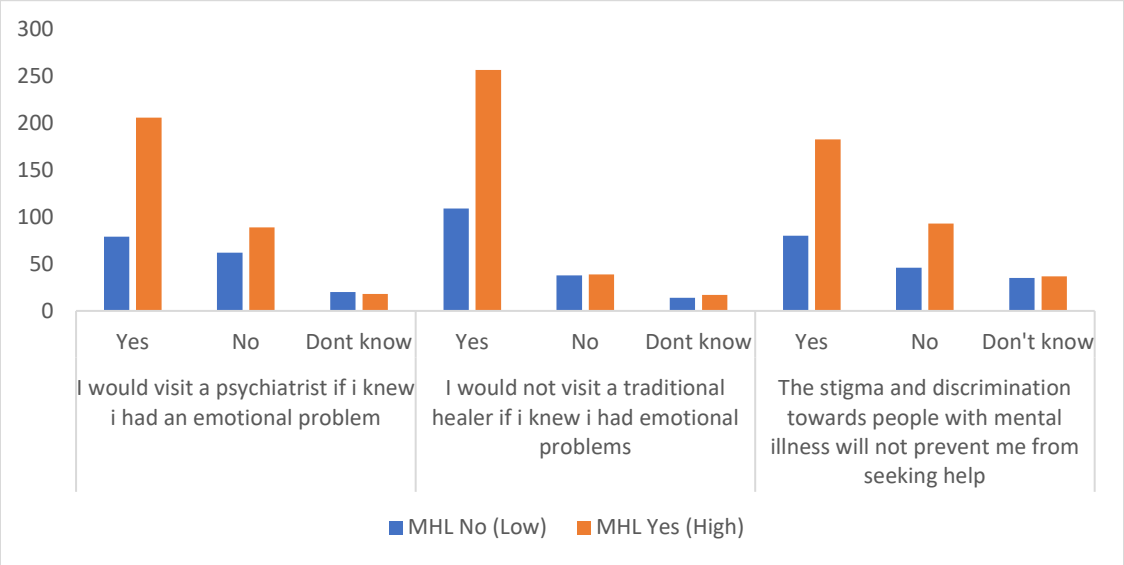


Table 12 below shows crude odd ratios (*OR*) and adjusted odd ratios (*AOR*) for health-seeking behaviors after adjusting age, gender, education (higher secondary/tertiary), and location (rural/urban). All the health-seeking behavior characteristic variables were not statistically significant at the 95% CI. Young adults who were not willing to visit a psychiatrist if they had emotional problems, AOR 1.24, 95% CI (0.79 – 1.95), and those who did not know, AOR 1.71, 95% CI (0.83 – 3.56), compared to those who were willing to visit a psychiatrist. Young adults who were willing to visit traditional healer, AOR 1.32, 95% CI (0.77 – 2.28), and those who did not know, AOR 1.05, 95% CI (0.48 – 2.31, compared to those who were willing to visit a traditional healer, and those who stated that stigma and discrimination would prevent them from seeking help, AOR 0.77, 95% CI (0.47 – 1.24), and those who did not know,

AOR 1.22, 95% CI (0.68 – 2.18), compared to those who stated that stigma and discrimination would not prevent them from seeking help.

Table 12

Crude and Adjusted Odds Ratios on Health Seeking Behavior Characteristics

Characteristics	Crude Odds ratio	95% Confidence Intervals	Adjusted Odds ratio	95% Confidence Intervals
Will visit psychiatrist if had emotional problems				
Yes	Reference	Reference	Reference	Reference
No	1.82	1.20 – 2.75	1.24	0.79 – 1.95
Don't Know	2.90	1.46 – 5.76	1.71	0.83 – 3.56
Not visit traditional healer if had emotional problems				
Yes	Reference	Reference	Reference	Reference
No	2.30	1.40 – 3.79	1.32	0.77 – 2.28
Don't Know	1.94	0.92 – 4.08	1.05	0.48 – 2.31
Stigma/discrimination will not prevent me from seeking help				
Yes	Reference	Reference	Reference	Reference
No	1.13	0.73 – 1.76	0.77	0.47 – 1.24
Don't Know	2.16	1.27 – 3.68	1.22	0.68 – 2.18

