

**AN EFFECTIVE MANAGEMENT OF COMMON PSYCHO-SOCIAL
PROBLEMS AMONG ADOLESCENT LEARNERS IN MALAWI**

PhD (EDUCATIONAL PSYCHOLOGY) THESIS

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UNIVERSITY OF MALAWI

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PhD (EDUCATIONAL PSYCHOLOGY) THESIS

By

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Submitted to the School of Education in partial fulfillment of the requirements for the
degree of Doctor of Philosophy (Educational Psychology)

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DECLARATION

I, the undersigned hereby declare that the text of this thesis entitled “An Effective Management of Common Psycho-Social Problems Among Adolescent Learners in Malawi” is mainly my own work and has not been used for any other award at the University of Malawi or any other University.

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CERTIFICATE OF APPROVAL

We, the undersigned certify that this thesis represents the student's original work and is submitted with our approval.

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DEDICATION

I dedicate this work to my wife (Emma) and children (Ambele and Keta). Their company and support made me to reach this far. I do not have suitable words to describe my indebtedness to them. To my late father – (Peter Mwafyaka Kuyokwa) may your soul rest in eternal peace – and mother (Grace Muyaba), I am so grateful for the support you have given me throughout my life. I do not have suitable words to describe my indebtedness to you.

This thesis is also dedicated to all learners who have ever experienced any form of mental and behavioural problems at some point in their life. I pray for zero stigma and discrimination against them as well as an improvement in the care they receive. Such care depends on the enhanced relevant education for teachers, lecturers, health workers, the general public, and on the commitment by the Malawi Government.

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ABSTRACT

The main purpose of this study was to investigate an effective method of managing common psycho-social problems among adolescent learners in Malawi. Sequential exploratory mixed methods design guided the study. First phase utilised a qualitative method, where 18 key informants were targeted. The second phase was a quantitative method and targeted 317 adolescent learners from two secondary schools. Key findings: Firstly, the study found that adolescent learners had psycho-social problems and prevalence was as follows: depression (87%); suicidal thoughts (26.4%); substance use (31.3%); positive attitudes towards mental health problems (26.4%) and knowledge of mental health problems (23.3%). Furthermore, being male was associated with depression, substance use, knowledge about mental health problems, positive attitudes towards mental health problems; being younger adolescent (10-15 years) was associated with depression, knowledge of mental health problems, positive attitudes towards mental health problems; being an adolescent from rural area was associated with suicidal thoughts before intervention. Secondly, the study observed psycho-social service deficiencies within the Malawian secondary schools. Thirdly, the combined psycho-education and group counselling intervention were able to reduce the prevalence of psycho-social problems among adolescents. Furthermore, some tested variables, such as attitudes toward mental health problems, knowledge of mental health problems, and substance use, were statistically significant. Changes in other tested variables, such as depression and suicidal thoughts, were not statistically significant. The study findings will help relevant stakeholders to be aware of the adolescent psycho-social challenges and consider strategies of managing them.

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LIST OF ACRONYMS AND ABBREVIATIONS

AOR	Adjusted Odds Ratios
C.I	Confidence Interval
DC	District Commissioner
DEM	District Education Manager
DHO	District Health Officer
DMHS	Director of Mental Health Services
DSWO	District Social Welfare Officer
EDM	Education Division Manager
PTA	Parents Teachers Association
SSA	Sub-Saharan Africa
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

CHAPTER 1

INTRODUCTION OF THE STUDY

1.1 Chapter Overview

This chapter begins with background information on the prevalence of the common psycho-social problems, data on knowledge gap of mental health problems, attitudes towards mental illness and help-seeking behaviours among adolescent learners with a focus on Sub-Saharan Africa (SSA).

1.2 Background

The high percentage of psycho-social challenges among adolescents is a global social-economic threat. According to WHO (2014), common psycho-social problems in general population including adolescents are depression, suicidal thoughts and use of psychoactive substances. Psycho-social problems are defined as maladaptive, unwanted, unhealthy intrapersonal, emotional, and behavioral states (Bista et. al, 2016). In addition, 75% of adult psycho-social problems such as depression, suicidal thoughts and substance use begin during adolescence and youth (Voss., et. al, 2019). Suicide is a sign of severe depression and is the second leading cause of death among older adolescent girls globally and third for boys (Voss et al., 2019; WHO, 2016). Further, common psycho-social problems such as depression, suicide and psychoactive substance use problems cause a huge global burden that leads to premature death, affects day to day life operation and quality of life in general. This

results in years of life lost, instead of someone being a productive citizen (Berhane et.al, 2020; Dick et al., 2019).

The WHO defines an adolescent as any person who is aged between 10 to 19 years old (WHO, 2015). Further, psychoactive substance use is when an adolescent uses alcohol, tobacco, cannabis and different types of drugs without the doctor's prescription while depression is when an adolescent has the following symptoms: loss of appetite, loss of sleep, suicidal thoughts, loss of interest in things they used to be happy with, and social withdraw for a period of two weeks or more (WHO, 2016). In addition, psycho-social challenges like negative attitudes towards mental illness and knowledge gap about mental health problems lead to failure to seek psycho-social care (Romer & Bock, 2008; Wahl et. al., 2012).

Further to this, studies reveal also that psycho-social problems like depression, suicidal thoughts and substance use can result in poor academic performance, poor concentration in class, and school dropout among adolescent learners in school (Akinbote & Omigbodun, 2018; Burnett-Zeigler et. al, 2012; Singh et. al., 2017; Zarrouq et al., 2016). The most commonly used psychoactive substances among adolescents include: alcohol, cannabis, tobacco, and drugs (Birungi et. al. ,2020; Kuteesa et. al., 2020; Musyoka et. al, 2020) and these were the psychoactive substances that were targeted in this study. In addition, this research study focused on depression, suicidal thoughts, psychoactive substance use, attitudes towards mental health problems, and knowledge of mental health problems as common psycho-social problems.

Globally, prevalence of depression among adolescent learners varies from 6% to 70% (Kutcher et al., 2017; Magklara et al., 2015; Wichaidit, et. al., 2019; Young et. al., 2010) while the global prevalence of psychoactive substance use varies from 5% to 80% (Beck & Legleye, 2009; Ogel et. al., 2004; Wichaidit et al., 2019). Similar studies reveal that adolescents who experience severe forms of depression also have suicidal thoughts (Seidu et. al., 2020; Voss et al., 2019). The prevalence of suicidal thoughts among adolescents varies from 11.5% to 36.6% (Donath et. al., 2019; Voss et al., 2019). The prevalence of suicidal thoughts among adolescents tends to increase with age (Voss et al., 2019), and is associated with depression and substance use (Guedria-Tekari et . al, 2019), food insecurity (Pandey et. al, 2019) anxiety (Pandey et al., 2019; Seidu et al., 2020), loneliness (Pandey et al., 2019) and gender (Pandey et al., 2019).

In Sub-Saharan Africa (SSA), the prevalence of depression, negative attitudes, knowledge gap about mental illness and use of psychoactive substance among adolescent learners varies depending on the region or country where the study was done. For instance, previous studies reveal that the problem of depression and use of psychoactive substance is also prevalent among adolescent learners. Prevalence cross-sectional studies show that depression varies from 31.2% to 70% (Latiff, et.al. , 2016; Nakimuli-Mpungu et al., 2012) while psychoactive substance use varies from 4% to 50.5% in countries like South Africa, Uganda, and Kenya (Kuteesa et al., 2020; Musyoka et. al., 2020; Swahn et al., 2020; Tshitangano & Tosin, 2016a; Zarrouq et al., 2016).

Prevalence cross-sectional studies done in Malawi reveal that prevalence of depression among adolescents varied from 18.9% to 70% (Kim., Mazenga.,

Devandra., Ahmed., Kazembe., Yu, & Sharp., 2014; Kutcher., Udedi., Gilberds., Brown., Chapota., & Perkins., 2017), while psychoactive substance use varied from 11.2% to 15% (Kubwalo et. al. ,2013; and Muula, 2007).

Similar studies conducted globally also reveal that depression and psychoactive substance use may co-exist in adolescents (Hides et. al., 2019; Witkiewitz & Stauffer, 2014). Thus, an adolescent with depression can be found to be using psychoactive substances and may at same time be depressed (Abdulmalik, Omigbodun, Wakil, & Beida, 2012; Cheng et. al., 2020; Kaminer et. al, 2007; Witkiewitz & Stauffer, 2014).

Further, it has been found that psychological interventions such as psycho-education and group counselling approaches can be effective in managing depression, suicidal thoughts, psychoactive substance use, knowledge gap and poor attitudes towards mental health problems in different populations including adolescent learners (Gates et. al., 2016; Hetrick et. al., 2016). Psychoeducation (PE) is defined as a knowledge transfer intervention for a psycho-social problem and its management that integrates emotional and motivational aspects to help clients cope with the psycho-social problem and improve intervention adherence and efficacy (Ekhtiari et al., 2017). Also, Group counseling is defined as a face-to-face contact in which a counselor treats two or more clients at the same time, focusing on the needs of the clients served (Berg et al., 2017). While, combined approach of psycho-education and group counselling is defined as simultaneous provision of psychoeducation and group counselling services to the same clients. Previous studies also indicate that there is a knowledge gap and negative attitude towards mental health problems among adolescent learners (Pang et. al., 2017; Wahl at. al., 2012). Furthermore, similar studies show that knowledge of mental health, positive attitudes towards mental illness and help-seeking behaviours

among adolescent learners in secondary schools can be improved with psycho-education and group counselling (Calear et. al., 2016; Dick et. al., 2019; Dowling et. al., 2019; Giannotta et. al. , 2014).

In addition, risk factors such as social demographics like age, gender, setting (rural/urban), cultural factors, family factors, school environment, academic expectations and social support are associated with depression and psychoactive substance use among adolescent learners (Azaiza et. al. , 2009; Bonar et. al., 2019). Further, there is increasing evidence to suggest that effective management during the early stages of mental health problems may help reduce the severity and/or the persistence of the initial or primary mental health problem and prevent secondary mental health problems (McGorry et. al., 2011). Effective management of psychosocial problems means provision of psycho-social problems management strategies to clients with psycho-social challenges and these include, but are not limited to, psycho-education, counselling, psycho-therapy, psychosocial information and problem solving techniques (Sears et. al, 2009; Brugman et. al., 2001).

The literature review also shows that the efficacy of group counseling and psycho-education as a single approach in management of depression, suicidal thoughts, knowledge gap about psycho-social problem, stigma against mental health problems and use of psychoactive substances among adolescents and in general population varies from 0.2% - 48.2% (Ahlen et. al., 2019; Bass et al., 2006; Bolton et al., 2003; Donker et.al., 2009; Lai et al., 2016; Muriungi & Ndeti, 2013; Thimm & Antonsen, 2014).

Therefore, this study intended to see if a combined approach of group counseling and psycho-education could be more effective in reducing psycho-social challenges than a single approach of group counseling and psycho-education among adolescent learners in Malawi. The choice of a combined approach of psycho-education and group counselling was based on the idea that use of a single approach could be good but the efficacy of solitary approach intervention seemed to be not more statistically significant as observed in the reviewed literature from both developed and low and middle-income countries (Ahlen et al., 2019; Arora, et. al., 2019). Hence, a choice of this combined approach. The combined approach helped to improve the psycho-social wellbeing or mental health of adolescent learners in secondary schools.

The secondary school years can be exciting and confusing for adolescent learners. Thus, it is important for school management to create a unique school environment that supports adolescents through psycho-social wellbeing and academic development(Arslan & Coşkun, 2022). For instance, significant numbers of adolescent learners have or experience psycho-social problems that can affect their academic performance. Implementing mental health support or psycho-social wellbeing would improve adolescents' mental health, academic and social success(Dale et al., 2022; Morton, 2022).

1.3 Psychosocial Support Services in Malawi

Mental health services in Malawi are centralised in three tertiary units, located at St. John of God House of Hospitality (in Mzuzu, Northern Region), Bwaila Psychiatric unit (in Lilongwe, Central Region) and Zomba Mental Hospital (in Zomba, Southern Region) (MoH, 2020). This implies that most people, including adolescents with psycho-social problems, do not get help because these institutions are more urban-based and there are few compared with the Malawian population (Kauye et al., 2015).

In Malawi, about 10-18% of adults and 11-29% of children seen in primary health facilities have varying forms of mental health problems, with the commonest conditions being: schizophrenia (48%), seizure disorder (36.6%), dementia (9.7%), depression (2.2%), substance abuse problems (1.6%) and mental retardation (1.4%) (Mhp, 2020). Further, the psycho-social problems can be managed by mental health education of the community on the importance of mental health and mobilisation of the various groups, as well as youths to participate in the promotion of mental health in their communities (Mhp, 2020). However, little is known in the policy, specifically on how to screen learners in schools for mental health problems and, if identified, how should they be helped. In Malawi, access to mental health service care for people with mental health problems is poor (Kauye et al., 2015).

Most of the mental health research studies have been done among patients attending clinics and not among adolescent learners. However, little was known about management of psycho-social challenges among adolescent learners in Malawian secondary schools. Therefore, this study helped to address these challenges by testing the efficacy of combined psycho-education and group counselling approach among adolescent learners with psychosocial problems in secondary schools.

1.4 Problem Statement

Psycho-social challenges remain a big problem among adolescent learners globally (Azagba, et. al, 2014; Carmona, et. al., 2020). Therefore, there is need to intervene in order to manage these problems. Global prevalence of depression among adolescents varies from 6% to 70% (Kutcher et. al. ,2017; Wichaidit et. al., 2019), psychoactive substance use varies from 5% to 80% (Beck & Legleye, 2009; Ogel et. al., 2004;

Wichaidit et al., 2019), while prevalence of suicidal thoughts varies from 11.5% to 36.6% (Donath et al., 2019 & Voss et al., 2019).

In SSA, the prevalence of depression among adolescents varies from 31.2% to 70% (Latiff, et. al., 2016; Nakimuli-Mpungu, et al., 2012) while psychoactive substance use varies from 4% to 50.5% (Kuteesa et. al., 2020; Musyoka et. al., 2020) and prevalence of suicidal thoughts varies from 3.1 % to 31.3% (Kinyanda et. al., 2011; Rudatsikira, 2007; Nalugya-Sserunjogi, 2016).

In Malawi, adolescents' prevalence of use psychoactive substances varies from 11.2% to 15% while depression varies from 18.9% to 70% (Kim et al., 2014; Kutcher et al., 2017; Kubwalo et al., 2013 & Muula, 2007) and suicidal thoughts is at 12.9 % (Shaikh et. al., 2016). The highlighted psycho-social problems can affect adolescents significantly. For instance, an adolescent learner with psycho-social problems can perform poorly in class and can be classified as failure (Fatoye & Morakinyo, 2002; Kuteesa et al., 2020; Madu & Matla, 2003; Morojele et. al., 2016; Musyoka et. al., 2020).

Further, literature shows that adolescent psycho-social problems can be managed by using psychological interventions like cognitive behaviour therapy, individual counselling, group counselling, psycho-education and problem solving therapy (Ahlen., et. al, 2019; Lai, et.al., 2016). But, the efficacy rates of use of these single interventional approaches remain lower in management of psycho-social problems in general population including adolescent learners which ranges from 0.2% to 48.2% (Ahlen et al., 2019; Arora., et. al., 2019; Gates, et.al., 2016). Therefore, there was a need to explore the possibility that the combined approach of group counselling and

psycho-education could be more effective in management of adolescent psycho-social problems in secondary schools in different parts of the world including Malawi than a single approach of psychotherapy. Also, understanding the effective way of managing these psycho-social problems was important for being able to identify psycho-social needs for adolescent learners in order to provide relevant interventions to improve the wellbeing of adolescents.

However, there was a gap in the literature regarding the effective way of managing the psycho-social problems among adolescent learners. The findings of this study may not only be used to inform prevention and management interventions for psycho-social problems among this vulnerable population, but may also provide input for policy development. This is important, given that the current Malawi mental health policy (Malawi MHP, 2020) and national education policy (NEP, 2013) do not have a clear policy guidance on management of psycho-social problems among adolescent learners.

1.5 Purpose of the Study

The main purpose of this study was to explore the effective way of managing common psych-social problems among adolescent learners in Malawi.

1.6 Main Research Question

What is the effective way of managing common psycho-social problems among adolescent learners?

1.6.1 Sub-Research Questions

The study intended to answer or investigate the following;

1. What is the prevalence of psycho-social challenges among adolescent learners?

2. How are psycho-social problems managed among adolescent learners?
3. What is the effect of combined psycho-education and group counselling approach in supporting adolescents with psycho-social challenges?

1.7 Significance of the Study

Firstly, the study findings have added knowledge on effective management of adolescent psycho-social challenges in school setting in Malawi. The study revealed that the combined approach of psycho-education and group counselling intervention was able to reduce the prevalence of the psycho-social problems among adolescent learners. Therefore, this study has helped to reduce the existing knowledge gap. Secondly, the study findings provide insights to policy makers who play a pivotal role of providing psycho-social support services in secondary school institutions in Malawi. Thirdly, the study findings would also help education experts, teachers, and health workers to understand the importance of psycho-social support services in adolescent learners. It is believed that improved introduction of structured psycho-social interventions could result in a significant reduction of psycho-social problems, thereby improving quality of life for adolescent students. Thus, this study would provide a basis for deliberate integration of psycho-social support services in education setting and secondary schools in Malawi.

1.8 Limitation/Delimitation of the Study

This section of the study looked at the limitations and delimitations of the study.

1.8.1 Limitation of the study

The study only focused on establishing the prevalence and management of psycho-social problems by using a combined approach of psycho-education and group counseling intervention.

The study did not directly investigate day secondary schools which also have adolescent learners because it was difficult to control co-founding factors. The researcher did not directly involve actual parents' views and all experts involved in the management of mental health problems in schools. Instead, he got the views of Parent-Teacher Association (PTA) chairpersons and selected few experts on how to manage the adolescents' mental health problems.

1.8.2 Delimitation of the study

The combined approach of psycho-education and group counseling helped to reduce the prevalence, change attitudes and increase knowledge of psycho-social problems at experimental study site and not at the control site in boarding schools. Therefore, the study findings were limited to targeted boarding schools.

Much as the study did not directly investigate day secondary schools which also have adolescent learners because it was difficult to control co-founding factors. The researcher did not directly involve actual parents' views and all experts involved in the management of mental health problems in schools. Instead, he got the views of Parent-Teacher Association (PTA) chairpersons and selected few experts on how to manage the adolescents' mental health problems. However, the results from this study still represent the views of experts and adolescents in Malawi. Further, adolescents in other schools could have responded similarly as those who were targeted in this study

because the targeted participants came from similar educational and socioeconomic background. Similarly, other experts could have responded the same way because they have similar academic qualifications and experience. The study was conducted during the period when secondary school teachers went on strike across the country. This, therefore, might affect the outcome of the results.

1.9 Thesis Structure

The thesis is organized in five chapters with related sections as outlined. Chapter One provides the introduction and background of the study. Chapter Two provides a review of related literature and theoretical models on behavioural change and management with reference to common psycho-social problems among adolescent learners.

Chapter Three is a discussion of the research methodology that guided the study. Chapters Four and Five provide a discussion of research findings, conclusions and recommendations of this study.

1.10 Chapter Summary

This chapter looked at the following areas: background of the study, problem statement, purpose of the study, research questions, significance of the study and de/limitation of the study. The next chapter is the review of related literature. It also focuses on the theoretical models that informed this study.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Chapter Overview

In this chapter, the researcher provides a brief overview of common psycho-social problems by specifically looking at prevalence of depression, suicidal thoughts, psychoactive substance use, adolescent attitudes toward mental health problems, and knowledge gap about mental health problems among adolescent learners. Further, a review of the relevant literature looks at management of these common psycho-social challenges by focussing on how a combined approach of psycho-education and group counselling can effectively manage common psycho-social problems among adolescents. In addition, a discussion of review of related literature from different parts of the world was guided by two theoretical models: Model of Behaviour Change and Ecological systems model. Finally, the researcher discusses the conceptual framework which demonstrates how the psycho-social challenges interrelate and how they can be managed.

2.2 Psycho-social Problems Among Adolescent Learners

Adolescent psychosocial problems can be caused by a variety of factors, including increasing independence from adult controls, parental expectations, academic demands, rapid physical and psychological changes, exploration of social issues and concerns, increased focus on activities with a peer group, and the formation of a basic self-identity(Mumthas & Muhsina, 2014). This study focussed on common psycho-

social problems as suggested by World Health Organisation (WHO,2014). According to WHO (2014), common psycho-social problems in general population including adolescents are depression, negative attitudes towards mental health problems, knowledge gap about mental health problems, suicidal thoughts and use of psychoactive substances.

The decision to use psychoactive substances and to understand the feelings of depression, suicidal thoughts, stigma towards mental health problems, and knowledge gap about mental health problems among adolescents is a complex issue. Furthermore, the association between psycho-social challenges and social demographics and how these problems can be managed among adolescent learners is also complex. It involves the interplay of many factors which are personal, economic, socio-cultural, psychological and institutional in context. A complexity of the underlying factors, therefore, renders use of a single theoretical explanation inadequate. This explains why two theoretical models have been adopted to guide this study: Prochaska et.al (1992) Model of Behaviour Change and Urie Bronfenbrenner's (1980) Ecological Systems Model. It is believed that integration of elements of these two theoretical models would produce a more robust explanatory framework that the individual theories could not. Furthermore, the models helped the researcher to have a good framework of understanding how the research questions could be addressed.

Several studies reveal that adolescents experience different forms of psycho-social challenges as they grow into adulthood (Johannessen et. al., 2017; Kuteesa et al., 2020; Morojele et. al., 2016; Murphy et al., 2001; Musyoka et al., 2020; Swahn et al., 2020; and Swahn et al., 2010). The common psycho-social challenges include

depression (Murphy et al., 2001), substance use (Morojele et al., 2016), reduced knowledge on how to manage mental health problems (Swahn et al., 2020), negative attitudes towards mental health problems (Pang et al., 2017) and suicidal thoughts (Seidu et al., 2020). Further, use of substances, suicidal thoughts and feelings depression may co-exist among adolescents (Murphy et al., 2001).

2.2.1 Measurements of Self-Reported Psycho-social Problems

Psychosocial problems among adolescents can be measured by different tools which include: Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), Center for Epidemiologic Studies Depression Scale (CESD-10), Patient Health Questionnaire for Depression (PHQ-9), Attitudes Toward Serious Mental Illness Scale-Adolescent Version (ATSMI-AV), Attitudes about Child Mental Health Questionnaire (ACMHQ) and Mental Health Knowledge Questionnaire (MHKQ).

2.2.1.1 Psychoactive Substance

Psychoactive substance use among adolescents is measured in a number of ways (Alperen et al., 2014; Birungi et al., 2020; Conner et al., 2013; Kuteesa et al., 2020; Murphy et al., 2001; Musyoka et al., 2020; Swahn et al., 2020). First, substance use has been assessed more descriptively by asking about the use of any substance use in specific time frame. For example, substance use may be measured by asking about the frequency of substance use over life time or any use in the previous month and by asking about the frequency of substance use the past 30 days (Alperen et al., 2014; Conner et al., 2013). Secondly, psychoactive substance use can also be measured using validated questionnaires that often include frequency and quantity as well as items interrogating substance use-related harms. Examples of validated tools include Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), AUDIT and

CAGE (Kuteesa et al., 2020; Murphy et al., 2001; Musyoka et al., 2020; Swahn et al., 2020). Researchers use these questionnaires to categorize severity of substance use. This study adopted ASSIST questionnaire because it has been used in Malawi by different researchers. It also has been able to give representative data and it encompasses different variables that measure substance use. Therefore, it was likely to give representative data of the targeted population. The ASSIST questionnaire was also used because it is a WHO questionnaire that has been validated in several countries, including Malawi. In comparison to the other tools, this meant that it could easily measure the variables of interest in the Malawian context.

2.2.1.2 Depression

Literature shows that depression is one of common psycho-social challenges that adolescents experience (Balogun, et. al, 2014; Caelear et. al., 2013; Cheng et al., 2020). There are several tools that have been used to measure depression among study participants but among the commonly used validated tools include Center for Epidemiologic Studies Depression Scale (CESD-10) and Patient Health Questionnaire for Depression (PHQ-9).

CESD-10 is a ten-item questionnaire used to assess depression (Błachnio et. al., 2015). CESD-10 is a widely used screening tool for identifying depressive symptoms (Radloff, 1977). The 10-item scale is a measure of study participants' feelings of depression and behaviors in the past week. Although CESD-10 has not been validated in Malawi, it has been found to be an effective instrument in measuring adolescent depression in South Africa and has been validated there (Baron, 2017). PHQ-9 Scale, on the other hand, is a nine-item questionnaire used to assess depression. PHQ-9 is a widely used screening tool for identifying depressive symptoms in general population

including adolescents (Kutcher et al., 2017). The PHQ-9-item scale is a measure of study participants' feelings of depression and behaviors in the past week. PHQ-9 has been validated in Malawi, and has been found to be an effective instrument in measuring adolescent depression in Malawi (Kutcher et al., 2017). This study adopted the latter instrument because it has been validated in Malawi and therefore it was likely to give representative data of the targeted population.

2.2.1.3 Suicidal Thoughts

Suicide is difficult to predict and prevent because people who consider killing themselves are often unwilling or unable to disclose their intentions. The cognition measurements provide an opportunity to test whether someone has intention to kill themselves or not. The following are some of the validated instruments used when measuring suicidal thoughts among adolescents in community settings: Center for Epidemiologic Studies Depression Scale (CESD-10) and Patient Health Questionnaire for Depression (PHQ-9). CESD-10 is a ten-item questionnaire used to assess depression and suicidal thoughts (Błachnio et al., 2015).

2.2.1.4 Attitudes towards Mental Health Problems

Research reveals that people tend to have different attitudes towards mental illness and that affects their health seeking behaviour (Aromaa, et. al, 2010, 2011; Högberg, et. al, 2008; Turner & Mohan, 2016; Wrigley et al., 2005). Further, studies have revealed that mental illness stigma is there and strategies for reducing it is needed. Therefore, there was need to understand the adolescents' attitudes toward mental health problems in this study in order to determine their counseling service-seeking behaviour.

There are different tools that are used to measure attitudes towards mental illness across the globe. They include: Attitudes Toward Serious Mental Illness Scale-Adolescent Version (ATSMI-AV) questionnaire, which has been used in different countries including Singapore where it was found that 44.5% of adolescents had negative attitudes or stigma towards mental illness (Pang et al., 2017; Watson et. al., 2005). Community Attitudes towards Mental Illness (CAMI) questionnaire is another questionnaire that is used when assessing attitude of the study population about attitudes towards mental health condition and has been successful in measuring mental illness attitudes in Sweden in targeted communities (Högberg et. al., 2008). Finally, there is the Attitudes about Child Mental Health Questionnaire (ACMHQ) questionnaire which measures perceived public stigma and personal stigmatizing attitudes towards child mental health care (Heflinger et. al., 2014). This study adopted the ATSMI-AV questionnaire because it was more relevant and comprehensive to the targeted population.

2.2.1.5 Knowledge of Mental Health Problems

Globally, psycho-social problems make up about 33% of the burden of illness in adolescence and young adulthood (WHO, 2013). Therefore, adolescents' knowledge of mental health problems is important as it can help in mental health care seeking behaviour among young people (Du et. al., 2019). There are several tools that have been used to measure knowledge of mental health problems among study populations. Among others, these include: 20-Item Mental Health Knowledge (MHKQ) questionnaire (Hart et al., 2014), which is a standardized multifaceted 20-item instrument and was developed by the Chinese Ministry of Health (Wang et al., 2013). It has been used in different countries to assess mental health knowledge of the study

participants and has been found to be effective tool of assessing mental health knowledge (Yu et al., 2015). Another questionnaire is the Adolescent Depression Knowledge Questionnaire (ADKQ), which is specifically meant to measure the knowledge of depression among adolescents (Hart et al., 2014). The Mental Health Literacy Scale (MHLS) is yet another questionnaire which used to measure the knowledge of mental health problems (O'Connor & Casey, 2015). This study adopted the 20-Item Mental Health Knowledge questionnaire because it encompasses different variables related to mental health problems which were targeted in this study.

2.2.2 Prevalence of Psycho-social Problems

This section will describe some of the most known individual psychosocial problems among adolescents identified in the literature. These include, but are not limited to, a) depression, b) psychoactive substance use, c) suicidal thoughts, d) attitudes towards mental health problems and d) knowledge of mental health problems.

2.2.2.1 Depression

Studies have assessed patterns of depression among adolescent learners. Most of these studies were conducted in High Income Countries (HICs) and Low and Middle Income Countries (LMICs) and reveal that adolescents experience depression (Balogun et al., 2014; Johannessen et al., 2017; Torikka, et. al, 2001; Unger et al., 2001). The WHO has identified depression as the fourth largest risk factor for disease burden and leading causes of disability in the world (WHO, 2016; Witkiewitz & Stauffer, 2014). Therefore, depression is a big problem in different parts of the world, including Malawi.

Previous studies have revealed that the prevalence of depression among adolescent learners varies from 6% to 70% (Kutcher et al., 2017; Magklara et al., 2015; Wichaidit et al., 2019; Young et al., 2010). The following risk factors have been associated with depression in adolescence: family history of depression, substance use, being female, negative cognitions, physical or emotional abuse by the family, academic workload, interpersonal conflict, low social support, and stressful life events (Balogun et al., 2014; Johannessen et al., 2017; Nguyen et al., 2013; Unger et al., 2001; Young et al., 2010). In Malawi the prevalence of depression varies from 18.9% to 70% (Kim et al., 2014; Kutcher et al., 2017). Based on the reviewed literature, depression is a big problem among adolescents in both HIC and LMC it is, therefore, worthy developing necessary interventions that would help to manage the psychosocial problems. However, little has been investigated on associated factors of depression, prevalence and management of depression among Malawian adolescent learners in Zomba district.

2.2.2.2 Psychoactive Substance Use

To develop appropriate strategies for substance use prevention amongst adolescent learners, an understanding of the associated risk and protective factors is essential. Research suggests that there are several risk factors associated with substance use among adolescents (Gillman, Yeater, Feldstein Ewing, Kong, & Bryan, 2018; Heron et al., 2012; Maserumule et. al. , 2019). Further, substance use among adolescents can have harmful effects on those who use it, commonly resulting in many health problems (WHO-ASSIST-Working-Group, 2002; WHO, 2010). Also, psychoactive substance use like alcohol use has been reported to be the third largest risk factors for

disease burden and a leading cause of disability (WHO, 2016; Witkiewitz & Stauffer, 2014).

A number of studies have reported on the prevalence of substance use among adolescents, which varies from 5% to 80 % (Beck & Legleye, 2009; Ogel et. al., 2004; Patrick et al., 2013; Shimane & Wada, 2007; Wichaidit et al., 2019; Zarrouq et al., 2016). The use of psychoactive substances has so many effects on adolescents' life, which include: poor academic performance, distorted brain development, poor relationship with friends at school, reduced decision-making ability and being rebellious to parents (Beaton et. al, 2016; Whitesell et. al, 2013).

A systematic review of commonly used psychoactive substances in Sub-Saharan Africa found that alcohol, cannabis, tobacco, khat, cocaine, stimulants and heroin are widely used substances among adolescents (Acuda et.al. , 2011; Zarrouq et al., 2016). Furthermore, a national study among adolescent learners in Zambia showed that more adolescent males use psychoactive substances than females (Siziya et al., 2013) and similar studies have further reported that use of psychoactive substances among adolescent learners is associated with history of having engaged in sexual intercourse, having been bullied and poor parental support (Siziya et al., 2013; Zarrouq et al., 2016). In Malawi, adolescents' prevalence of use psychoactive substances varies from 11.2%- 17% (Kubwalo et al.,2013 & Muula, 2007) and suicidal thoughts is at 12.9 % (Shaikh et. al., 2016).

The reviewed literature shows that adolescents use substances. Therefore, there is need to provide interventions that would help to reduce the prevalence of substance use among adolescents. However, little has been investigated on associated factors of

psychoactive use, prevalence and management of psychoactive substance use among Malawian adolescent learners.

2.2.2.3 Knowledge Gap of Mental Illness

The knowledge of psycho-social problems is important among adolescent learners as it can help them to easily seek help from experts in case they are in need of the services (Yakushi et al., 2017). For example, a study done by Ruble et. al (2013) shows that knowledge of depression through psycho-education can reduce symptoms of depression. Similarly, a study done by Wahl et al. (2012) on knowledge and attitudes about mental illness among middle school students found that students' knowledge about mental illness was inconsistent and important gaps of knowledge were evident, particularly with respect to the symptoms of specific mental health problems (Wahl et al., 2012).

Furthermore, a study conducted by Ojio et al. (2015) on effects of school-based mental health literacy education for secondary school students to be delivered by school teachers in Australia found that knowledge of mental health and desirable behavior for help-seeking were significantly improved immediately after the psycho-education (Ojio et al., 2015). The reviewed literature shows that there is knowledge gap among young people which may affect how they think about mental health problems and health care seeking behaviors. The literature also shows that if adolescents have the knowledge of mental health problems, they can easily seek health care from the mental health care providers. However, little has been investigated on knowledge gap towards mental health problems and effective management of mental health problems among Malawian adolescent learners.

2.2.2.4 Attitudes towards Mental Illness

Generally, adolescents have negative attitudes towards mental health problems and adolescents' attitudes the same can affect how they seek psychological help from experts in different parts of the world (Nguyen et. al., 2013; Wahl et al., 2012). For example, a study conducted by Watson, Miller, and Lyons (2005) found that adolescents have negative attitudes towards mental illness. They thus proposed strategies that are aimed at reducing negative attitudes among adolescents by specifically targeting categorical thinking about mental health problems and perceptions. A similar study suggest that adolescent learners' attitude towards depression can improve if attitudes of their parents and teachers change towards them (Nguyen et al., 2013). Another study reports that attitudes toward individuals with a mental illness were generally positive among adolescents learners, but a substantial number of students had less favorable attitudes (Wahl et al., 2012). In addition, a study by Taylor-Rodgers and Batterham (2014) in Australia found that young people have stigma attitudes towards mental health problems like anxiety and depression. This makes young people to have poor mental health seeking behaviours (Taylor-Rodgers & Batterham, 2014).

In Malawi, a study done by Crabb et al. (2012) on attitudes towards mental illness among patients and care givers attending mental health and non-mental health related clinics in a general hospital in Blantyre, found that the most of participants had attributed mental illness to alcohol and illicit drug abuse (95.7%). This was closely followed by brain disease (92.8%), spirit possession (82.8%) and psychological trauma (76.1%). The reviewed literature indicates that young people have negative attitudes towards mental health problems. This has negative impact when deciding to seek mental health care. Therefore, there was need to conduct a study to learn more

about attitudes of adolescents towards mental health problems in order to provide necessary interventions that would improve their lives.

2.2.2.5 Suicidal Thoughts

Suicide remains a challenge across the world and it is difficult to predict and prevent because of people who consider killing themselves. Further, people who have suicide thoughts often are unwilling or unable to disclose their intentions. Also, suicidal thoughts remain a main challenge in general population including adolescent learners. This was reported in countries like USA, Uganda, Zambia, Kenya, Botswana, Ghana, and Ethiopia (Amare et., 2018; Kinyanda., 2011; Rudatsikira et.al., 2007; Nalugya-Sserunjogi., 2016; Swahn., 2012). Further, prevalence of suicidal thoughts among adolescents tends to increase with age (Voss et al., 2019). The reviewed literature shows that suicidal thoughts remain high among adolescents. Therefore, there was need to create ways how to manage these psychosocial problems among adolescents. In Malawi the prevalence is at 12.9 % (Shaikh., Lloyd & Acquah., 2016). However, the knowledge of management of suicidal thoughts among adolescent learners remain scanty. Hence, this study aimed to addressing this gap in knowledge.

2.3 The efficacy of Psycho-education and Group Counselling Approaches

Studies reveal that psycho-social challenges among adolescent learners can be well managed by doing psychotherapies like psycho-education and group counselling (Adegbolagun, et. al., 2020; Bass et al., 2006; Bella-Awusah, et.al, 2016; Bolton et al., 2003; Thimm & Antonsen, 2014). In HICs, studies show that psycho-education and depression can reduce psycho-social challenges like symptoms of depression, use of psychoactive substances, attitudes towards mental health problems, and knowledge of mental health problems. For example, a study done by Thimm and Antonsen

(2014) on effectiveness of cognitive behavioral group therapy for depression in Norway found that group counseling can reduce depression feelings among study participants by 17.5%. Thus, scores decreased from 28.5% pre-intervention to 18.5% post-intervention at 3-months follow-up period (Thimm & Antonsen, 2014). However, a meta-analysis of the effects of psycho-education on depression, anxiety and psychological distress by Donker et al. (2009) found that only 0.2 Cohen d of the study participants had decreased symptoms of depression secondary to psycho-education (Donker et al., 2009). Similarly, a systematic review done by Werner-Seidler et. al (2017) found that interventions like psycho-education and group counseling were effective in managing depression and prevention of depression among adolescent learners if delivered by school staff. Swartz et al.'s (2017) study on the effectiveness of a universal school-based depression education program among US Secondary School Students found that 46% of adolescent participants had increased knowledge of depression and started approaching the teachers about the depression concerns. In addition, a study conducted by Straub et al. (2014) found that group counseling was effective in management of depressive symptoms, improved quality of life and reduced suicidal ideation.