Summary

I examined the relationship between levels of mental health literacy and beliefs and attitudes about mental illness among Zambian young adults aged 18 to 24 years old. The study also examined whether levels of mental health literacy differ by age, gender, education (higher secondary/tertiary) and location/district (rural/urban areas). I used a self-administered questionnaire to collect primary data from urban and rural Zambia in higher secondary and tertiary schools. I have presented the findings on sociodemographic and reported frequencies and crude and adjusted odds ratios for all the variables. I have also reported the results on tables and graphs for the variables.

There were six research questions with the corresponding hypothesis. Research question 1 examined whether there is a relationship between education, location (district attending school), age, gender and levels of mental health literacy. Although the results did not indicate a statistically significant association, the results did show that young adults aged 18 to 20 years reported high level of mental health literacy compared to those aged 21 to 24, with female respondents reporting high level of mental health literacy compared to male respondents. Further, respondents in tertiary schools reported a high level of mental health literacy compared to those in higher secondary school, with the majority of participants with a high level of mental health literacy from Mongu rural, compared to Lusaka urban. Research question 2 sought to determine whether there was relationship between levels of mental health literacy and family history and the results indicated that there was a statistically significant relationship between family history and level of mental health literacy.

In research question 3, the results revealed some form of relationship between depression, stress, marijuana overdose and alcohol overuse and levels of mental health literacy. Research question 4 examined the relationship between attitudes towards mental illness and levels of mental health literacy and found a statistically significant association in that category. Research question 5 examined the relationship between beliefs about mental illness and levels of mental health literacy, and results indicated a statistically significant association of some characteristics. Research question 6 examined the relationship between health-seeking behaviors and levels of mental health literacy, and all the variables in this category were not statistically significant.

Chapter 5 presented and discussed an interpretation of the research questions. Chapter 5 also discussed social change implications as it relates to young adults in Zambia and the study's limitations, strengths, and implications.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The study's purpose was to examine whether there is a relationship between levels of mental health literacy and attitudes and beliefs about mental illness and health-seeking behaviors of young adults aged 18 to 24 years. The study also sought to understand whether socio-demographics (education, location, age and location) predicted levels of mental health literacy. The study compared data in rural and urban Zambia.

For this study, a total of 474 students were recruited to participate in the study. As noted in chapters 3 and 4, a self-reporting questionnaire and a pilot study conducted at tertiary schools in Lusaka revealed that participants could easily understand the questions on the questionnaire. Cronbach testing revealed a .933 score, indicating that all participants answered the research questions accurately and that the research questions were clear and easy to understand. Using descriptive statistics, data was compared in rural and urban areas.

For this study, I relied on the health belief model's five constructs, including perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficacy. When applying the health belief model to this study, young adults with high levels of mental health literacy are more likely to view mental illness just like any other disease and feel more confident to seek treatment than those with low levels of mental health literacy. Young adults' ability to understand that mental illness is just like any other disease is also key to overcoming the negative attitudes and beliefs about mental illness and the stereotypes labeled towards mental illness. As stated in chapter 2,

the more young adults believed they were susceptible to mental disease and understood the potential seriousness of the diseases, the more likely they would be willing to change their attitudes and beliefs towards mental illness and seek professional help.