Also, a study in Indonesia found that psycho-education can improve knowledge and reduce smoking attitudes among adolescent learners (Tahlil et. al, 2015). Similarly, a study done by Merry et. al. (2004) on psycho-education interventions for the prevention of depression in children and adolescents found that psychological interventions were effective in managing depression. In addition, a quasi-experimental study by Wong et al. (2012) on effectiveness of a universal school-based programme for preventing depression in Chinese adolescents found that students who

completed the programme generally showed positive development in help-seeking attitudes and self-esteem. Similarly, a study done by Ruble et al. (2013) on depression knowledge among adolescent learners in USA found that there was a significant positive change in knowledge for students who received an intervention but not in the control group. Further, an intervention group also demonstrated a significant difference in willingness to share with someone their experiences concerning depression who is a peer, which was not present in the control group (Ruble et al., 2013). Additionally, a study in Australia by Taylor-Rodgers and Batterham (2014) among adolescents found that psycho-education can increase mental health knowledge. It can also lead to increased help-seeking behaviours and decreased depression and anxiety symptoms. Also, Sharp et. al (2006) found that psycho-educational intervention can help in improving attitudes toward seeking professional psychological help, as well as their attitudes towards mental illness among young people in classroom (Sharp et al., 2006).

In LMICs, similar findings were observed. For example, a study in Nigeria by Adegbolagun et al. (2020) on effectiveness of group therapy on depression among adolescents found a significant reduction in depressive symptoms. On pre-intervention, they found a mean of 4.50 (SD = 2.81) while 2.83 (SD = 1.92), $p < 0.02$ was found on post-intervention. Furthermore, a similar study on depression in Nigeria among adolescent learners found that group counselling can reduce prevalence of depression by 3.05% (Bella-Awusah et al., 2016). Similarly, a study by Isa, Ani, Bella-Awusah, and Omigbodun (2018) on effects of psycho-education on depression among adolescents found that for one-week post-intervention, the mean depression score was significantly reduced compared with a baseline of 24.4 (SD, 2.10) while 3.94 (SD 11.18) was for post-intervention, $p = 0.001$ (Isa et al., 2018). In addition, a

study conducted by Bass et al. (2006) on effects of group counseling on depression in Uganda communities found that there was a 43.2% decrease of depressive symptoms among study participants. The treatment arm had 11.7% while control arm had 54.9% (Bass et al., 2006). Similarly, a study done by Bolton et al. (2003) on the impact group psychotherapy on depression among rural Uganda communities found a decrease of 48.2% of prevalence of depression among study participants after intervention. Thus, there is a treatment arm of 6.5% and a control group of 54.7%, respectively (Bolton et al., 2003).

In Malawi, a study done by Kutcher et al. (2015) on improving Malawian teachers' and young peoples' mental health knowledge and attitudes found that educating teachers and young people had significantly improved the knowledge ($p < 0.0001$, $d = 1.16$) and attitudes ($p < 0.0001$, $d = 0.79$) towards mental health (Kutcher et al., 2015). Similarly, a study done by Mwale and Muula (2019) on the efficacy of peer education in sexual behavioral change among adolescent learners in Northern Malawi found that there were significant improvements in the intervention arm as 96% of study participants were less likely to have sex than those in the control group (Mwale & Muula, 2019). Further, a similar study found that effect size of 0.28 of psycho-education was able to reduce prevalence of negative attitudes towards psycho-social challenges among adolescents (Gaiha et al., 2021).

Therefore, studies in both HICs and LMICs show that group counseling and psycho-education can result in increased knowledge about mental illness, change attitudes towards mental health problems, as well as reduce prevalence of depression, suicidal thoughts and substance use. Also, there was need to test if a combined approach of group counselling and psycho-education intervention could be an effective way of

managing psychosocial problems among adolescents in Malawi especially in a school context.

2.4 A Conceptual Framework

A conceptual framework is a tool used by researchers to guide their inquiry; it is a collection of ideas used to structure the research, similar to a map, and includes the research question, literature review, methods, and data analysis (Imenda, 2014). The researcher was guided by the following conceptual framework during the literature review, methodology, data collection, analysis and intervention. Furthermore, this conceptual framework was used to explain how various concepts, literature, methods, data collection, analysis, and intervention are related in order to explain the phenomenon of effective management of psycho-social problems among adolescent learners in a school setting. The conceptual framework has been developed based on the following two theoretical models: Model of Behaviour Change by Prochaska et. al (1992) and Ecological systems model by Urie Bronfenbrenner's (1980).

2.4.1 Model One - Model of Behaviour Change

A model of behaviour change which was developed by Prochaska et al. (1992) provides a useful framework for understanding the process by which people change their behaviour, and for considering how ready they are to change their substance use or other lifestyle behaviors (Prochaska et al., 1992). In this study, adolescent learners with depression and those that use psychoactive substances may be able to change their feelings of depression; those with poor attitude towards mental health problems, and knowledge gap towards mental health problems may be able to improve and be managed by psycho-education and group counseling intervention (Yang et. al., 2018;

Young et al., 2010). The Behaviour Change Model comprises of the following stages of behavioural change: *Pre-contemplation*, *Contemplation*, *Preparation*, and *Action* and *Maintenance*. Figure 1 below shows a detailed description of the model.

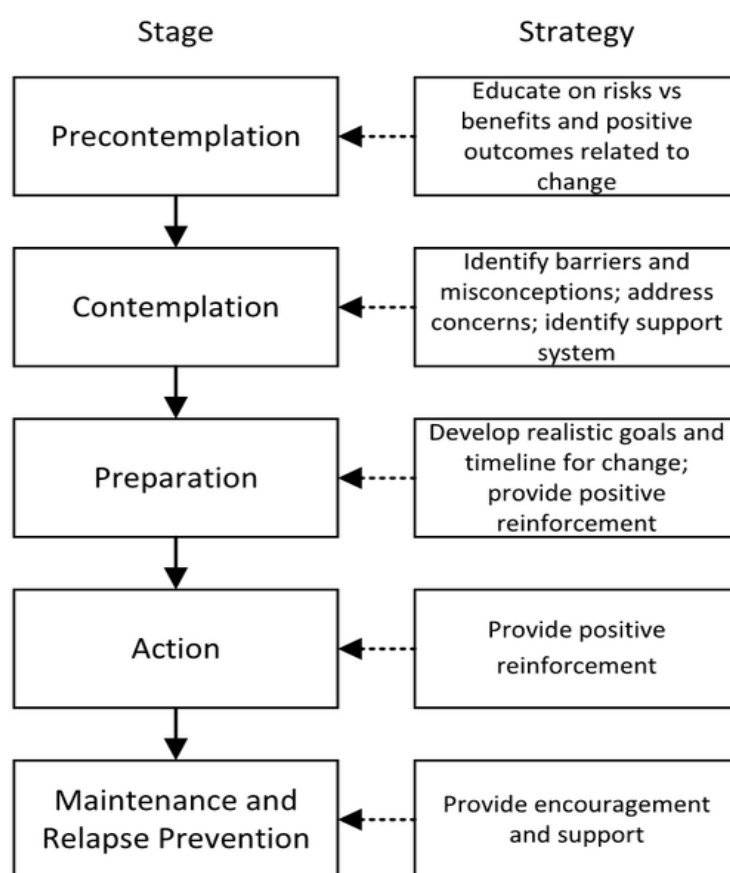


Figure 1: Summary of Behaviour change model. **Source:** Wang, et al (2019)

Figure 1, above, shows how the model offers a useful conceptual framework for understanding the process by which adolescent learners changed their behaviour and, perhaps, how behaviour change of psychoactive substance use, attitudes, knowledge and depression occurs. Further, the figure provides an insight into how adolescent learners go through different stages of behavioural change. The change can be secondary to intervention of psycho-education and group counseling or no

intervention in control group. The following are the detailed explanations of stages of the behaviour change model.

2.4.1.1 Pre-contemplation

Adolescent learners who have just started using substances are likely to be in this stage. Here, adolescents are not necessarily thinking about changing their substance use or suicidal thoughts/negative attitudes towards mental health problems. This is because they are focused on the positive aspects of their substance use and are unlikely to have any concerns about their use of psychoactive substances/suicidal thoughts/negative attitudes towards mental health problems. Yet, they may show some problems to talking about their substance use but are unlikely to know or accept that their substance use is a problem. Adolescents use substances as coping mechanisms of their psychological challenges (Fothergill et al., 2008). At this stage they are unlikely to respond to direct advice to change their behaviour but may be receptive to information about the bad effects associated with substance use/suicidal thoughts/negative attitudes towards mental health problems.

2.4.1.2 Contemplation

Some adolescent learners who are using psychoactive substances/suicidal thoughts/negative attitudes towards mental health problems may be in this stage of behavioural change. Here, adolescents are thinking about cutting down or stopping substance use/suicidal thoughts/negative attitudes towards mental health problems. They may be unsure about their psychoactive substance use and feelings of depression when they may be able to see both the good things and the ‘less good things’ about their substance use due to lack of knowledge (Alhyas et al., 2015). Furthermore, they

may have some consciousness of the problems associated with substance use and may be considering the advantages and disadvantages of their current substance use pattern (Alhyas et al., 2015). This could be secondary to psycho-education from experts or just knowledge from friends/parents (Alhyas et al., 2015). A certain percentage of adolescents in the contemplation stage may be willing to make a change but they may not know how to do it. They may also not be confident that they are able to change. At this stage, an adolescent just needs psycho-education or group counseling to help change their behaviour.

2.4.1.3 Preparation/Determination

This involves an adolescent planning to act in the near future and making the final preparations before stopping to use psychoactive substance, suicidal thoughts/negative attitudes towards mental health problems and moving out of depressive state. Adolescents at this stage take committed action and are ready to change but may still have some level of doubt. In the preparation stage, then, adolescents are intending to act. They may also share their intentions with others; as well as making small changes in their substance use and depressive behaviour, re-considering their current behaviour and considering what different behaviour could offer them, and becoming more confident and readier to change their behaviour. Counseling and psycho-education can help adolescents decide to either stop substance use or move out of a depressive state (Tshitangano & Tosin, 2016a).

2.4.1.4 Action

Some adolescents are likely to be in the action stage. Here, adolescents will have made the decision that their use of substances/ suicidal thoughts/negative attitudes

towards mental health problems needs to change. Depressed adolescents may want to seek help from someone (like an expert or a family member) who can help them to manage their psychological problems (Tshitangano & Tosin, 2016b). Some adolescents will have commenced cutting down or stopping psychoactive substance use at this stage.

2.4.1.5 Maintenance

A long-term success of an adolescent in the maintenance stage is no psychoactive substance use, no depression, developing positive attitudes towards mental health problems and knowledge of mental health problems. Here, then, adolescents try to maintain the behaviour changes they have made. They also work to prevent relapse. Adolescents are more likely to remain abstinent if they receive psycho-education and group counseling about effects of substance use and depression (Whitesell et al., 2013).

2.4.1.6 Relapse

Some adolescents who try to make changes in their substance use, prevent depression, or develop positive attitudes towards mental health problems and knowledge of mental health problems may relapse, at least for a time. This should be expected and viewed as a learning process rather than failure. Hence, they have to be psycho-educated and group-counseled about this. Adolescents have to review and examine timeframes. They are need to review what strategies actually worked or did not work for them. However, they need relationship support to maintain non-use of substance (Whitesell et al., 2013).

2.4.2 Model two -Urie Bronfenbrenner's Ecological Systems Theory

The main assumption of Bronfenbrenner's (1980) ecological systems model is that the adolescent's biological and psychological makeup is based on individual and genetic developmental history. Figure 2 below gives more details on the organization of the ecological systems and they influence each other.

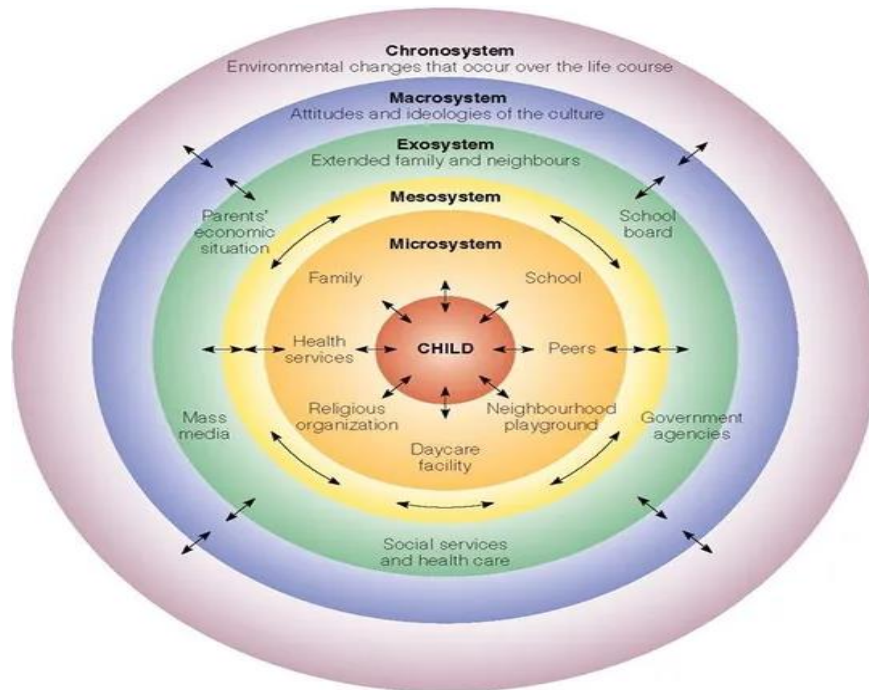


Figure 2: Summary of ecological system model. **Source:** Janse van Vuuren (2022)

Figure 2, above, shows the composition of the model and how each system continues to be influenced by the adolescent's immediate physical and social environment (Micro-system) as well as the interactions among the systems within the environment (meso-systems). Other broader social, political and economic conditions (exo-system) influence the structure and availability of micro-systems and the manner in which they affect the adolescent. Finally, social, political, and economic conditions are themselves influenced by the general beliefs and attitudes (macro-systems) shared by members of the society. Therefore, this theory also guided the explanation of

community, family and individual social demographic factors associated with psycho-social problems among adolescents in school setting. A detailed explanation of the model is given below.

2.4.2.1 Microsystem

Microsystem is the first level of Bronfenbrenner's theory and it explains things that have direct contact with the adolescent in their immediate environment, such as parents, siblings, teachers and school peers. Relationships in a microsystem are bi-directional, meaning the adolescent can be influenced by other people in their environment and is also capable of changing the beliefs and actions of other people too. Furthermore, the reactions of the adolescent to individuals in their microsystem can influence how they treat them in return. The interactions within microsystems are often very personal and are crucial for fostering and supporting the adolescent's development. A strong nurturing relationship between the adolescent and their parent is said to have a positive effect on the latter. What this also means is that distant and unaffectionate parents will have a negative effect on the adolescent's life. At microsystem level, therefore, parents, peers and teachers that do not provide the right psycho-social support to adolescents are likely to make the adolescent use substances, have depression and suicidal thoughts, and develop stigma towards mental health problems and knowledge gap of psycho-social problem management (Cheng et al., 2020; Crabb et al., 2012; Lubman et al., 2017; Shih et al., 2015; Yang et al., 2018).

2.4.2.2 Mesosystem

The mesosystem encompasses the interactions between the adolescent's microsystems, such as the interactions between the adolescent's parents and teachers, or between school peers and siblings. The mesosystem is where a person's individual microsystems do not function independently, but are interconnected and assert

influence upon one another. For example, if the adolescent's parents communicate with his or her teachers, this interaction may influence the adolescent's development. Fundamentally, a mesosystem is a system of microsystems. According to the ecological systems theory, if the adolescent's parents and teachers get along and have a good relationship, this should have positive effects on the adolescent's development, as compared to when the teachers and parents do not get along. Therefore, the relationship between parents and teachers can help to improve the adolescent's understanding of effects of substance use, depression, suicidal thoughts, stigma towards mental health problems and knowledge gap of mental health problems (Carney et. al., 2019; Skeen et al., 2019; Sloboda et al., 2009).

2.4.2.3 Exosystem

The exosystem incorporates other formal and informal social structures, which do not themselves contain the adolescent, but indirectly influence them as they affect one of the microsystems. Relevant examples of exosystems include the neighborhood, parent's workplaces, parent's friends and the mass media. These are environments in which the adolescent is not involved, and are external to their experience, but nonetheless affect them anyway. An example of exosystems affecting the adolescent's development could be if one of the parents had a dispute with their boss at work. The parent may come home and have a short temper with the adolescent as a result of something which happened in the workplace, resulting in a negative effect on the adolescent's development. Therefore, parental management of workplace or any other emotions has an impact on the adolescent's development and this has to be managed well in order to protect the adolescent from psychological harm (Botvin et. al., 1998; Hodder et. al., 2016; Ramaswamy et. al., 2009).

2.4.2.4 Macrosystem

The macrosystem focuses on how cultural elements affect adolescent's development, such as socioeconomic status, wealth, poverty, and ethnicity. Thus, the culture that individuals practice may influence their beliefs and perceptions about events that transpire in life. The macrosystem differs from the previous ecosystems as it does not refer to the specific environments of one developing adolescent, but the already established society and culture the adolescent is developing in. This can also include the socioeconomic status, ethnicity, geographic location and ideologies of the culture. For example, an adolescent living in LMICs would experience a different development than the one living in HICs. Therefore, communities where adolescents come from have an impact on how they respond to substance use, depression, suicidal thoughts, and mental health care seeking behaviours (Bendtsen et al., 2013; Högberg et al., 2008; Marti et al., 2010).

2.4.2.5 Chronosystem

Chronosystem consists of all of the environmental changes that occur over the lifetime which influence development, including major life transitions, and historical events. These can include normal life transitions such as starting school but can also include non-normative life transitions such as parents getting a divorce or having to move to a new house. Therefore, when handling adolescents' psycho-social challenges they need to understand the historical aspects of the challenges they are experiencing and the adolescents' family contexts. This knowledge will help to better understand adolescent behaviour since family situation can influence the same (Abbey, et al, 2000; Grunbaum et al., 2000; Nursalam et al., 2019; Vermeulen-Smit et al., 2015).

Figure 3 below is a conceptual framework summarising the behaviour of adolescents as guided by the two models.