In previous studies, researchers have reported that some of the barriers of seeking help include fear of being stigmatized and discriminated against by society (Amuyunzu-Nyamango, 2013). The majority of young adults with high levels of mental health literacy (n = 225), expressed unwillingness to share a room with a mentally ill person compared to young adults who were willing to share a room (n = 50). This shows that systematic discrimination and the stigma towards the mentally ill still exists, influenced in part by the negative beliefs and attitudes towards mental illness (Kapungwe et al., 2011; Amuyunzu-Nyamango, 2013). Promoting high levels of mental health literacy among young adults through education and various other awareness programs could create beliefs that will help young adults understand the perceived susceptibility of mental illness and promote positive attitudes about the disease. As young adults become more aware that mental illness is just like any other disease, they will more likely overcome the fear of disclosing their condition or the condition of family members and understand that the benefits of seeking professional help could potentially outweigh the negative impact of being stigmatized or discriminated. High levels of mental health literacy could potentially give young adults self- confidence and the ability to make informed decisions about their mental well-being. Such awareness could have a strong positive impact on young adults' health-seeking habits and mental well-being, which could ultimately improve their quality of life.

Interpretation of Findings

Sociodemographic

On sociodemographic variables, the characteristics were divided into four categories: education (higher secondary/tertiary), location/district (rural/urban), gender, and age. Binary logistics reported no significant relationships between the four subcategory variables and levels of levels of mental health literacy. However, the results revealed a rural-urban difference in levels of mental health literacy, with young adults in Mongu rural reporting higher levels of mental health literacy (n = 204) compared to young adults in Lusaka urban (n = 109). These findings contradicted previous results which reported rurality as a significant determinant of mental illness due to low levels of mental health literacy (SAD (n.d.); MDAC & MHUNZ, 2014).

However, my study did not focus on young adults in remote areas of Mongu rural but in urban areas of Mongu rural. The study also focused on young adults in higher secondary and tertiary schools, not the general rural population. It is possible, therefore that the rural-urban difference regarding sociodemographic factors for young adults in the urban areas of Mongu rural and Lusaka urban were similar in some categories such as education. Despite being in a rural area, young adults in Mongu rural reported higher levels of mental health literacy and were able to identify factors relating to mental health literacy than young adults in Lusaka urban. According to Aljassim and Ostini (2020), rurality alone should not explain the rural-urban health literacy disparities but that socio-demographic factors should also play an important role. Silver et al. (2002) also found that there is a relationship between neighborhood disadvantage and higher rates of

depression and substance abuse disorder. The contradictory findings could therefore be due to differences in socioeconomic and cultural characteristics of participants from remote rural areas.

Family History

The association between family history and levels of mental health literacy revealed a statistically significantly association for young adults who had no family member or friend suffering from mental illness (AOR: 1.71; 95% CI: 1.04 – 2.81). This means that young adults with no family member or friend suffering from mental illness were 1.04 times more likely to have low levels of mental health literacy compared to young adults with family member or friend suffering from mental illness. A previous study by Choudhry et al. (2016) found that perceptions about mental illness could be shaped by personal knowledge about the illness, through sickness or interaction with people suffering from the illness, consistent with my findings.

Knowledge About Mental Illness

In assessing the association between knowledge of mental illness and levels of mental health literacy, the findings show that, statistically, there is significant relationship between young adults who did not recognize depression as some form of mental illness (AOR 3.58, 95% CI: 2.09 - 6.11) and young adults who did not know that depression was some form of mental illness (AOR 3.85, 95% CI: 1.94 – 7.64). This means that young adults who did not recognize depression as some form of mental illness were 2.09 more likely to have low levels of mental health literacy, and those who did not know were 1.94

more likely to have low levels of mental health literacy, compared to those who demonstrated knowledge of depression as some form of mental illness.

Some factors of stress, marijuana overuse and alcohol abuse also had a predictive effect. Young adults who did not recognize stress as something that could lead to mental illness (AOR 1.95, 95% CI: 1.05 – 3.55) were 1.05 more likely to have low levels of mental health literacy, and those who did not know (AOR 5.42, 95% CI: 2.25 – 13.08) were 2.25 more likely to have low levels of mental health literacy, compared to those who demonstrated knowledge of stress as some form of mental illness.

With regards to marijuana, the findings revealed statistically significant results for young adults who lacked knowledge of marijuana overuse as something that could lead to mental illness (AOR 2.79, 95% CI: 1.40 – 05.57), and those who did not know were also statistically significant (AOR 4.44, 95% CI: 1.16 – 17.2). This means that young adults who demonstrated lack of knowledge for marijuana overuse as something that could lead to mental illness were 1.40 more likely to have low levels of mental health literacy, and those who did not know were 1.16 more likely to have low levels of mental health literacy, all compared to young adults who demonstrated knowledge of marijuana overuse as something that could lead to mental illness.

The results for young adults who did not know that alcohol abuse could lead to mental illness was also statistically significant (AOR 2.89, 95% CI: 1.34 – 6.24). This means that the odds of having low levels of mental health literacy for young adults who did not know that alcohol abuse could lead to mental illness was 1.34 times more compared to those who knew.

The ability to associate depression and stress or anxiety to low levels of mental health literacy is comparable to previous findings in different countries (Loureiro et al. 2013; Jorm, 2000). However, although findings by other researchers have linked alcohol abuse to neuropsychiatric disorders (Hammerstein et al., 2017), and marijuana overuse to psychiatric disorders (National Institute of Health, n.d.), there is scarce, if any data, that have examined the relationship between alcohol abuse and marijuana abuse to levels of mental health literacy. The findings of this study will therefore add to evidence on the relationship of alcohol abuse and marijuana overuse to levels of mental health literacy.

Attitudes towards mental illness

Young adults who were not willing to maintain friendship with someone with mental illness was statistically significantly associated, AOR 2.06, 95% CI (1.29 – 3.27). This means that young adults who were not willing to maintain friendship with someone with mental illness were 1.29 times more likely to have low levels of mental health literacy, compared to those who were willing to maintain friendship. Previous research findings revealed that levels of mental health literacy could influence attitudes towards mental illness (Wei et al., 2015), and that the negative attitudes towards mental illness is due to lack of knowledge (Kapungwe et al., 2010), consistent with the findings of this study.

Beliefs About Mental Illness

There were five subcategories in the beliefs about mental illness category (mental illness is not infectious, people with mental illness are not dangerous, people with mental illness experience stigma and discrimination, mental illness is not due to possession by

evil spirits, and mental illness is not punishment from God). Three subcategories were significantly associated with levels of mental health literacy: young adults who did not know whether mental illness was not infectious (AOR 2.35, 95% CI: 1.12 – 4.74), young adults who responded that people with mental illness do not experience stigma and discrimination (AOR 1.71, 95% CI: 1.05 – 2.80), and young adults who did not know whether mental illness was not punishment from God (AOR 2.22, 95% CI: 1.30 – 3.82). This means that young adults who did not know whether mental illness was not infectious were 1.12 more likely to have low levels of mental health literacy, those who stated that people with mental illness do not experience stigma and discrimination were 1.05 more likely to have low levels of mental health literacy, and those who stated that they "did not know" whether mental illness was not punishment from God were 1.30 more likely to have low levels of mental health literacy.

My findings show that there is a relationship between some attributes of beliefs about mental illness and levels of mental health literacy. This indicates that mental illness remains a silent disease to many young adults, and beliefs about the disease are still largely influenced by lack of knowledge about the mental illness. These findings are consistent with previous findings which revealed that misconceptions about mental illness still exist due to lack of knowledge (Mwape et al., 2011), and due to levels of mental health literacy (Loureiro et al., 2013). This lack of knowledge, according to Amuyunzu-Nyamango (2013) and Kapungwe et al. (2011) is due to a pervasive culture of denial and myths engraved in cultural belief systems that allow such negative perceptions to continue.