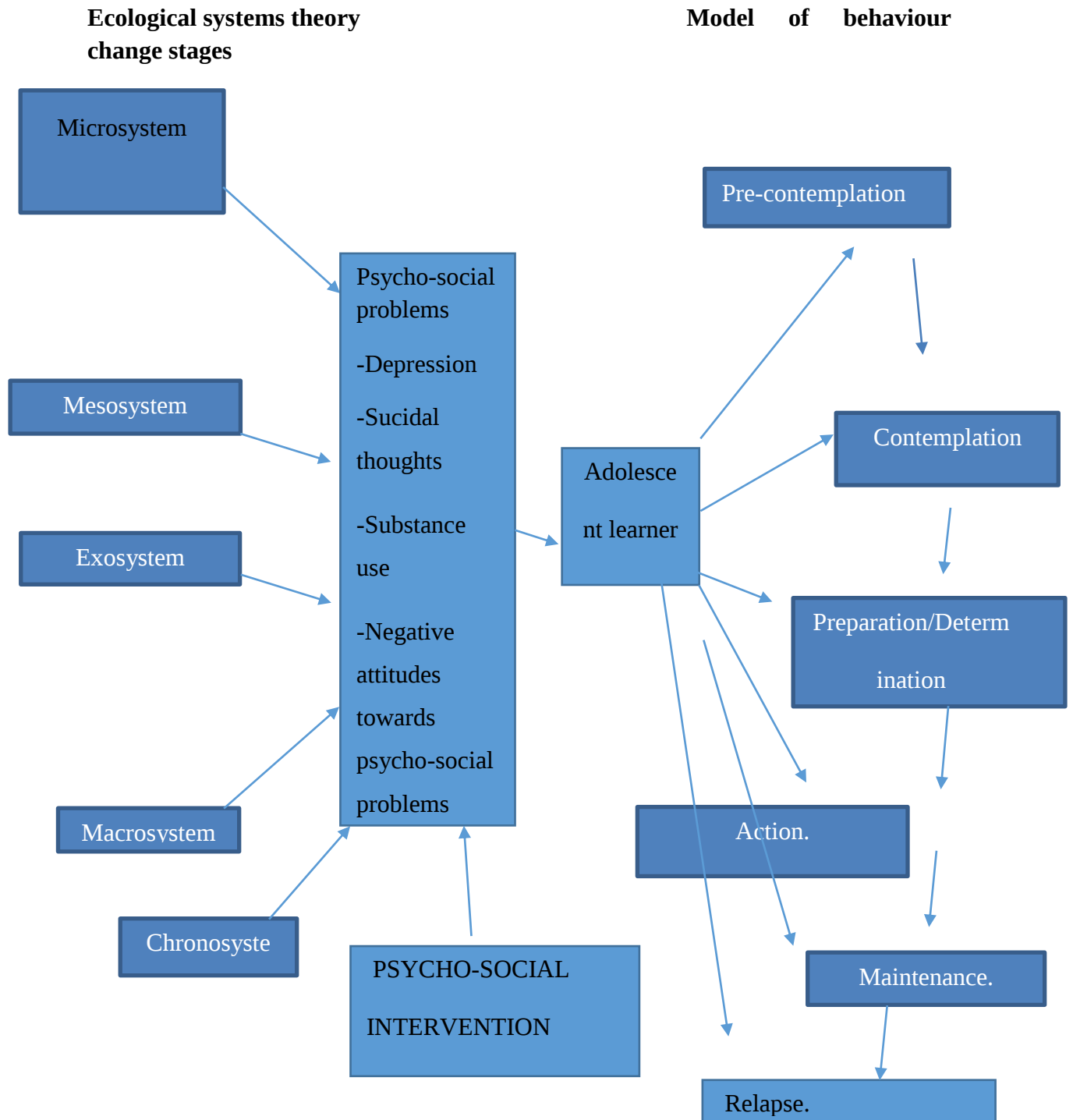


Figure 3: Conceptual Framework. **Source:** Researcher (2022)

Weakness of the models

These two models are relevant to the study, but they fail to explain how adolescent learners' cognitive responses result in behavioral change. Despite their flaws, the models remained relevant in this study because they contained the majority of the key concepts used in this study.

2.4.3 Conceptual Framework Application

The conceptual framework above describes how an ecosystem/environment can influence an adolescent learner to be at risk of psycho-social problems and the stages of behavior change that adolescents go through in response to the psycho-social problems in their environment. Therefore, the psycho-social intervention of combined approach of group counselling and psycho-education was used to address the psycho-social problems that adolescents were experiencing at study sites. The detailed explanation is as follows:

Microsystem – individual direct contact with the adolescent in their immediate environment like parents, siblings, teachers, and school peers can affect an adolescent's decision on how they respond to psycho-social problems like substance use, depression, negative attitudes towards psycho-social problems and knowledge of psycho-social problems. These situations may also affect their stages of behavior change like pre-contemplation, contemplation, preparation/determination, action, maintenance, and relapse in their environment. Therefore, there was need to address these psycho-social problems using a combined approach of group counselling and psycho-education in order for adolescents to cope with psycho-social problems.

Mesosystem – interactions between the adolescent's parents, teachers, school peers, siblings can affect an adolescent's decision on how they respond to psycho-social problems like substance use, depression, negative attitudes towards psycho-social problems and knowledge of psycho-social problems. These situations may also affect their stages of behavior change like pre-contemplation, contemplation, preparation/determination, action, maintenance, and relapse in their environment. Therefore, there was need to address these psycho-social problems using a combined approach of group counselling and psycho-education in order for adolescents to cope with psycho-social problems.

Exosystem – formal and informal social structures, neighborhood, parent's workplaces, parent's friends and mass media can affect an adolescent's decision on how they respond to psycho-social problems like substance use, depression, negative attitudes towards psycho-social problems and knowledge of psycho-social problems. These situations may also affect their stages of behavior change like pre-contemplation, contemplation, preparation/determination, action, maintenance, and relapse in their environment. Therefore, there was need to address these psycho-social problems using a combined approach of group counselling and psycho-education in order for adolescents to cope with psycho-social problems.

Macrosystem – situations like cultural elements, socioeconomic status, wealth, poverty and ethnicity can affect an adolescent's decision on how they respond to psycho-social problems like substance use, depression, negative attitudes towards psycho-social problems and knowledge of psycho-social problems. These situations may also affect their stages of behavior change like pre-contemplation, contemplation,

preparation/determination, action, maintenance, and relapse in their environment. Therefore, there was need to address these psycho-social problems using a combined approach of group counselling and psycho-education in order for adolescents to cope with psycho-social problems.

Chronosystem – events like major life transitions, historical events, starting school, parents getting a divorce and moving to a new house can affect an adolescent on how they respond to psycho-social problems like substance use, depression, negative attitudes towards psycho-social problems and knowledge of psycho-social problems. These situations may also affect their stages of behavior change like pre-contemplation, contemplation, preparation/determination, action, maintenance, and relapse in their environment. Therefore, there was need to address these psycho-social problems using a combined approach of group counselling and psycho-education in order for adolescents to cope with psycho-social problems.

2.5 Literature Review Gap

According to the reviewed literature, there was a gap in the literature, policy, and methodological designs regarding the effective way of managing psycho-social problems among adolescent learners. Therefore, this study was important, given that the current Malawi mental health policy (Malawi MHP, 2020) and national education policy (NEP,2013) do not have a clear policy guidance on management of psycho-social problems among adolescent learners. Furthermore, there was a need to investigate whether the Combined Psycho-Education and Group Counselling Approach was more effective than a single approach of psychotherapy among adolescent learners with psycho-social problems in the school setting.

2.6 Chapter Summary

The researcher used the two models in order to synthesize an understanding of factors that influence adolescents to experience psycho-social problems and the stages they go through in order to change behavior; he also suggested effective ways of managing psycho-social problems among adolescents and literature review gap was analysed. The next chapter discusses the research methodology and study design.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Chapter Overview

This chapter was guided by the mixed-methods sequential explanatory study design and pragmatism research philosophy. The researcher also discusses and justifies data collection process and instruments that were employed in the study. The chapter also elaborates how the study was conducted. Furthermore, the chapter explains how participants were recruited and finally how ethical principles were adhered to in the course of the study.

3.2 Research Paradigm

The study was guided by pragmatic research philosophy, a world view or paradigm that underpins most mixed methods research (Parvaiz et. al, 2016; Morgan, 2014; Feilzer, 2009). It is a problem-oriented research philosophy that takes the view that the best research methods are those that help to most effectively answer the research question in all spheres (Parvaiz et. al, 2016; Morgan, 2014; Feilzer, 2009). Furthermore, pragmatic research philosophy asserts that people understand and interpret reality in a variety of ways. As a result, there is no single method of conducting research to comprehend and interpret reality. Therefore, this research philosophy aided the researcher in understanding the key concepts of the qualitative and quantitative methods employed in this study.

Essentially, three approaches were involved in this study: constructivism, phenomenological and positivism. Constructivism is a research philosophical view that says knowledge is constructed from human experiences as opposed to it being discovered and self-evident (Appleton & King, 1997; Chen, Shek, & Bu, 2011; Fourie, 2015). A phenomenological approach to qualitative research, on the other hand, focuses on the commonality of a lived experience within a particular group or situation (Creswell, 2013; Eddles-Hirsch, 2015). In this case the fundamental goal of the approach was to arrive at a description of the nature of the psycho-social challenges that adolescent learners experience in secondary schools. The constructivism and phenomenological philosophical views were used when conducting a qualitative study in order to learn from school managers about the constructs and experience of mental health services and psycho-social challenges in schools, the gaps and the opportunities available in order to address the adolescent psycho-social challenges. Furthermore, constructivism philosophy holds that scientific knowledge is constructed by the scientific community, which seeks to measure and construct models of the natural world. As a result, this research philosophy was used in this study to help the researcher understand the managers' and adolescent learners' constructs about psycho-social challenges.

When it came to conducting a quantitative study, the researcher employed the positivism research philosophy. Positivists hold the view that objective reality exists 'out there' in the world (Creswell, 2009) and they maintain that social science inquiries should be objective. (Johnson & Onwuegbuzie, 2004). As such they tend to develop numeric measures of observations which are analysed through the use of software (Johnson & Onwuegbuzie, 2004). Positivism philosophical paradigm was

chosen because of the nature of this study. The ontology of the study was that psycho-education and group counselling will result in reduction in psycho-social challenges among adolescent learners (Gates et al., 2016; Klimas et al., 2014) but the reality was not known in Malawian context hence the researcher tested the intervention using quantitative measures in order to see if the change in the levels of psycho-social challenges was due to an intervention or not among adolescent learners. The epistemology of prevalence of psycho-social challenges among adolescent learners in secondary school was known in some parts of Malawi (Kutcher et al., 2017; Kubwalo et al., 2013) but little was known on prevalence and management of psycho-social problems in southern Malawi.

3.3 Research Design

The study adopted sequential exploratory mixed methods design. The sequential exploratory mixed methods design was utilized because of the nature of the study research questions which required sequencing the study so that the first phase of the study should inform the second phase of the study while conducting one study (Fetters et. al., 2013; Ivankova et. al., 2016). The findings of the first phase of the study guided how the second phase of the study should be conducted. Further, the study design was also selected based on the nature of research questions which required quantitative and qualitative data generation strategies which happened to fall under this research design. The first phase of the study was conducted in November 2020 (Qualitative study) while second phase of the study was conducted between the month of January and April 2021 (Quantitative study). In addition, the qualitative method guided the key informant study in the first phase and it intended to answer specific question number 2. While the quantitative method was conducted in the

second phase of the study and it intended to answer specific questions (1 and 3) and it was accomplished by doing a non-equivalent quasi-experimental study. Non-quasi-experimental designs have the advantage of mimicking an experiment and providing a high level of evidence without randomization, as well as being more generalizable and having better external validity than Randomized Control Trials (RCTs) in contexts where RCTs cannot be used and it was pragmatic (Schweizer et al., 2016). However, in the context of this study, the following flaws exist in the study design: The study's ability to conclude a causal association between an intervention and an outcome was limited because school selection was not randomized; however, this flaw was mitigated

by randomly selecting study participants using class streams and having schools with similar characteristics. Based on common interests, participants were randomly assigned to a control group. Secondly, participants were matched into a control group based on shared characteristics of interest. However, there could be a possibility that other factors beyond control influenced the outcome evaluation, though this was minimized by selecting an appropriate comparison group.

The qualitative method was used in order understand managers' perspective on how psycho-social challenges among adolescent learners are managed in schools and it informed the second phase of the study which was a non-equivalent groups quasi-experimental study design and utilized a quantitative method. A non-equivalent groups quasi-experimental study design is a type of design where the researcher chooses the existing groups that appear similar, but where only one of the groups experiences the treatment/intervention while the other remain a control group (Behi & Nolan, 1996; Krishnan, 2019). The quantitative method was used in this study in

order understand the prevalence of psycho-social problems among adolescent learners and to test the efficacy of a combined approach of group counselling and psycho-education in managing adolescent psycho-social challenges.

3.4 Study Population

Adolescents were targeted in this study. WHO (2014) defines an adolescent as someone who is aged between 10 to 19 years. The participants were from 2 boarding secondary schools based in urban area of Southern region of Malawi but the study participants came from both rural and urban areas of Malawi. They were about 960 adolescents in the targeted secondary schools and out these 317 adolescent participants were involved in this Non-equivalent groups quasi-experimental study. Table 1, below, shows the demographic information of study participants.

Table 1: Adolescent participant's demographics

Table 1: Study site				Table1: Control site			
		Frequency	Percent			Frequency	Percent
Gender	Male	97	59.5		Male	92	59.7
	Female	66	40.5		Female	62	40.3
	Total	163	100.0		Total	154	100.0

This study also aimed to collect data from stakeholders who were experts and in authority of managing psycho-social challenges among adolescent learners. 18 participants were involved in the study and Table 2 shows the details.

Table 2: Key Informants demographics

Department	Office	Number/percentage representation (%)	
Zomba District Council Education	District Commissioner's Office	1	2 (12.5%)
	District Social Welfare's Office	1	
	South East Education Division	1	14 (87.5%)
	Manager's Office		
	District Education Managers' Office	1	
	Head Teachers' Office at study site	1	
	Form Teachers 1-4	4	
	Chairperson of Parents and Teachers Association- at study site	1	
	Head Teachers' Office at control site	1	
	Form Teachers 1-4	4	
	Chairperson of Parents and Teachers Association-at control site.	1	
	Office of the Director of Mental Health Services in Malawi	1	2 (12.5%)
	Office of the Director of Health in Zomba District	1	
Total number of participants		18	

Table 2, above, shows the detailed characteristics of experts that were involved in the study.

3.5 Study Setting

The study was conducted at selected secondary schools in South East Education Division of Malawi. There are four districts under in South East Education Division:

Zomba, Mangochi, Balaka, and Machinga districts. Zomba was targeted because of the nature of schools it has: they meet the research requirements of a Quasi-experimental study design and results from these secondary schools were generalizable in South Eastern Education Division and Malawi as country. Based on education division registry the targeted district had about 45 secondary schools. These secondary schools are divided into Community Day Secondary Schools, Conventional Secondary Schools, District Boarding Secondary Schools, National Secondary Schools and Granted aided Secondary Schools. However, only two boarding secondary schools in the education division were targeted because they are very similar in nature (all are government-owned, same teaching and learning calendar, teaching staff have similar qualifications, all located in urban, similar total number of students and all have both boys and girls on campus). Hence these schools meet the requirement of a quasi-experimental study design because it is a requirement for a quasi-experimental study design to have participants who have the same or similar conditions in order to generate the generalizable study results.

3.6 Sample Selection

Sample size- adolescent study

This study adopted the study findings of Kutcher et al. (2017) of 70 % of depression findings as a prevalence estimate to reduce to 35% prevalence of depression as an expected outcome in adolescent learners. CI:95% & margin error of 5% and Estimated reduction =40%.

Calculating double proportion sample size in this quasi-experimental study design.

$$n = \frac{1}{(1-f)} \times \left[\frac{2 \times (Z_{\alpha} + Z_{\beta})^2 \times p \times (1-p)}{(p_0 - p_1)^2} \right]$$

Where, non-response rate, $f = 0$ proportion in control group = $q = \frac{1}{1-f}$

proportion of the participants in the new treatment group = $p = \frac{p_0 + p_1}{2}$

= $P_0=70=0.7$, $P_1=45=0.40$, therefore, $p = 0.7 + 0.40 / 2 = 0.2 = 0.2 \times 100 = 20\%$

Therefore, $N = 1 / (1-0) * [2 * (1.96 + 1.82)^2 * 0.2 * (1-0.2) / (0.40)^2]$

$$N = 1 * [2 * 7.56 * 0.2]$$

$$N = 1 * 3.024 = 3.024 * 100 = 302.4 = 305 \text{ Participants}$$

Therefore, a total of 305 participants were targeted in the study. However, due to other factors like transfers in, the number of participants in the targeted streams increased to 317 and 317 were sampled. Therefore, the sample size increased by 12 participants. These acted as a buffer in case of dropouts during the research period.

Simple random and purposive sampling techniques were used to collect data from the study participants. Adolescent students aged between 10 -19 years were randomly sampled while key informants [Education Division Manager (EDM), District Education Manager (DEM), District Health Officer (DHO), Director of Mental Health Services (DMHS), District Social welfare officer (DSWO), Head Teachers, Teachers, and Parents Teachers Associations (PTA) chairs and schools] were purposively selected. This sampling method was chosen in order to select a sample that was likely to be representative while reducing the chances of bias and thus identifying findings that are probably generalisable to targeted general population.

As Tellis (1997) warns, researchers should not only rely on a single informant, but rather seek the same data from varied sources to substantiate it. Therefore, this study collected data from varied participants. A total of 317 participants were targeted in the study, comprising of Study group (163) and Control group (154). The participants were targeted to ensure that multiple views regarding the topic were elicited. Participants were from different levels of classes and their inclusion for the interviews provided bases for “data source triangulation” (Stake, 1995).

3.7 Data Collection

Data collection was done in different phases. The details are as follows.

3.7.1 Data Collection Process

For the key informant study, data was collected using in-depth interviews approach and was guided by the structured questionnaire while the adolescent quasi-experimental study utilised the self-administered structured validated questionnaires approach. The procedures were as follows:

3.7.1.1 Study Procedures – Key Informant Study (Qualitative Study)

The nature of research question 2 in the first phase of the study called for the use of constructivism and phenomenological approaches, since the study intended to learn the constructs and experiences of psycho-social challenges that adolescent learners experience in secondary schools and how best psycho-social problems are managed within secondary school context. Study key informants were managers of the key institutions in Malawi. These included the offices of Director of Mental Health Services in Malawi (DMHS), Regional Education Managers (REMs), District

Commissioners (DCs), District Director of Health and Social Services (DDHSS), District education Managers (DEMs), Head Teachers (HTs), District Social Welfares' Office (DSWO), Form Teachers (FTs) and chairpersons of Parent Teacher Associations (PTAs). All 18 participants in the study consented to participate, and 18 interviews were conducted, one per person. Each interview lasted approximately 45 minutes to one hour. The targeted participants have expertise/ knowledge of psycho-social challenges that adolescent learners experience with school context in Malawi. The questionnaire was used to assess the forms of psycho-social support that are provided to adolescents in secondary schools.

We addressed each participant individually and conducted In-Depth Interviews (IDI) with individuals who had given their consent and expressed interest in the study. IDIs were semi-structured and included open-ended questions to obtain a comprehensive and detailed understanding of key informant perceptions of how to address prevalent psychosocial problems among adolescent learners in schools. The researchers audiotaped the conversations, then translated them into English and transcribed them. There was no information about the participant's personal information. The open-ended questions served as discussion starters. We began by asking broad questions on broad issues, followed by more specific questions and probes regarding the participants' responses. Participants were urged to delve deeper into their comments in order to elicit detailed accounts of their feelings and thoughts. The structured questionnaire is attached as Appendix 1.