Health Seeking Behaviors

All the health seeking behavior characteristic variables were not statistically significant at the 95% CI. This means that there is no relationship between health seeking behaviors and levels of mental health literacy. However, previous studies have shown that Africans still lack a better understanding of mental illness due to lack of knowledge and cultural beliefs (Ehiemua, 2014), many of whom still label mental illness as possession by evil (Amuyunzu-Nyamongo, 2013). According to Kajawu et al. (2015), many Africans still seek traditional medicine for their mental health problems. My findings are therefore not consistent with findings from previous studies in which researchers reported a relationship between health seeking behaviors and levels of mental health literacy.

A study by Furnham et al. (2018), however, noted that factors such age, gender, education, and urban-rural and cross-cultural differences could still affect rates of health seeking behaviors, including treatment seeking habits. It is therefore possible that sociodemographic factors such as education may have influenced participants' perceptions about their health seeking behaviors and young adults were willing to seek professional help. However, it is also possible that most young adults still struggle to identify mental illness as a disease just like any other disease, and therefore may have been less inclined to provide accurate responses regarding their health seeking behaviors. It has been reported by other researchers that many people do not want to disclose their condition because of the misconceptions labelled towards mental illness, (MDAC &

MHUNZ, 2014). Kim et al. (2015) reported that discrepancies can sometimes be drawn in what people believe they could do and what they could do. Because of the taboo nature and subtlety of mental illness, most young adults may still have problems identifying their beliefs about mental illness, and what they could actually do in regard to seeking help. As Loureiro et al. (2013) stated, these discrepancies make it even more important to raise awareness for mental illness and strategies for support.

Limitations of the Study

One of the limitations to this study was that there is no current data to understand current prevalence rates for mental illness in Zambia. The most current data was from a 2011 report by the Ministry of Health. It is not clear how the Ministry of Health obtained the data. Some of the data was from reports by MDAC and MHUNZ (2008) and by Mwanza et al. (2008), which used pooled data from hospital records. The quality of the data from the Ministry of Health, a government institution and pooled data from hospital records may therefore be questionable. Another limitation was that the study used a self-reporting questionnaire. It is therefore possible that societal misconceptions and negative perceptions labeled towards the mentally ill could have influenced participant responses in that participants were not willing to be truthful in their responses.

Recommendations

As stated above, the results revealed that the majority of young adults who reported high levels of mental health literacy were not willing to share a room with someone with mental illness. These findings confirm that attitudes and beliefs about mental illness by lay-persons are still largely shaped by cultural stereotypes (Choudhry et

al., 2016). To overcome the negative perceptions about mental illness among Zambian young adults, my recommendation would be to introduce initiatives that address mental health literacy in school curriculums to give young adults basic knowledge about mental illness. WHO and Calouste Gulbenkian Foundation (2014) reported that education has the potential to influence attitudes towards mental illness. My recommendation for the next study therefore is to investigate whether Zambians are receptive to integrating mental health literacy programs in higher secondary and tertiary school curriculums. This next study could focus on higher secondary and tertiary teachers and the results could be presented to the Ministry of Education for introduction in school curriculums throughout Zambia.

Implications

High levels of mental health literacy among young adults can play an important role in promoting positive mental health perceptions and addressing mental health needs in Zambian communities. According to WHO (2007), good mental health is integral to human health and well-being, shaped by various social, economic and physical environments operating at different stages of human life. Broder et al. (2017) stated that learning and adopting health related knowledge during adolescent years could lead to an improvement in health decision-making and health literacy among adolescents. Therefore, integrating mental health educational programs into school curriculums could impact young adults' understanding of mental illness, and their health seeking habits. Young adults will be able to learn basic knowledge about mental illness and use that

knowledge to transform the negative perceptions about mental illness into positive perceptions.