3.7.1.2 Study Procedure-adolescent Quasi-Experimental Study

(Quantitative study)

All the potential participants were approached by the researcher in the collective waiting area of the targeted schools. The research study targeted 8 streams of classes, which were randomly sampled from all the streams of classes that were available at the targeted secondary schools. An ordinary normal class (stream) had about 35-50 adolescents in the attendance register. In order to have 4 representative class streams at each targeted school a random number generator in SPSS was used. Finally, 317 participants were randomly selected from Forms 1-4 (Year 1-4) at the two targeted boarding secondary schools. The distribution of the informed consent forms to teens and Parent Teacher Chairpersons who represented parents was done. Further, the school managers also gave prior consent for adolescent learners to participate in the interviews. Form Teachers explained to the participants to go to a specific (waiting) room, where they were told about the study. They were also asked whether they wanted to participate in the study or not. At the first stage, they were informed of the study and what it entailed and the consent processes were also explained. A parental consent form (in either English or Chichewa – based on participant's language preference) was sent to Chairpersons of Parents and Teacher Association through the office of Head Teacher and after approval participants were involved in the study. In order to reduce attrition due to lack of parental consent, follow-up calls were made to remind the Head Teachers. If the adolescent consented, they were allowed to participate in the study. Contact phone numbers of a legal guardian were available at the school and the research team utilized them. Research assistants and the researcher were together at every data collection visit. The research assistants were graduates

with Bachelor of Nursing in Mental Health degree from the University of Malawi and were not involved in providing usual intervention services at the schools. They were fluent English and Chichewa speakers and were able to freely conduct the research study without language problems. The researcher was there only to supervise. Besides, the researcher doesn't work at the sampled schools. After obtaining both parental consent and adolescents' assent, research assistants administered the survey questionnaire which took approximately 45 minutes.

The use of research assistants in data collection was done in order to minimize bias. It was feared that teachers based at the schools might have interfered with adolescent's expression of psycho-social challenges because it is not allowed for an adolescent to take substances by law and participants could have felt bad if teachers knew that they were taking substances. Furthermore, participants might have thought that teachers would not treat them fairly like friends because they used the substances. Data collection took place in a quiet, private space. The study participants were divided into two groups: the control group and study group. Both groups comprised one boarding secondary school. The findings were generalizable to Malawi's southern region because the two targeted secondary schools were in similar settings and under similar conditions. Furthermore, the findings are applicable to the southern region because the conditions of the targeted schools are comparable to the majority of Malawi's public secondary schools, particularly those in the southern region. Furthermore, because the participants were drawn from both rural and urban areas and had similar circumstances, the results were generalizable to Malawi's southern region. Furthermore, the findings are generalizable to the Southern Region because the conditions of the targeted schools are similar to those of the majority of Malawi's

public secondary schools, particularly those in the southern region. Consent forms are attached as Appendix 2.

3.7.2 The Data Collection and Research Implementation Phases

3.7.2.1 Data Collection- Measures

Purposively, data was collected from Key Informants - DC, DMHS, HT, FT, DDHSS, EDM, DEM, DHO, DMHS, DSWO, Teachers, and PTA chairs. This targeted sample made the researcher to establish if psychosocial services exist in secondary schools or not. Further, the researcher established expert opinion on how these psycho-social problems can be managed. A structured questionnaire was used to collect and assess the expert views and in-depth interviews were conducted.

3.7.2.2 Training of Intervention Implementers

The research assistants were trained by the principal researcher on how to collect the data from the study participants. A booklet was developed and used during intervention phase. Information contained in the booklet was based on the research data collected and was analyzed as well as from other relevant literature sources. Four implementers who had covered an adolescent psychology module during undergraduate studies were identified by the Head Teacher at the target school. After the implementers had been identified, they were trained by the principal researcher and Project Officer on how to offer group counseling and psycho-education among adolescent learners. Implementers (Teachers) were trained on 2 March 2021.

The Project Officer was a trained mental nurse with a Bachelor's degree in Mental Health Nursing from the University of Malawi and was teaching at certain institution of higher learning in Malawi and had vast experience in similar adolescent mental health project management. The main role of the Project Officer was to supervise the implementers during group counselling and psycho-education sessions. The use of lay health workers (Teachers) in implementing a psychological intervention for psycho-social challenges in a community set-up has been tested to have no problems in Zimbabwe (Chibanda et al., 2016). Besides, World Health Organisation recommends training of lay health professionals to offer mental health services in countries where there is a gap in mental health services (WHO, 2016). Hence, the choice of use of teachers in the targeted schools was not a strange phenomenon. It was also a helpful approach in order to have a sustainable way of managing psycho-social challenges among adolescents after the research project had finished. Furthermore, teachers leading in mental health interventions in schools have also been found to be effective in Uganda (McMullen & McMullen, 2018).

3.7.2.3 Adolescent Student Assessment

Baseline and evaluation cross-sectional studies on adolescent students were done. Data were collected through structured questionnaires among adolescent study participants in order to establish their social demographics, prevalence of depression, suicidal thoughts, knowledge on mental health problems, attitudes towards mental health problems and psychoactive substance use.

3.7.2.4 A Quasi-Experimental Study- Intervention Phase

Statistical assumptions

T-test was used in the study. The T-test was used because the researcher wanted to compare the intervention's performance in the control and study groups(Eliopoulos et al., 2007). Sometimes the difference between the two study groups is very clear: an experimental treatment has clearly changed the behavior of the subjects. More often than not in psychology, the difference between conditions is not obvious; in these cases, the use of a t-test can assist the researcher in determining whether the difference between conditions was "real" or merely due to chance fluctuations from one time of testing to the next. The t-test allowed researcher to determine whether the mean of one condition differed significantly from the mean of another. A t-test was used to calculate whether or not differences seen between the control and experimental group are a factor of the manipulated variable or simply the result of chance(Eliopoulos et al., 2007). Furthermore, in order to determine the efficacy of the combined approach of psycho-education and group counseling intervention, an Independent Samples T-Test and Paired Samples T-Test analysis were conducted and presented as Chi-square and Cohen d.

Approaches to quasi-experimental study

Two approaches were involved during the quasi-experimental study.

1. Pre/post-intervention Comparison

This involves comparing rates of the outcome of the interest in populations before the intervention is introduced, with rates in the same population after they have received the intervention. Such a comparison requires the collection of baseline data which is then used as the control data.

2. Intervention versus Control Group

It involves two groups, where the one group receives an intervention while the other is the control site. At both study and control sites, there were pre-post-intervention cross-sectional studies. Furthermore, an intervention was given to a study site while the control site was given a standard care (i.e. the usual care that adolescents get in public schools). This study involved two groups as discussed below:

Study Group: 1 boarding secondary school was given an intervention for two months. The intervention lasted two months because the secondary school term in Malawi was three months long, with the first two weeks dedicated to orientation and logistical organization and the last two weeks dedicated to end-of-term exams. Furthermore, a review of related literature reveals that similar study interventions have been provided between 5 weeks and 1 year, with the majority of studies providing intervention periods of 14-16 weeks (Are et al., 2022; Bass et al., 2006; Bolton et al., n.d.; Swartz et al., 2017; Toth et al., 2013).

Sixteen sessions (comprising of two sessions per week, with a total of 8 sessions per month) were conducted face-to-face with students by the implementers. In order to check fidelity, a checklist was developed and all participants were recorded throughout the study period. The sessions covered the following topics: causes of depression and use of psychoactive substances, assertiveness, stress management, prevalence and risks for depression, prevention and management of depression and use of psychoactive substances, the myths and facts about mental health and mental health problems, positive and negative attitudes about mental health, the identification of activating events and negative beliefs, and self-management skills such as problem solving, communication and interpersonal skills, conflict resolution,

anger management, and positive coping while utilizing the cognitive behaviour technique and problem solving technique approaches.

In order to maintain internal validity and privacy, teachers (implementers) and participants were not aware of the diagnosis of psycho-social challenges. All sessions were audio recorded for the purposes of improving the next session. The intervention included information, efficacy (self and interpersonal-social) and skills (coping and practical) building package.

Control group: 1 boarding secondary school was not being given an intervention for two months. In order to maintain internal validity and privacy, teachers (implementers) and participants were not aware of the diagnosis of adolescent psycho-social problems.

3.7.2.5 Evaluation Study

An evaluation study was done. Recollection of data in the **study** and **control groups** was done in order to see if any change has occurred secondary to intervention or not. This was done 2 days after the two months' intervention period.

3.8 Measures

Data were collected using the following measures: *Socio-demographics questionnaire*: Information to be collected was regarding participant's age (young/older adolescent), gender (male/female), and residence (rural/urban). The prevalence of psychoactive substance use was assessed by *Alcohol, Smoking and Substance Involvement Screening Test-(ASSIST-Y) For Young People* questionnaire,

prevalence of depression were assessed using the *Patient Health Questionnaire for Depression (PHQ-9)*, participant attitudes was assessed using *Attitudes Toward Serious Mental Illness Scale-Adolescent Version (ATSMI-AV)* questionnaire, and Mental health knowledge was assessed using *20-Item Mental Health Knowledge questionnaire* (Borghero et al., 2018; Kutcher et al., 2017; Pinto-Foltz et al., 2011; Radloff, 1977; WHO, 2016).

3.8.1 Attitudes toward Serious Mental Illness Scale-Adolescent Version Questionnaire

Studies have revealed that mental illness stigma is there and strategies for reducing stigma among the general population are needed. However, less is known about how children and adolescents view persons with mental illness. In this study, we assessed the attitudes towards mental health problems among adolescent learners using the Attitudes toward Serious Mental Illness Scale-Adolescent Version (ATSMI-AV). ATSMI-AV has been used in different countries like Singapore and researchers found that 44.5% of adolescents had negative attitudes towards mental illness (Pang et al., 2017).

The ATSMI-AV is comprised of 24 items and was developed to tap various attitudes about mental illness that are relevant to adolescents. The 24-item measures include items about perceptions of violence, social avoidance, embarrassment if diagnosed as having a mental illness, and personal invulnerability to mental illness. Responses to each item were on a 5-point scale from 1 (indicating “completely disagree”) to 5 (indicating “completely agree”). In this study we used this questionnaire and 317 participants completed the questionnaire. The structured questionnaire is attached as Appendix 1

3.8.2 Patient Health Questionnaire for Depression

Patient Health Questionnaire for Depression (PHQ-9) Scale is a nine-item questionnaire used to assess depression. PHQ-9 is a widely used screening tool for identifying depressive symptoms in general population including adolescents (Kutcher et al., 2017). The PHQ-9-item scale is a measure of study participants' feelings of depression and behaviors in the past week. PHQ-9 has been validated in Malawi, and has been found to be an effective instrument in measuring adolescent depression in Malawi (Kutcher et al., 2017). In this study we used this questionnaire and 317 participants completed the questionnaire. The structured questionnaire is attached as Appendix 1

Interpretation of Total Score

Total Score Depression Severity

1-4 = Minimal depression

5-9 = Mild depression

10-14 = Moderate depression

15-19 = Moderately severe depression

20-27 = Severe depression

3.8.3 Mental Health Knowledge Questionnaire

Globally, mental disorders make up about 33% of the burden of illness in adolescence and young adulthood (WHO, 2013). Hence, there was need to assess the adolescents' mental health knowledge in Malawian schools so that appropriate intervention would be applied if need be. The 20-Item Mental Health Knowledge questionnaire (MHKQ) is a standardized multifaceted 20-item instrument and was developed by the Chinese Ministry of Health in 2009 to assess public knowledge and awareness of mental health (Wang et al., 2013). It has been used in different countries to assess mental

health knowledge of the study participants and has been found to be an effective way of assessing knowledge. MHKQ has 20 statements about mental health that require respondents to choose ‘true’, ‘false’ or ‘unknown’. One point is given to each correct answer, with incorrect or unknown responses receiving 0 points. In this study we used this questionnaire and 317 participants completed the questionnaire. The structured questionnaire is attached as Appendix 1.

3.8.4 ASSIST-Y Questionnaire

Substance use was measured using the Alcohol, Smoking and Substance Involvement Screening Test for Young people (ASSIST-Y) questionnaire. This is a WHO questionnaire and measures substance use on a Likert scale. The ASSIST-Y questionnaire is a 7-item tool which categorizes and measures alcohol and substance use into three different levels: No risk, Moderate risk and High risk. The cut-off scores are as follows: a score of 0-1 = No risk, a score of 2-11= Moderate risk and a score of 12 and above =High risk. Further, it assesses alcohol, as well as substance and drug use over a period of 3 months (Government-of-South-Australia, 2017). ASSIST-Y questionnaire is intended for use with young people aged between 10-17 years and can be used in primary health care settings (Government-of-South-Australia, 2017). ASSIST-Y questionnaire has been found to be effective in assessing substance use among adolescents in different countries (Humeniuk et. al., 2016; Källmén et. al., 2019). Despite the fact that ASSIST-Y has been validated among adolescents aged between 10 -17 years, it can equally be used to assess alcohol and substance use among all adolescents aged between 10-19 years because adolescents in this age population share similar behavioural patterns. Further, although the ASSIST-Y questionnaire has not been validated in Malawi, it is nevertheless a reliable and

effective instrument in measuring alcohol and substance among young people (Government-of-South-Australia, 2017; Humeniuk et al., 2016; Källmén et al., 2019). The questionnaire assessed use of substances like alcohol, tobacco, cannabis and illegal drugs. The ratings of the measure were coded 0 for no substance use and 1 for substance use. In this study we used this questionnaire and 317 participants completed the questionnaire. The structured questionnaire is attached as Appendix 1.

3.9 Data Analysis

Qualitative data was collected from the key Informants. Data was coded, categorized, synthesized, theorized, and compared to key text passages that emerged during the interviews. In addition, the data was analyzed based on the themes and contents that emerged from the responses. Template analysis was used as the method of analysis (Crabtree, 1999 & King, 2012). A coding 'template' was constructed a priori based on the literature review, and the data were subsequently coded in line with the template. As a result, new codes were constructed to indicate themes that were found in the data but weren't identified in the original template. After that, the data were recoded. After finding quotations relevant to the research themes, researchers studied in-depth interview transcripts and agreed on acceptable codes (Corbin, 1997). This self-reflective technique was created to prevent data manipulation throughout the analysis process.

Quantitative data was collected from the adolescent study and analyzed using SPSS version 26 software programme. Data was coded in order to analyze data using SPSS software program.

Descriptive statistics were conducted to explain the characteristics of the sample. Frequency distributions and categorical variables of demographics like gender (male/female), age (young/older adolescent), and residence (rural or urban) were also be analyzed.

The associations between depression, psychoactive substance use, suicidal thoughts, attitudes towards mental health problems, knowledge gap mental health problems as the dependent variables, while participant social demographic characteristics as independent variables were analysed by SPSS v26.

In addition, in order to determine the associations, binary logistic models were developed to control for demographics variables [including gender (male/female), age (young/older adolescent), and residence (rural or urban)].

The results of the regression models were reported as odds ratios (ORs) with 95% confidence intervals (CIs) as a level of confidence of the results. An odds ratio (OR) is a measure of association between an exposure and an outcome. The OR represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. In addition, an Adjusted Odds Ratio (AOR) is an odds ratio that controls for other predictor variables in a model. It gives you an idea of the dynamics between the predictor variables. When OR is high it means the chance of a particular event occurring is high and the vice versa. Further, OR is said to be high if the score is more than 1 and OR is said to be low if the score is 1 or less.

Confidence interval (CI) is a range of values that is likely to include a population value with a certain degree of confidence.

3.10 Ethical Considerations

The research proposal was presented to the University of Malawi, School of Education, Eastern Region Education Division Managers' office and targeted schools' management and was ethically approved.

3.10.1 Informed Consent

Informed assent among adolescents aged between 10 – 17 years and consent were taken among adolescents aged between 18-19 years. Everything was explained to them in detail and they were given an opportunity to ask questions (in what is known as teach back process). Informed consent was also sought from a legal parent or guardian through the Parents-Teacher Association (PTA) committee chair in order to participate in this research study. Adolescents aged 18-19 years were provided with informed consent as required by law. A legal guardian or parent was someone who has a registered student with the school to be the official guardian meant to take care of an adolescent attending that specific school. In case they wanted further clarifications, the researchers' phone number was available. Parents/Guardians/teachers were free to come and see the researcher and research assistants at the school during study period if they wanted to know more about the study. Both researchers and study participants signed the consent form. If participants decided not to participate, their decisions were respected.

3.10.2 Privacy and Confidentiality

Confidentiality was maintained at all times. Participants' names were not used. Instead, allocated numbers were used on the questionnaire. The research assistants were not allowed to divulge the participant's information and the interviews took place in a private and quiet room at the school. The data were stored safely and the

questionnaires were locked away in a safe office at the college. The consent forms were kept separately from the completed questionnaires in order to avoid disclosure of clients' privacy.

3.10.3 Risks and Benefits

The main benefit for the participants were increased knowledge of mental health. Those who use psychoactive substances and identified by the ASSIST-Y questionnaire to have significant use and risky use level were to be referred to relevant authorities for counseling and further management and if they have other needs that have to be referred, it was done as required. For depression, if the participant's scores are equal to or above 10, they were considered to be severely depressed based on PHQ-9 and were referred to relevant authorities for counseling and further management. If an adolescent mentions suicidal ideation, they were referred as well. Although the study team did not expect the study to cause any significant distress, participants who experienced mild distress or discomfort were referred by the research assistants to the principal researcher who is a Psychology expert by training and experienced in counseling adolescents. The principal researcher counselled participants until they were calm. The overall risk classification of this study was minimal, as the study did not have invasive procedures. Research Assistants were asked to sign confidentiality forms so that they adhere to the ethical standards.

3.10.4 Dissemination of Results

Manuscripts have been submitted for publication in peer reviewed journals. Copies of the final report and published papers will also be submitted to the University of Malawi Library and School of Education. Further, the findings of will be shared to the

targeted schools and at International Research Dissemination Conferences in Malawi and the Sub-Sahara region.

3.11 Chapter Summary

This chapter looked at the study design, research philosophy, sampling technique, data collection, assessment tools, data analysis, ethical considerations, and dissemination of results. The next section discusses the study findings.

CHAPTER 4

DISCUSSION OF FINDINGS

4.1 Chapter Overview

This chapter presents a discussion of findings of the study. To place ourselves in context, this study sought answers to the following three research questions: (1) What is the prevalence of psycho-social challenges among adolescent learners? (2) How are psychosocial problems managed among adolescent learners? and (3) What is the effect of combined psycho-education and group counselling approach in supporting adolescents with psycho-social challenges? Thus, we proceed to share and discuss findings in response to these broad questions within the behaviour change and ecological systems models and other relevant studies.

4.2 Prevalence of Psycho-social Challenges among Adolescent Learners

In this study, we sought to establish if there was a discernible relationship between demographic variables such as gender, residence, and age and adolescent psychosocial challenges. A total of 317 participants were sampled to participate during the baseline study. 163 of these participants were at the study site while 154 were at the control site. During evaluation study, a total of 261 participants were sampled 158 of the participants were at the study site and 103 were at the control site. It was observed that some targeted participants dropped out of school because of different reasons. That is why there was a decrease in number of participants during the evaluation study. Furthermore, to put ourselves in context of the study, it is worthy to look at the prevalence of the targeted psycho-social challenges (depression,

substance use, attitudes towards mental health problems and knowledge of mental health problems) that were established by this study.

4.2.1 Prevalence of Positive Attitudes towards Mental Health Problems

The study found that the prevalence of positive attitudes towards mental health problems among adolescents was 26% at study site and 31% at control site: Table 3 below shows the details.

Table 3: Prevalence of positive attitudes towards mental health problems

Pre-intervention (Prevalence)	Positive attitudes	
	Study site Total (N= 163)	Control site Total (N=154)
	N(%)	N(%)
	42(26)	47(31)
Post-intervention (Prevalence)	Positive attitudes	
	Study site Total (N=158)	Control site Total (N=103)
	N(%)	N(%)
	87(55)	28(27)

Table 3, above, shows that adolescents improved attitudes towards mental health problems and ranged from 26% to 55% at the study site. At the control site, the prevalence of positive attitudes towards mental health problems ranged from 31% to 27% during pre and post-intervention period. This could be due lack of specific psycho-social support services for mental health problems management.

In terms of attitudes towards mental health problems and gender, the study found that there was a close association between gender and psycho-social experiences. Table 4 under Appendix 4, below, shows the average prevalence of positive attitudes towards mental health problems among adolescents during pretest and posttest assessment.

39% female adolescents had positive attitudes towards mental health problems as compared 54% of males at the study site while 33% females had positive attitudes towards mental health problems as compared 50% of males at the control site. Table 4 shows that at the study site, the prevalence of positive attitudes towards mental health problems among females before intervention was 30% and after the intervention it was 43%. Among males, on the other hand, the prevalence was 70% before intervention and 57% after intervention. At the control site, the prevalence of positive attitudes towards mental health problems before intervention was 64% among males and 54% after intervention. Among females it was 36% before intervention and 46% after intervention. These findings show that more males had positive attitudes towards mental health problems than females and the intervention was able increase the prevalence of positive attitudes towards mental health problems among females both at study and control sites. The prevalence of positive attitudes towards mental health problems had also decreased among males. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change. The model states that behavior change goes through stages and a human behaviour can be maintained.

In terms of statistical associations, males were more likely to be associated with positive attitudes towards mental health problems than females both at study site (AOR=1.825, 95% CI= (0.868-3.841) and at control site (AOR=1.258, 95% CI= (0.611-2.588) before intervention. After intervention, there was an association of being male and having positive attitudes towards mental health problems at study site (AOR=1.390, 95% CI= (0.740-2.610) while at control site there was no association (AOR=0.649, 95% CI= (0.269-1.564). This means that males were more likely to have positive attitudes towards mental health problems than females. A similar study

also found that being male was associated with positive attitudes towards mental health problems (Quirke et. al., 2021).

In terms of attitudes towards mental health problems and age, the study found that there was a close association between age and attitudes towards mental health problems. Table 5 under Appendix 4, below, shows the average prevalence of positive attitudes towards mental health problems among adolescents who had positive attitudes towards mental health problems during pretest and posttest assessment. 38% young adolescents (10-15 years) had attitudes towards mental health problems as compared 62% of older adolescents (16-19 years) at the study site while at the control site 47% young adolescents (10-15 years) had positive attitudes towards mental health problems as compared 53% of older adolescents.

Table 5 further shows that at the study site, the prevalence of positive attitudes towards mental health problems among young adolescents (10-15 years) before intervention was 47% and after the intervention it was 28%. This could be due to other factors such as the approach used by the psycho-social intervention implementers or the participants relapsed as guided by the behavioral change model, which suggests that behavior can relapse at any time during the behavioral change model process. While among older adolescents (16-19 years), before intervention the prevalence was 53% and after intervention it was 72%. At the control site, the prevalence of positive attitudes towards mental health problems before intervention was 39% among young adolescents (10-15 years) and after intervention the prevalence was 54%. Among older adolescents (16-19 years), before intervention it was 41% and after intervention it was 46%. Positive attitudes toward mental health problems may have increased at the control site due to existing psycho-social services

provided to students by secondary schools. Furthermore, the findings suggest that older adolescents had more positive attitudes towards mental health problems compared to young ones. Generally, psycho-social intervention was able to increase the positive attitudes towards mental health problems among adolescents at the study site as prevalence of positive attitudes towards mental health problems increased after an intervention in both young and old adolescents.

However, the available psychosocial interventions at the control site were able to increase the prevalence of positive attitudes towards mental health problems among younger adolescents (10-15 years). The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where participants' positive attitudes towards mental health problems increased with the intervention that was given in this project and the already available psycho-social interventions in schools.

In terms of statistical associations, being a younger adolescent (10-15 years) was associated with positive attitudes towards mental health problems (AOR=2.496, 95% CI= (1.209-5.157) at study and at control sites (AOR=1.679, 95% CI= (0.803-3.511) before the intervention. Further, after the evaluation study at control site it was found that being a young adolescent was associated with positive attitudes towards mental health problems (AOR=2.452, 95% CI= (1.010-5.954). This means that being a younger adolescent was a factor that may influence positive attitudes towards of mental health problems.

In terms of attitudes towards mental health problems and residence, the study found that there was a close association between residence and attitudes towards mental health problems. Table 5 under Appendix 4, below, shows the average prevalence of positive attitudes towards mental health problems among adolescents who had positive attitudes towards mental health problems during pretest and posttest assessment. 70% of adolescents from rural areas had positive attitudes towards mental health problems as compared 30% of adolescents from urban areas at the study site while at the control site 67% adolescents from rural areas had positive attitudes towards mental health problems as compared to 33% of adolescents from urban areas.

Table 6 below, shows that at the study site, the prevalence of positive attitudes towards mental health problems among adolescents from rural areas before intervention was 70% and after the intervention it was 69%. Among adolescents from urban areas, on the other hand, the prevalence was 30% before intervention and it was 31% after intervention. At the control site, the prevalence of positive attitudes towards mental health problems before intervention was 70% among adolescents from rural areas and after intervention the prevalence was 64%. Among adolescents from urban areas, on the other hand, the prevalence was 30% before intervention and 36% after intervention.

The findings suggest that more adolescents from rural areas had positive attitudes towards mental health problems compared to adolescents from urban areas. Generally, psycho-social intervention was able to increase the positive attitudes towards mental health problems among adolescents at the study site as prevalence of positive attitudes towards mental health problems increased after an intervention among both

adolescents from rural and urban areas. However, the available psychosocial interventions at the control site were able to increase the prevalence of positive attitudes towards mental health problems among adolescents from urban areas and not those from rural areas. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behavior change goes through stages and a human behaviour can be maintained or changed with an action. This happened both at study and control sites, where participants' positive attitudes towards mental health problems increased with the intervention that was given in this project and the already available psycho-social interventions at control site.

In terms of statistical associations, being an adolescent from rural area was associated with positive attitudes towards mental health problems (AOR=1.706, 95% CI= (0.810-3.592) at the study site before intervention. Further, there was no association for being an adolescent from rural or urban area after intervention while at the control site both during baseline and evaluation study there was no association between residence and positive attitudes towards mental health problems. This means that being an adolescent from rural area was a significant factor that may have influenced the positive attitudes towards of mental health problems at study site before the intervention.

4.2.2 Prevalence of Knowledge of Mental Health Problems

The study found that the prevalence of positive attitudes towards mental health problems among adolescents was 23% at the study site and 25% at the control site: Table 7, below, shows the details.

Table 7: Prevalence of knowledge of mental health problems

Pre-intervention	Knowledge of Mental illnesses	
(Prevalence)	Study site Total (N= 163)	Control site Total (N=154)
	N (%)	N (%)
	37(23)	39(25)
Post-intervention	Knowledge of mental illnesses	
(Prevalence)	Study site Total (N=158)	Control site Total (N= 103)
	N (%)	N (%)
	110(70)	24(23)

Table 7 above shows that adolescents had reduced knowledge about mental health problems. However, the knowledge about mental health problems improved with the intervention and it ranged from 23% to 70% at the study site while at the control site there was reduced level of knowledge of mental health problems and it ranged from 25% to 23% during pre and post-intervention period. A similar study also revealed that adolescents have some form of knowledge about mental health problems and this has also been observed in different countries including Malawi and Tanzania (Kutcher et al., 2019).

Knowledge of mental health problems and gender. The study found that there was a close association between gender and knowledge of mental health problems. Table 8 under Appendix 4, below, shows the average prevalence of knowledge about mental health problems among adolescents during pretest and posttest assessment. It shows that 47% female adolescents had knowledge about mental health problems as compared 54% of males at the study site while at the control site 44% females had

knowledge about mental health problems as compared 57% of males. Table 8 shows that at the study site, the prevalence of knowledge about mental health problems among females before intervention was 50% and after the intervention it was 43%. Among males, the prevalence was 50% before intervention and 57% after intervention. At the control site, the prevalence of knowledge about mental health problems before intervention was 46% among males and after intervention it was 67% while among females it was 54% before intervention and 33% after intervention. The findings show that males had more knowledge of mental health problems compared with females and the intervention was able increase of knowledge about mental health problems among males and females at the study site. At the control site on the other hand, there was an increase in mental health knowledge about mental health problems among males while there was a decrease in knowledge among females. The increase in knowledge about mental health problems among males could be due to some forms of psycho-social support among adolescents in schools.

In terms of statistical associations, males were more likely to be associated with knowledge gain about mental health problems than females both at the study site after the intervention (AOR=1.491, 95% CI= (0.752-2.959) while there was no association at the control site. This means that males were more likely to have knowledge of mental health problems than females. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behavior change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where behavior change was implemented and maintained.

In terms of knowledge of mental health problems and age, the study found that there was a close association between age and knowledge of mental health problems. Table 9 under Appendix 4 below shows the average prevalence of knowledge of mental health problems among adolescents who had knowledge of mental health problems during pretest and posttest assessment. It shows that 33% young adolescents (10-15 years) had knowledge of mental health problems as compared to 67% of older adolescents (16-19 years) at the study site while 39% of young adolescents (10-15 years) had knowledge of mental health problems as compared 61% of older adolescents at the control site. Table 9 further shows that at the study site, the prevalence of knowledge of mental health problems among young adolescents (10-15 years) before intervention was 31% and after the intervention it was 34%. Among older adolescents (16-19 years), before intervention the prevalence was 69% and after intervention it was 66%. At the control site, the prevalence of knowledge of mental health problems before intervention was 23% among young adolescents (10-15 years) and after intervention the prevalence was 54%. Among older adolescents (16-19 years), it was 77% before intervention and 46% after intervention.

The findings suggest that older adolescents had more knowledge about mental health problems compared to young ones. Generally, psycho-social intervention was able to increase knowledge of mental health problems among adolescents at the study site as prevalence of knowledge of mental health problems increased after an intervention in both young and old adolescents. However, the available psychosocial interventions at the control site was able to increase the knowledge of mental health knowledge among younger adolescents (10-15 years) at significant level. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that

behaviour change goes through stages and a human behaviour can be maintained and if you take an action behavior can be improved. This happened both at study and control sites, where participant's mental health knowledge increased with the intervention that was given in this project and the already available psycho-social interventions in schools.

In terms of statistical associations, being a younger adolescent (10-15 years) was associated with knowledge of mental health problems (AOR=1.704, 95% CI= (0.780-3.719) at study and at control sites (AOR=2.409, 95% CI= (0.950-6.106) after the intervention. This means that being a younger adolescent was a factor that may influence to have the knowledge of mental health problems.

In terms of knowledge of mental health problems and residence, the study found that there was a close association between residence and knowledge of mental health problems among adolescents. Table 10 under Appendix 4, below, shows the average prevalence of knowledge of mental health problems among adolescents who had knowledge of mental health problems during pretest and posttest assessment. It further shows that 68% of adolescents from rural area had knowledge of mental health problems as compared 32% of adolescents from urban areas at the study site. At the control site, on the other hand, 72% of adolescents from rural areas had knowledge of mental health problems as compared to 28% of the adolescents from urban areas.

Table 10 also shows that at the study site, the prevalence of knowledge of mental health problems among adolescents from rural areas before intervention was 61% and after the intervention it was 74%. Among adolescents from urban areas, before intervention the prevalence was 39% and after intervention it was 36%. At the control

site, the prevalence of knowledge of mental health problems before intervention was 69% among adolescents from rural areas and after intervention the prevalence was 75%. Among adolescents from urban areas, it was 31% before intervention and 25% after intervention.

The findings suggest that there were more adolescents from rural areas that gained knowledge about mental health problems compared to adolescents from urban areas. Generally, psycho-social intervention was able to increase knowledge of mental health problems among adolescents in both rural and urban areas at the study site as prevalence of knowledge of mental health problems increased after an intervention. However, the available psychosocial interventions at the control site were not able to increase the knowledge of mental health knowledge among adolescents from both rural and urban areas. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behavior change goes through stages and a human behaviour can be maintained and if you take an action behavior can be improved. This happened both at study and control site, where participant's mental health knowledge increased with the intervention that was given in this project while at the control site there was change in behavior.

In terms of statistical associations, being an adolescent from a rural area was associated with knowledge of mental health problems (AOR=1.325, 95% CI= (0.629-2.793) at the study site after an intervention while before an intervention there was no association. Similarly, the study revealed that there was no association between being from rural or urban area and knowledge of mental health problems both at baseline and after the intervention study at control site. This means that being from a rural area

was a factor that might have influenced the knowledge gained about mental health problems among adolescents at the study site.

4.2.3 Prevalence of Substance Use

The study found that the prevalence of substance use among adolescents was 31% at the study site and 22% at the control site: Table 11, below, shows the details.

Table 11: Prevalence of substance use

Pre-intervention	Substance use	
(Prevalence)	Study site Total (N= 163)	Control site Total (N=154)
	N (%)	N (%)
	51(31)	34 (22)
Post-intervention	Substance use	
(Prevalence)	Study site Total (N=158)	Control site Total (N= 103)
	N (%)	N (%)
	41 (26)	10 (10)

Table 11 above shows that substance use is prevalent among adolescents, and that at the study site it ranged from 31% to 26%. This shows that the intervention had positive impact on substance use because it was able to reduce the prevalence of depression while at the control site it ranged from 22% to 10%, the decrease could be due available psycho-social support services in school during pre and post-intervention period. However, a similar study in South Africa found a higher prevalence of substance use of 56.5% among adolescents (Tshitangano & Tosin, 2016).

In terms of substance use and gender, the study found that there was a close association between gender and substance use. Table 12 under Appendix 4, below,

shows the average prevalence of substance use among adolescents who were diagnosed with substance use during pretest and posttest assessment. It indicates that 34% of female adolescents were using substances as compared 66% of males at the study site. At the control site, 31% females had such substance use experiences as compared 69% of males. Table 12 also shows that at the study site, the prevalence of substance use among females before intervention was 24% and after the intervention it was 44%. This could imply that psychosocial intervention was ineffective in reducing the prevalence of substance use among females, but it could also be due to other factors, such as peer pressure, as suggested by the ecological systems model, which suggests that an adolescent's behavior can be influenced by their environment. Among males, the prevalence was 76% before intervention and 56% after intervention. At the control site, the prevalence of substance use before intervention was 79% among males and it was 60% after intervention. Among females, it was 21% before intervention and 40% after intervention.

The findings show that more males were using substances compared to females and the intervention was able reduce the prevalence of substance use among males and not among females at the study site. The use of substances among adolescents could be due to peer pressure. For example, seven studies conducted in USA, South Africa, Viet Nam and Uganda among young people aged between 11- 25 years also found that substance use was associated with peer pressure (Chauke, van der Heever, & Hoque, 2015; Kaljee et al., 2004; Maserumule et al., 2019; McMorris et al., 2002; Myers, 2012; Peltzer, Ramlagan, & Satekge, 2012; Swahn et al., 2018). There was a decrease in prevalence of substance use among males and females at the control site.

This could be due to available psycho-social interventions like school rules and disciplinary hearing for substance users.

In terms of statistical associations, males were more likely to be associated with substance use than females both at the study site (AOR=3.026, 95% CI= (1.436-6.378) and at the control site (AOR=3.264, 95% CI= (1.320-8.072) before intervention. After intervention, males were associated with substance at the study site (AOR=1.134, 95% CI= (0.554-2.319) and there was no association at the control site (AOR=0.947, 95% CI= (0.250-3.590). This means that males were more likely to use substances than females. The study agrees with Bronfenbrenner's (1980) ecological systems model which states that adolescent behavior can be influenced by the environment they are exposed to. Therefore, use of substances among adolescents could be secondary to peers' use of substances in school.

In terms of substance use and age, the study found that there was no close association between age and substance use. Table 13 under Appendix 4, below, shows the average prevalence of substance use among adolescents who were diagnosed with substance use during pretest and posttest assessment. It indicates that 22% of young adolescents (10-15 years) had such substance use experiences as compared 78% of older adolescents (16-19 years) at the study site while at the control site 21% of young adolescents (10-15 years) had such substance use experiences as compared 79% of older adolescents. Table 13 also shows that at the study site, the prevalence of substance use among young adolescents (10-15 years) before intervention was 24% and after the intervention it was 20%. Among older adolescents (16-19 years), the prevalence was 76% before intervention and 80% after intervention. At the control

site, the prevalence of substance use before intervention was 12% among young adolescents (10-15 years) and after intervention the prevalence was 30%. Among older adolescents (16-19 years) it was 88% before intervention and 70% after intervention. The findings suggest that older adolescents were using substances more compared to younger ones. Generally, psycho-social intervention was able to reduce the prevalence of substance use among adolescents at the study site as prevalence of substance use reduced after an intervention in both young adolescents.

However, the available psychosocial interventions at the control site was able to reduce the prevalence of substance use among older adolescents (16-19 years) at significant level. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where participants' use of substances reduced with the intervention that was given in this project and the already available psycho-social interventions in schools.

In terms of statistical associations, at both study and control sites there was no significant relationship between younger adolescents (10-15 years) and older adolescents (16-19 years), and use of substances before the intervention and after the intervention. This means that age of an adolescent was not a risk factor to use of substances. However, similar studies in both HICs and LMICs found that being an older adolescent was found to be associated with substance use among adolescents (Bendtsen, Damsgaard, Tolstrup, Ersbøll, & Holstein, 2013; Francis et al., 2015; Gamarel et al., 2016; Kuteesa et al., 2020; Morojele et al., 2016; Swahn et al., 2020).