Lam (2014) noted that implications for positive social change could be created by improving individual and population mental health. Studies have shown that young adults are at a higher risk of mental health problems due to various vulnerabilities including age group structural changes (USAID, 2014), poverty and diseases (Carvalho & Nsemukila, 2013) and low levels of mental health literacy (SAD, n.d.). 74% of the Zambian population is under the age of 30 years (Ministry of Health, 2011b), which means that a larger segment of the population is at a higher risk of mental disorders. Improving levels of mental health literacy and taking actions that will prevent and reduce mental disorders among Zambian young adults could be an effective intervention strategy that could lead to an improvement in the mental health of Zambia's largest population. Through mental health awareness programs and campaigns in school curriculums and settings, positive social change could take the form of transforming the negative perceptions about mental illness to positive perceptions, which could impact the mental well-being of Zambians at different levels, starting with Zambian's largest population in school settings, to their families at home, and their communities.

Implications for positive social change could also be created by reducing prevalence rates by addressing perceived barriers to treatment, and increasing knowledge about perceived symptoms (Sanchez et al., 2016), as well as facilitating early recognition that could lead to early treatment and management of mental illness among Zambian young adults. Young adults could also be empowered to overcome the myths and

misconceptions about mental illness and make informed decisions about their mental well-being and change health-seeking habits, which could ultimately ensure stronger youth, communities, and society.

Conclusions

This study examined the relationship between levels of mental health literacy and attitudes and beliefs towards mental illness among Zambian young adults aged 18 to 24 years. Young adults in rural Zambia reported higher levels of mental health literacy compared to young adults in urban Zambia. The results also revealed a relationship between levels of mental health literacy and the variables in the knowledge of mental illness category, including depression, stress, marijuana overuse and alcohol abuse. These findings indicate that there is need to educate young adults about mental illness to overcome stereotypes and misconceptions about mental illness. This could be achieved by integrating mental health literacy education programs in school curriculums to give students basic knowledge about mental illness.

This was a quantitative cross-sectional study. Data were obtained using a self-reporting questionnaire. Young adults were particularly chosen as the study population because studies show that young adults are the largest segment of the Zambian population (Ministry of Health, 2011b), and the most vulnerable population to mental illness (USAID, 2014). Promoting high levels of mental health literacy among young adults could impact how the Zambian society perceive mental illness. This impact could start from school settings to the Zambian society at large. Promoting high levels of mental health literacy among young adults could be an effective strategy in reducing

mental illness among young adults and has the potential to change health seeking behaviors by empowering young adults to make informed decisions about their mental health.

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Appendix A: Email to Research Site

Request for Permission to Conduct Research in Your School

To school administrator

My name is Etta Johnson, a student at Walden University. I am conducting a research study for my Doctoral program in Public Health, Community Health Education which explores whether levels of Mental Health Literacy (MHL) could have an impact in influencing attitudes and beliefs about mental illness among Zambian rural young adults, compared to urban young adults. This study will be conducted under the supervisions of Dr. Feresu Shingairai and co-supervisor Dr. Howell Sasser, both contributing faculties at Walden University.

I am seeking your consent to approach a number of students aged 18 to 24 years as participants for the study. Participation for the study is voluntary. The study will be conducted at any time convenient to the school and to participants.

Attached is a copy of the IRB clearance from the University of Zambia, consent form, flyer to be used in the research process, and conditional IRB clearance from Walden University.

If you require any information, please do not hesitate to contact me at etta.mwambwa-johnson@waldenu.edu.

Sincerely,

Etta Johnson

Appendix B: Flyer to Recruit Participants

RESEARCH ANNOUNCEMENT

STUDY ON MENTAL HEALTH LITERACY AMONG ZAMBIAN YOUNG ADULTS

Be part of an important Mental Health Literacy research study

- *Are you between the ages of 18 to 24 years of age?*
- *Are you currently enrolled at a higher secondary school or tertiary/university?*

If you answered yes to these questions, you may be eligible to participate in a research study that seeks to determine whether levels of Mental Health Literacy have the potential to influence attitudes and beliefs towards mental illness. You will be required to complete a questionnaire and your answers will be anonymous. Participation in the study may produce minimal risks such as psychological stress. Research results may lead to development of campaign programs that educate young adults about mental illness. Participation in the study is voluntary and no payment will be given for participating.

The study will take place from ____ to ____(dates).

Etta Johnson, a PhD student at Walden University, is conducting this study. Please contact Etta Johnson at etta.mwambwa-johnson@waldenu.edu or 979920390 to schedule an appointment to participate in the study.

Appendix C: Mental Health Literacy Questionnaire

Mental Health Literacy among Zambian Young Adults:

A comparison Study between rural and urban Young Adults

Section A: Socio-demographic factors

Age:	18 to 20:	1
	21 to 24:	2
Gender:	Male	1
	Female	2
District Attending School:	Mongu (Rural)	1
	Lusaka (Urban)	2
Type of School Attending:	Higher Secondary School	1
	Tertiary	2

Section B: Family history of mental illness (FMI)

I have had a close family member or friend suffer from some kind of mental illness (FMI1)

1: Yes
2: No
3: Don't know

I would not be ashamed if people knew someone in my family has been diagnosed with mental illness (FMI2)

1: Yes
2: No
3: Don't know

Section C: Mental Health Literacy (MHL)

This question will test your knowledge about mental illness. Please read the statement and state whether you agree or disagree with that statement.

Depression, alcohol abuse, stress and Marijuana overuse all fall under the category of mental illness and can be diagnosed by health professionals just like any other health conditions

1: Yes (High)
2: No (Low)
3: Don't know (Low)

Section D: Knowledge about mental illness (KMI)

These questions will test your knowledge about mental illness. Please read each statement describing general perceptions about mental illness and state whether you agree or disagree with that statement.

a) Depression is some form of mental illness (KMI1)
   1: Yes
   2: No
   3: Don't know

b) Stress in daily life could lead to mental illness (KMI2)
   1: Yes
   2: No
   3: Don't know

c) Marijuana could result in mental illness (KMI3)
   1: Yes
   2: No
   3: Don't know

d) Alcohol abuse could result in mental illness (KMI4)
   1: Yes
   2: No
   3: Don't know

Section E: Beliefs About mental illness (BMI)

The second part of the questionnaire will measure beliefs towards mental illness. Based on your opinion, please state whether you agree or disagree with each statement.

a) Mental illness is infectious (BMI1)
   1: Yes
   2: No
   3: Don't know

b) People with mental illness are not dangerous? (BMI2)
   1: Yes
   2: No
   3: Don't know

c) People with mental illness experience stigma and discrimination due to their mental health problems (BMI3)
   1: Yes
   2: No
   3: Don't know

d) Mental illness is not due to possession by evil spirits (BMI4)
   1: Yes
   2: No
   3: Don't know

e) Mental illness is not a punishment from God (BMI5)
   1: Yes
   2: No
   3: Don't know

Section F: Attitudes About mental illness (AMI)

The fourth part of the questionnaire will measure attitudes towards mental illness. Based on your opinion, state whether you agree or disagree with the statement.

a) I am not afraid to have a conversation with someone with mental illness (AMI1)
   1: Yes
   2: No
   3: Don't know

b) I am willing to maintain a friendship with someone with mental illness (AMI2)
   1: Yes
   2: No
   3: Don't know

c) I am willing to share a room with someone who has mental illness (AMI3)
   1: Yes
   2: No
   3: Don't know

d) I am not ashamed to mention someone in my family who has mental illness (AMI4)
   1: Yes
   2: No
   3: Don't know

Section G: Health seeking behaviors (HSB)

The fifth part of the questionnaire will measure health-seeking behaviors. Based on your opinion, state whether you agree or disagree with the statement.

a) I would visit a psychiatrist if I knew I had an emotional problem (HSB1)
   1: Yes
   2: No
   3: Don't know

b) I would not visit a traditional healer if I knew I had emotional problems (HSB2)
   1: Yes
   2: No
   3: Don't know

c) The stigma and discrimination towards people with mental illness will not prevent me from seeking help (HSB3)
   1: Yes
   2: No
   3: Don't know