In terms of substance use and residence, the study found that there was no association between residence and substance use. Table 14, below, shows the average prevalence of substance use among adolescents who were diagnosed with substance use during pretest and posttest assessment. It indicates that 60% of adolescents from rural areas had such substance use experiences as compared 40% of adolescents from urban areas at the study site while at the control site 71% of adolescents from rural areas had such substance use experiences as compared 29% of adolescents from urban areas. Table 14 also shows that at the study site, the prevalence of substance use among adolescents from rural areas before intervention was 53% and after the intervention it was 66%. Among adolescents from urban areas, the prevalence was 47% before intervention and 44% after intervention. At the control site, the prevalence of substance use before intervention was 71% among adolescents from rural areas and 70% after intervention. Among adolescents from urban areas, the prevalence was 29% before intervention and 30% after intervention. The findings suggest that many adolescents from rural areas were using substances compared to adolescents from urban areas and generally psycho-social intervention was able to reduce the prevalence of substance use among adolescents from urban areas and not those from rural areas at the study site. However, the available psychosocial interventions at the control site were able to reduce the prevalence of substance use among adolescents from both urban and rural areas. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where participants' use of substances reduced with the intervention that was given in this project, especially to adolescents from urban areas and the already available psycho-social interventions in schools at the control site. In terms of

statistical associations, at both study and control sites there was no significant relationship between an adolescent from a rural or urban area on the one hand and use of substances on the other, both before and after the intervention. This means that residence of an adolescent was not a risk factor to use of substances.

4.2.4 Prevalence of Suicidal Thoughts

The study found that the prevalence of suicidal thoughts among adolescents was 26% at the study site and 8% at the control site: Table 15, below, shows the details.

Table 15: Prevalence of suicidal thoughts

Pre-intervention (Prevalence)	Suicidal thoughts	
	Study site. Total (N= 163)	Control Site. Total (N=154)
	N (%)	N (%)
	42 (26)	12 (8)
Post-intervention (Prevalence)	Suicidal thoughts	
	Study Site Total (N=158)	Control Site Total (N= 103)
	N (%)	N (%)
	40 (25)	14 (14)

Table 15 above shows that the prevalence of suicidal thoughts was relatively high at the study site. Notably, it decreased with the intervention from 26% to 25%. However, at the control site, the prevalence of suicidal thoughts increased from 8% to 14%. This could be due to lack of psycho-social support services in schools. However, the prevalence of suicidal thoughts among adolescents was slightly higher in this study as compared with other studies as observed by other researchers who reported a prevalence of 17% of suicidal thoughts among adolescents in different

countries (Uddin et. al., 2019). The difference could be due social contexts and effects of Covid-19.

In terms of suicidal thoughts and gender, the study found that there was a close association between gender and suicidal thoughts. Table 16 under Appendix 4, below, shows the average prevalence of suicidal thoughts among adolescents who were diagnosed with suicidal thoughts during pretest and posttest assessment. It indicates that 43% of female adolescents had suicidal thoughts as compared 57% of males at the study site while at the control site 51% of females had such suicidal thoughts experiences as compared 49% of males.

Table 16 shows that at the study site, the prevalence of suicidal thoughts among females was 37% before intervention and 49% after intervention. Among males, the prevalence was 63% before intervention and 51% after intervention. At the control site, the prevalence of suicidal thoughts before intervention was 62% among males and after intervention the prevalence was 36%. The decrease in the prevalence of suicidal thoughts among males at the control site could be attributed to secondary schools' existing psycho-social services for students. Among females, it was 38% before intervention and 64% after intervention. The study findings show that they were more males with suicidal thoughts than females and the intervention was able reduce the prevalence of suicidal thoughts among males and not among females at study site. While at the control site there was no change in prevalence of suicidal thoughts among males while among females the prevalence increased.

In terms of statistical associations, males were more likely to be associated with suicidal thoughts than females both at the study site (AOR=1.205, 95% CI= (0.588-2.469) and at the control site (AOR=1.086, 95% CI= (0.338-3.487) before intervention while after intervention there was no association. This means that males were more likely to have suicidal thoughts than females. A similar study also found that being male was more likely to have suicidal thoughts than being female (Ibrahim et al., 2017). This could be due to lack of psycho-social support services in schools.

In terms of suicidal thoughts and age, the study found that there was a close association between age and suicidal thoughts. Table 17 under Appendix 4, below, shows the average prevalence of suicidal thoughts among adolescents who were diagnosed with suicidal thoughts during pretest and posttest assessment. It indicates that 28% of young adolescents (10-15 years) had such suicidal thoughts experiences as compared to 72% of older adolescents (16-19 years) at the study site while at the control site 30% of young adolescents (10-15 years) had such suicidal thoughts experiences as compared to 70% of older adolescents.

Table 17 also shows that at the study site, the prevalence of suicidal thoughts among young adolescents (10-15 years) before intervention was 14% and after the intervention it was 41%. This may imply that psychosocial intervention was ineffective in reducing the prevalence of suicidal thoughts among young adolescents (10-15 years), but it could also be due to other confounding factors such as the effects of Covid-19 and the country's social-economic problems at the time. Among older adolescents (16-19 years), the prevalence was 86% before intervention and 59% after intervention. At the control site, the prevalence of suicidal thoughts before intervention was 31% among young adolescents (10-15 years) and after intervention the prevalence was 29%. Among older adolescents (16-19 years), before intervention

it was 69% and after intervention it was 71%. The study findings suggest that there was a high number of older adolescents with suicidal thoughts compared to young adolescents. Generally, psycho-social intervention was not able to reduce the prevalence of suicidal thoughts among young adolescents as prevalence of suicidal thoughts kept increasing despite the intervention. However, the intervention was able to reduce the prevalence of suicidal thoughts among older adolescents (16-19 years) at study site. The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained and can also relapse. This happened both at study and control site; some participants continued having suicidal thoughts despite interventions that were given in this project and the already available psycho-social interventions in schools. There was no reduction in prevalence of suicidal thoughts despite a psycho-social intervention at the study site.

In terms of statistical associations, being a younger adolescent (10-15 years) was associated with suicidal thoughts (AOR=1.813, 95% CI= (0.296-3.852) after intervention and during pre-intervention at the control site (AOR=1.013, 95% CI= (0.296-3.469). This means that young adolescents were more at risk of suicidal thoughts than older adolescents.

In terms of suicidal thoughts and residence, the study found that there was a close association between residence and suicidal thoughts. Table 18 under Appendix 4, below, shows the average prevalence of suicidal thoughts among adolescents who were diagnosed with suicidal thoughts during pretest and posttest assessment. It indicates that 72% of adolescents from rural areas had such suicidal thoughts

experiences as compared to 28% of adolescents from urban areas at the study site. At control site, on the other hand, 71% of adolescents from rural areas had such suicidal thoughts experiences as compared to 29% of adolescents from urban areas. Table 18 also shows that at the study site, the prevalence of suicidal thoughts among adolescents from rural areas before intervention was 65% and after the intervention it was 79%. Among adolescents from urban areas, the prevalence was 35% before intervention and 21% after intervention. At the control site, the prevalence of suicidal thoughts before intervention was 77% among adolescents from rural areas and after intervention it was 64%. Among adolescents from urban areas, it was 23 before intervention % and 46% after intervention.

The findings suggest that generally prevalence of suicidal thoughts was high among adolescents from rural areas compared to adolescents from urban areas. The psychosocial intervention was not able to reduce the prevalence of suicidal thoughts among adolescents from rural areas but was able to reduce the prevalence of suicidal thoughts among adolescents from urban areas at study site. The lack of improvement in suicidal thoughts among rural adolescents could be due to cultural factors. This is so because in some cultures people believe that depression is not a problem and there is no need to seek help. While the adolescents from urban areas could have been influenced by different forms of media that could have influenced their behavior change. Further, Bronfenbrenner's (1980) ecological systems model says that adolescent behaviour can be influenced by the culture where a person stays. However, available psychosocial interventions at the control site were not able to reduce prevalence of suicidal thoughts among adolescents from both rural and urban areas.

The study findings also agrees with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where behaviour change was implemented and maintained. The model also states that human behaviour can also relapse. This happened both at study and control sites, where some participants continued having suicidal thoughts despite interventions that were given in this project and the already available psycho-social interventions in schools.

In terms of statistical associations, being an adolescent from rural area was associated with suicidal thoughts before intervention (AOR=1.288, 95% CI= (0. 624-2.660) and after intervention (AOR=1.681, 95% CI= (0.704-4.012) at the study site. While at the control site there was no association between being from rural/urban area and suicidal thoughts. This means that an adolescent from rural area was more at risk of suicidal thoughts than someone from urban areas based on the results at study site.

4.2.5 Prevalence of Depression

The study found that the prevalence of depression among adolescents was 87% at the study site and 86% at the control site: Table 19 below shows the details.

Table 19: Prevalence of depression

Pre-intervention (Prevalence)	Depression	
	Study site Total (N= 163) N (%) 142(87)	Control site Total (N=154) N (%) 132 (86)
Post-intervention (Prevalence)	Depression	
	Study site Total (N=158) N (%) 139 (88.0)	Control site Total (N= 103) N (%) 82 (80)

Table 19 above shows that the prevalence of depression among adolescents remained high despite at intervention at the study site, which ranged from 87% to 88.0% during pre and post intervention period. This shows that the intervention failed to reduce the prevalence of depression among adolescent learners. A similar study observed this in Malawi. It found that there was 70% prevalence of depression among adolescents attending schools in Lilongwe (Kutcher et al., 2017). However, results of the previous study are lower than the current study. At the control site, the prevalence of depression was also high as it ranged from 86% to 80% during pre and post intervention period. This shows that the intervention had no impact on depression. What is noteworthy here is that there was a small decrease in prevalence of depression at the control site. Also, the decrease could be due to some form of psycho-social interventions that were available in schools. Further, the high prevalence of depression could also be secondary to challenges that were associated with Covid-19 and teachers' national wide strike.

In terms of depression and gender, the study found that there was a close association between gender and depression. Table 20, below, under Appendix 4 shows the average prevalence of depression among adolescents who were diagnosed with depression during pretest and posttest assessment. It shows that 44% of female adolescents had depression as compared to 56% of males at the study site while at the control site 40% females had such depression experiences as compared 61% of males. Table 20 also shows that at study site, the prevalence of depression among females before intervention was 42% and after the intervention it was 46%. Among males, the prevalence was 58% before intervention and 54% after intervention. At the control site, the prevalence of depression before intervention was 62% among males and after

intervention the prevalence was 59%. Among females, it was 38% before intervention and 41% after intervention. The findings show that there were more males than females with depression problems, and that psycho-social interventions were able to reduce the prevalence of depression among males and not among females both at study and control sites. Further, Bronfenbrenner's (1980) ecological systems model says that adolescent behaviour can be influenced by the school environment where an adolescent is learning. During the psycho-social intervention period, the teachers at the study site were on national industrial strike. This could have affected adolescent learners' mental health and psychological coping mechanisms.

In terms of statistical associations, males were more likely to be associated with depression than females both at the study site (AOR=1.055, 95% CI= (0.404-2.755) after intervention and at the control site (AOR=2.213, 95% CI= (0.871-5.625) before intervention. This means that males were more likely to have depression than females. However, similar studies found that being female was more associated with depression than being male (Chinawa et al., 2015; Maharaj et al., 2008).

In terms of depression and age, the study found that there was a close association between age and depression. Table 21 under Appendix 4, below, shows the average prevalence of depression among adolescents who were diagnosed with depression during pretest and posttest assessment. It indicates that 32% of young adolescents (10-15 years) had such depression experiences as compared to 62% of older adolescents (16-19 years) at the study site while at the control site 31% young adolescents (10-15 years) had such depression experiences as compared to 69% of older adolescents. Table 21 also shows that at the study site, the prevalence of depression among young

adolescents (10-15 years) before intervention was 31% and after the intervention it was 32%. Among older adolescents (16-19 years), the prevalence was 69% before intervention and it was 68% after intervention. At the control site, the prevalence of depression before intervention was 26% among young adolescents (10-15 years) and after intervention the prevalence was 35%. Among older adolescents (16-19 years), it was 74% before intervention and it was 65% after intervention. The study findings suggest that the prevalence of depression among older adolescents (16-19 years) was higher compared to younger adolescents (10-15 years) and the psycho-social intervention was not able to significantly reduce the prevalence of depression among younger adolescents (16-19 years) and young adolescents (10-15 years) at the study site. However, available psychosocial interventions at the control site were able to reduce prevalence of depression among older adolescents (16-19 years) and not among younger adolescents (10-15 years). The study findings agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where behaviour change was implemented and maintained. There was no reduction in prevalence of depression despite a psycho-social intervention at study site.

In terms of statistical associations, being a younger adolescent (10-15 years) was associated with depression (AOR=1.795, 95% CI= (0.563-5.719) after intervention while being an older adolescent (16-19 years) both at the study and control sites was not associated with depression. This means that young adolescents were more at risk of depression than older adolescents.

In terms of depression and residence, the study found that there was a close association between residence and depression. Table 22 under Appendix 4, below, shows the average prevalence of depression among adolescents who were diagnosed with depression during pretest and posttest assessment. It shows that 68% of adolescents from rural areas had such depression experiences as compared to 32% of adolescents from urban areas at the study site. At the control site, 72% of adolescents from rural areas had such depression experiences as compared to 28% from urban areas. Table 22 further shows that at the study site, the prevalence of depression among adolescents from rural areas before intervention was 63% and after the intervention it was 72%. Among adolescents from urban areas, the prevalence was 37% before intervention and it was 28% after intervention. At the control site, the prevalence of depression before intervention was 80% among adolescents from rural areas and after intervention the prevalence was 73%. Among adolescents from urban areas, the prevalence was 20% before intervention and 67% after intervention.

The findings suggest that many participants who had depression came from rural areas. The psycho-social intervention was not able to reduce the prevalence of depression among adolescents from rural areas but was able to reduce the prevalence of depression adolescents from urban areas at study site. The lack of improvement in depression among rural adolescents could be due to cultural and economic factors. This is so because in some cultures people believe that depression is not a problem and there is no need to seek help. It is possible that adolescents from urban areas were influenced by different forms of media that is available to them, which could have influenced their behavior change. Further, Bronfenbrenner's (1980) ecological systems model says that adolescent behaviour can be influenced by the culture where

a person is staying. However, available psychosocial interventions at the control site were able to reduce prevalence of depression among adolescents from rural areas and not among adolescents from urban areas.

The study findings also agree with Prochaska et al.'s (1992) Model of Behaviour Change, which states that behaviour change goes through stages and a human behaviour can be maintained. This happened both at study and control sites, where behaviour change was implemented and maintained. There was no reduction in prevalence of depression despite a psycho-social intervention at the study site.

In terms of statistical associations, being from rural area was associated with depression (AOR=1.847, 95% CI= (0.735-4.642) at the study site and (AOR=2.533, 95% CI= (0.951-6.744) at the control site during baseline study. This means that being from rural area increases a risk of depression than being from urban area.

4.3 Management of Psycho-social Problems among Adolescent Learners

The main research question that guided this study was “How are psychosocial problems managed among adolescent learners?” This question helped to guide the study to understand how psychosocial problems among adolescent learners in secondary schools are being managed and the study findings helped to inform the intervention of psycho-social problems among adolescent learners in secondary schools.

4.3.1 Available Forms of Psycho-social Support Services for Adolescent Learners

The study found that there were three ways how psycho-social problems among adolescent learners were managed in secondary schools: individual counselling, enforcement of school rules and regulations, and use of mother groups.

4.3.1.1 Individual Counselling

The study was guided by the following sub-research question: Do we have any form of counseling services at secondary schools? The study observed that there were some forms of psycho-social support in schools like unstructured counseling services offered by class form teachers. However, the study also found that there is lack of formal/structured counselling services and different forms of psycho-social support services in schools. The reason for not offering structured counselling services in schools as reported by participants was due to lack of capacity for teachers to offer counselling service in schools. Further, participants reported that adolescent learners are experiencing psycho-social challenges like substance use. Similar findings have also been observed in the previous studies across the world (Babatunde,et. al., 2020; Burnett-Zeigler et al., 2012; WHO, 2016) which state that there are counselling service gaps in schools: Detailed participant views are as shown in Table 23, below

Table 23: Participants' views on availability of counselling services.

	Frequency	Percent
Strongly agree	15	83.3
Agree	3	16.7
Total	18	100.0

Table 23 above shows that all participants agreed that there are counselling services gaps in Malawian secondary schools. Specifically, the table shows that the majority of the participants strongly agreed (83.3%) while others generally agreed (16.7%) that there are counselling service gaps in Malawian secondary schools. Similar study findings have been observed in South Africa by Babatunde et al. (2020), that there is shortage of mental health services like counselling services in secondary schools. The reason for the gap in counselling services in schools was due to lack of teacher capacity in providing counseling services in schools. Some of the participants said this:

There is need for mental health service in schools; sometimes learners have psychological issues that contribute to poor performance and as teachers we are not trained in mental

This was also observed in USA and Kenya that mental health services like counseling and guidance can help in improving academic performance of adolescent learners. However, there is lack of trained psychosocial support providers in schools (Leonard et al., 2015; Puskar & Bernardo, 2007; Wambu, 2015). Another participant said:

Generally, teachers lack capacity to conduct psycho-education and group counseling sessions in schools. However, psycho-education and group counseling would only work if conducted in a manner where it doesn't result in further stigmatization of the students seen to

Lack of teacher capacity to conduct professional counseling and guidance counseling services in secondary schools was also observed by other researchers in Malawi(Maluwa-banda, 2007). As one of the participants observed

Depression and drug and substance abuse among adolescents are sometimes as a result of the poor environment that an adolescent has been exposed to.

Based on the participants' observation, there is need to consider contextual/environmental issues when offering a psycho-social intervention so that the intervention can be successful as suggested by Bronfenbrenner's (1980) ecological systems model. An adolescent is affected by the following ecological systems: microsystem, mesosystem, exosystem, macrosystem and chronosystem.

In summary, counselling service remains a major challenge among adolescent learners in Malawian secondary schools, according to the study findings, reviewed related literature, and the ecological systems model.

4.3.1.2 Enforcement of School Rules and Regulations

The question that guided the study was: how are the school rules and regulations enforced to ensure management of psycho-social problems among adolescents? The study found that schools manage psycho-social problems like substance use among adolescents by calling an adolescent learner for a disciplinary hearing and it is the responsibility of the school management to constitute a disciplinary hearing committee to hear from the student as to why they are using substances when the rules and regulations of the school do not allow that. Further, the study found that there is no guidance and counselling after disciplinary hearing in order for an adolescent to

understand how to stop the substance use. After, the disciplinary hearing committee is satisfied with evidence of the students' substance use, he or she can be suspended from the secondary school. As one of the participants said, participant had this to say:

'there is no time allocated to counseling services in school.

This is a challenge for adolescent learners with psycho-social

Further, other participants observed that

'there is a need for Ministry of Education in collaboration

with the Ministry of Health to allocate at least one person

In short, there are challenges for adolescent learners with psycho-social challenges to access mental health services in schools. Lunenburg's (2010) study on the role of school guidance and counseling services in schools observed that guidance and counseling can assist individuals to develop the ability to understand themselves, to solve their own problems, and to make appropriate adjustments to their environment. Also, Maluwa-Banda (2007) found similar results in Malawi: Table 24 shows the details.

Table 24- Need for school health policy

	Frequency	Percent
Strongly agree	14	77.8
Agree	3	16.7
Neutral	1	5.6
Total	18	100.0

Table 24 shows that majority of participants were of the view that there is need for a school health policy that should guide provision of counselling services in schools.

4.3.1.3 Use of Mother Groups

The question that guided the study was: how do parents help to manage psycho-social problems among adolescent learners? The study found that mother groups only psycho-socially support girls in school in order for the girls not to drop out of school. The approach the mother groups use is that they bring all adolescent girls together and teach them about the effects of dropping out of school and the importance of continuing with their studies. Further, participants agreed on the need of having parents involved in management of adolescent psycho-social problems. The findings of this study are consistent with previous studies, which found that parental involvement in adolescents' substance use management can help to reduce their psycho-social challenges (El Kazdoun et al., 2018; Hodder et al., 2016; Ozer & Fernald, 2008). However, one of the participants observed that

parents should be involved only to identify the problems and help their adolescents access care and not them managing the problems. The focus would be better placed in training teachers to identify the

Table 25 shows the details:

Table 25: Parental involvement in problems management

	Frequency	Percent
Strongly agree	10	55.6
Agree	7	38.9
Neutral	1	5.6
Total	18	100.0

The study findings in Table 25 above indicate that there is need of parental involvement in managing adolescent psycho-social problems in Malawian education systems. However, the study observed the gap that boys are not supported by the

mother groups and fathers are not involved in psycho-supporting adolescents in school. Based on Bronfenbrenner's (1980) ecological systems model, there is need to involve all stakeholders. In this case, fathers and boys that interact with adolescent girls in one way or another should also be involved in order to manage adolescent psycho-social problems effectively. Further, the model emphasizes that social context matters most when handling psycho-social problems among young people. Therefore, all parents can play a very important role in reinforcing behaviour change among adolescents if they are empowered with the knowledge.

4.4 Effect of Intervention in Supporting Adolescents with Psycho-social Challenges

The study aimed at evaluating the effectiveness of the combined psycho-education and group counselling approach in supporting adolescents with psycho-social challenges. The following research question guided the study: *What is the effect of combined psycho-education and group counselling approach in supporting adolescents with psycho-social challenges?*

4.4.1 Supporting Adolescents' Attitude towards Mental Health

Problems at Study Site

The study revealed the following results: during pre-intervention 26.4% of adolescents had positive attitude towards mental health problems while during post-intervention had 55.1% of adolescents with positive attitude towards psycho-social problems. The change in prevalence was 28.7%: Table 26 below shows the details.

Table 26: Prevalence of positive attitudes towards mental health problems

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
26.4	55.1	28.7	3.728	3	.034

Cohen's d =1.864

Table 26 above shows that the prevalence of positive attitudes towards mental health problems increased by 28.7% at the study site. This could be due to the combined approach of psycho-education and group counseling intervention which was given to the adolescents. In addition, the study found that the difference in the prevalence of positive attitude change about mental health problems (28.7%) among adolescents between the baseline and end-line findings in the treatment group was statistically significant but the effect size was large in the paired sample test ($t=3.728$, $df=3$, $p\text{-value}=0.034$, Cohen's $d=1.864$).

4.4.2 Supporting Adolescents' Attitude towards Mental Health Problems at Control Site

The study revealed the following results: during pre-intervention, 28.6% of adolescents had positive attitude towards mental health problems while during post-intervention 27.2% of adolescents had positive attitudes towards mental health problems. The change in prevalence was 1.4%: Table 27 shows the details.

Table 27: Prevalence of attitude towards mental health problems at control site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
28.6	27.2	1.4	0.000	1	1

Cohen's d =0.000

The table 27 above shows that there was a reduction in prevalence of positive attitudes towards mental health problems by 1.4% at the control site. The small decrease in prevalence of positive attitudes towards psych-social problems at the control site could be due to lack of formal psychosocial intervention like a combined approach of psycho-education and group counseling intervention which was given to the adolescents at the study group site.

The study also found that the difference in the prevalence of positive attitude change about mental health problems (1.4%) among adolescents between the baseline and end-line findings in the control group was not statistically significant and the effect size was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.4.3 Pre-intervention-effect Size Between the Treatment and Control Group

The study found that the difference between the treatment group and control group was statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=0.000$, Cohen's $d=0.000$): Table 28 below shows the details.

Table 28: Independent Samples Test of attitudes: pre-intervention control site

t-statistic	df	p-value
0.000	2	0.000

Cohen's $d = 0.000$

Table 28 above shows that effect of the intervention was statistically significant.

4.4.4 Post-intervention-effect Size Between the Treatment and Control Group

The study found that the difference between the treatment group and control group was statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=0.000$, Cohen's $d=0.000$): Table 29 below shows the details.

Table 29: Independent Samples Test of attitude towards: post-intervention control site

t-statistic	df	p-value
0.000	2	0.000

Cohen's $d = 0.000$

Table 29 above shows that effect of the intervention was statistically significant.

4.4.2 Supporting Adolescents' Mental Health Knowledge at Study Site

The study revealed the following results: during pre-intervention 23.3% of adolescents had mental health knowledge about psychosocial problems while during post-intervention 70.3% of adolescents had mental health knowledge about psychosocial problems. The prevalence of knowledge about mental health problems increased by 47%: Table 30 below shows the details.

Table 30: Effect of intervention mental health knowledge at study site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
23.3	70.3	47	0.000	1	1

Cohen's $d = 0.000$

Table 30 shows that the prevalence of knowledge of mental health problems significantly increased by 47%. This could be due to the combined approach of psycho-education and group counseling intervention which was given to the adolescents. A similar study on the effectiveness of a universal school-based depression education program among US Secondary School Students by Swartz et al. (2017) found that 46% of adolescent participants had increased knowledge of depression and started approaching the teachers about the depression concerns. The similarity of the study findings could be due to similarity in modes of the study interventions.

The study also found that the difference in the prevalence of knowledge change about mental health problems (47%) among adolescents between the baseline and end-line findings in the treatment group was not statistically significant and the effect size was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.4.3 Supporting Adolescents' Mental Health Knowledge at Control Site

The study revealed the following results: during pre-intervention 25.3% of adolescents had mental health knowledge about psychosocial problems while during post-intervention 23.3% of adolescents had mental health knowledge about psychosocial problems. The decrease in prevalence of mental health knowledge was 2%: Table 31 below shows the details.

Table 31: Effect of intervention on mental health knowledge at control site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
25.3	23.3	2	0.000	1	1

Cohen's d =0.000

Table 31 above shows that there was knowledge reduction by 2% and that effect of the intervention was not statistically significant.

The reduction in knowledge could be due to lack of formal psychosocial intervention at control site like a combined approach of psycho-education and group counseling intervention which was not given to the adolescents. The study further found that the difference in the prevalence of knowledge about mental health problems (2%) among adolescents between the baseline and end-line findings in the control group was not statistically significant and effect size was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.4.4 Pre-intervention- effect Size between the Treatment and Control Group

The study found that the difference between the treatment group and control group was not statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=0.000$, Cohen's $d=0.000$): Table 32 below shows the details.

Table 32: Independent Samples Test of Knowledge: post-intervention at control site

t-statistic	df	p-value
0.000	2	0.000

Cohen's d = 0.000

Table 32 above shows that effect of the intervention was not statistically significant.

4.4.5 Post-intervention-effect Size between the Treatment and Control Group

The study found that the difference between the treatment group and control group was not statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=1$, Cohen's $d=0.000$): Table 33 below shows the details.

Table 33: Independent Samples Test of Knowledge: post-intervention at control site

t-statistic	df	p-value
0.000	2	1

Cohen's $d = 0.000$

Table 33 above shows that effect of the intervention was not statistically significant.

4.4.6 Supporting Adolescents Who Use Substance at Study Site

The study revealed the following results: during pre-intervention 31.3% of adolescents used substances while during post-intervention 25.9% of adolescents used substances. The prevalence decline was by 5.4%: Table 34 below shows the details.

Table 34: Effect of intervention on substance use at study site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
31.3	25.9	5.4	0.000	1	1

Cohen's $d = 0.000$

Table 34 shows that the prevalence of substance use among adolescents declined by 5.4% and that effect of the intervention was not statistically significant. The reduction in prevalence of substance use could be due the psychosocial intervention of combined approach psycho-education and group counselling that was given at the study site.

In addition, the study found that the difference in the prevalence of substance use among adolescents between the baseline and end-line findings in the treatment group was not statistically significant and the effect size was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.4.7 Supporting Adolescents Who Use Substance at Control Site

The study revealed the following results: during pre-intervention 22.1% of adolescents used substances while during post-intervention 9.7% of adolescents used substances. The prevalence declined by 12.4%: Table 35 below shows the details.

Table 35: Effect of the intervention at control site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
22.1	9.7	12.4	0.000	1	1

Cohen's $d = 0.000$

Table 35 shows that the prevalence of substance use among participants reduce by 12.4% and that effect of the intervention was not statistically significant. This could

be due to enforcement of psychosocial interventions such as school rules and regulations which do not allow adolescent learners to use substances by the school management. The study also found that the difference in the prevalence of substance use among adolescents between the baseline and end-line findings in the control group was not statistically significant and the effect size was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.4.8 Pre-intervention - effect Size between the Treatment and Control Group

The study found that the difference between the treatment and control groups was statistically significant but the effect size was small after an independent t-test ($t=0.000$, $df = 2$, $p\text{-value}=0.000$, Cohen's $d=0.000$): Table 36 below shows the details.

Table 36: Independent Samples Test of substance use: pre-intervention

t-statistic	df	p-value
0.000	2	0.000

Cohen's $d = 0.000$

Table 36 above shows that effect of the intervention was statistically significant.

4.4.9 Post-intervention - effect Size between the Treatment and Control Group

The study found that the difference between the treatment and control groups was not statistically significant and the effect size was small after an independent test ($t=0.000$, $df = 2$, $p\text{-value}=1$, Cohen's $d=0.000$): Table 37 below shows the details.

Table 37: Independent Samples Test of substance use: post-intervention

t-statistic	df	p-value
0.000	2	1

Cohen's d = 0.000

Table 37 above shows that effect of the intervention was not statistically significant.

4.5 Supporting Adolescents with Suicidal Thoughts at Study Site

The study found that suicidal thoughts were still prevalent among adolescents despite intervention at the study site. The prevalence of suicidal thoughts among adolescents before intervention was 26.4% while after intervention was 24.7%. Therefore, the prevalence reduced by 1.7%. Table 38 below shows the details.

Table 38: Effect of intervention on suicidal thoughts

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
26.4	24.7	1.7	0.097	1	0.939

Cohen's d =0.068

Table 38 shows that the prevalence of suicidal thoughts among adolescents decrease by 1.7% and that effect of the intervention was not statistically significant. This similar to what Brent et al. (1997) observed, that there was 1% reduction in prevalence of suicidal thoughts among adolescents.

The study also found that the difference in the prevalence of suicidal thoughts (1.7%) among adolescents between the baseline and end-line findings in the treatment group was not statistically significant and the effect size of the intervention was small in the paired sample test ($t=0.097$, $df = 1$, $p\text{-value}=0.939$, $d=0.068$).

4.5.1 Supporting Adolescents with Suicidal Thoughts at Control Site

The number of participants with suicidal thoughts among adolescents during baseline study was 8.4% while during evaluation study it was 13.6%. The prevalence increased by 5.2%: Table 39 below shows the details.

Table 39: Effect of intervention on suicidal thoughts at control site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
8.4	13.6	5.2	0.000	1	0.000

Cohen's $d = 0.000$

Table 39 shows that the number of participants with suicidal thoughts increased by 5.2% and that effect of the intervention was statistically significant but the effect size was small. This could be due to lack of formal psychosocial interventions at a control site. In addition, according to behaviour change model, the results show that behaviour can relapse (suicidal thoughts) and can even be worse.

The study also found that the difference in the prevalence of suicidal thoughts (5.2%) among adolescents between the baseline and end-line findings in the control group was statistically significant but the effect size the other interventions was small in the paired sample test ($t=1$, $df = 1$, $p\text{-value}=0.000$, Cohen's $d=0.000$).

4.5.2 Pre-intervention-effect Size Between the Treatment and Control Group

The study found that the difference between the treatment group and control group was not statistically significant and effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=1$, Cohen's $d=0.000$): Table 40 below shows the details.

Table 40: Independent Samples Test of suicidal thoughts: pre-intervention

t-statistic	df	p-value
0.000	2	1

Cohen's $d = 0.000$

Table 40 above shows that effect of the intervention was not statistically significant.

4.5.3 Post-intervention-effect Size Between the Treatment and Control Group

The study found that the difference between the treatment group and control group was not statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=1$, Cohen's $d=0.000$): Table 41 below shows the details

Table 41: Independent Samples Test of suicidal thoughts: post-intervention

t-statistic	df	p-value
0.000	2	1

Cohen's $d = 0.000$

Table 41 above shows that effect of the intervention was not statistically significant.

4.6 Supporting Adolescents with Depression at Study Site

The study revealed the following results: during pre-intervention was 87.1% of adolescents had depression while during post-intervention 88% of adolescents had depression. The prevalence of depression generally increased by 0.9%. The results could be due to various reasons and not limited to the following; the time when the evaluation study was conducted. It was conducted a week before end of term test and the researcher's suspicion is that either adolescents were anxious about the impending examinations or there was no continued psycho-social support among adolescents by relevant stakeholders, the study was conducted during the period when Covid-19 prevalence was very high in the country and most the people were hopeless about the future. This could also have affected the adolescents. Further, this study was conducted during the period when there was a national wide secondary teachers strike while adolescents were kept in school. This could also have affected the results of the study. Further, based on behaviour change model, it is possible for any person to slip back and therefore depression might have relapsed (Prochaska et al, 1992): Table 42 below shows the details.

Table 42: Effect of intervention on depression at study site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
87.1	88.0	0.9	0.000	1	1

Cohen's d = 0.000

Table 42 shows the prevalence of depression increased by 0.9%.

Additionally, the study found that the difference in the prevalence of depression (0.9%) among adolescents between the baseline and end-line findings in the treatment group was not statistically significant in the paired sample test and the effect size was small ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.6.1 Supporting Adolescents with Depression at Control Site

The study revealed the following results: during pre-intervention 86.4% of adolescents had depression while during post-intervention 79.6% of adolescents had depression. The prevalence of depression generally decreased by 6.8%: Table 43 below shows the details.

Table 43: Effect of intervention on depression at control site

Pre-intervention (%)	Post-intervention (%)	Difference (%)	t-statistic	df	p-value
86.4	79.6	6.8	0.000	1.000	1
Cohen's $d = 0.000$					

Table 43 shows that prevalence of depression among adolescents decreasing by 6.8%. The decrease could be due to some form of psychosocial support services available at school. Further, the study found that some participants got some form of counseling services and it was observed during the key informant study.

The study furthermore found that the difference in the prevalence of depression (6.8%) among adolescents between the baseline and end-line findings in the control group was not statistically significant in the paired sample test and the effect size of other interventions was small ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=0.000$).

4.6.2 Pre-intervention - effect Size between the Treatment and

Control Group

The study found that the difference between the treatment group and control group was not statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=1$, Cohen's $d=0.000$): Table 44 below shows the details.

Table 44: Independent Samples Test of depression: pre-intervention

t-statistic	df	p-value
0.000	2	1

Cohen's $d = 0.000$

Table 44 above shows that effect of the intervention was not statistically significant.

4.6.3 Post-intervention - effect Size between the Treatment and Control

Group

The study found that the difference between the treatment group and control group was not statistically significant and the effect size was small ($t=0.000$, $df = 2$, $p\text{-value}=1$, Cohen's $d=0.000$): Table 45 below shows the details

Table 45: Independent Samples Test of depression: pre-intervention

t-statistic	df	p-value
0.000	2	1

Cohen's $d = 0.000$

Table 45 above shows that effect of the intervention was not statistically significant.

4.7 Chapter Summary

The study found that psychosocial problems like depression, suicidal thoughts, substance use, negative attitudes towards mental health problems, and lack of knowledge of mental health problems are prevalent among adolescent learners in schools. In addition, demographic factors such as residence, age and gender are associated with adolescent psychosocial problems. There are some psycho-social support services in secondary schools. However, there are gaps which calls for counseling and guidance services, parental involvement in managing adolescent psycho-social challenges, school policy to guide psycho-social support services, time allocation for guidance and counseling, and training teachers on how to offer counseling and guidance.

The study results show that generally the combined psycho-education and group counseling approach intervention had positive impact on behaviour change in terms substance use, reducing negative attitudes/stigma towards mental health problems and knowledge gap about mental health problems. However, the prevalence of depression remained high despite the intervention at the study site. Furthermore, the intervention was more effective in managing stigma/negative attitudes towards psycho-social problems and knowledge gap about mental health problems than substance use, suicidal thoughts and depression among adolescents. This was observed in terms of the proportions after comparing the baseline findings and the evaluation study findings. In addition, some form of psycho-social interventions that the study participants received at the control site during the study period could have helped to reduce the prevalence of depression, substance use at control site. After measuring the effect size of the intervention by using Independent-Samples T-Test and paired sample test in both control and treatment groups, it was found that the effect size was

large in the paired sample test in the study group about attitudes towards mental health problems. However, the impact of the intervention was not statistically significant in many targeted variables.

The study reveals that psycho-social challenges are prevalent among adolescent learners. Furthermore, both qualitative and quantitative study findings disclose that adolescent learners have psycho-social challenges, and secondary schools face difficulties in managing psycho-social challenges among adolescents. However, a combined psycho-education and group counseling approach if adopted may aid in the management of psycho-social challenges among secondary school students because the psycho-social intervention was effective in managing negative attitudes toward mental health problems, a lack of knowledge of mental health problems, substance use, and suicidal thoughts but ineffective in other tested variables such as depression. Therefore, other approaches such as individual counseling, cognitive behavioral therapy, and many others may be tested in Malawian context in order to learn if they can be successful ways of managing common psycho-social challenges among adolescent learners in Malawi.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Chapter Overview

The study aimed at finding out an effective way of managing of common psychosocial challenges among adolescent learners in Malawi.

5.1.1 Thesis summary

The main purpose of this study was to explore an effective way of managing common psycho-social problems among adolescent learners in Zomba, Malawi. Mixed-methods sequential explanatory study design guided the study. The first phase utilised a qualitative method; where 18 Key Informants were targeted while the second phase was a quantitative method and utilised a Non-equivalent groups quasi-experimental study design which targeted 317 adolescent learners from two secondary schools.

The key findings of the study are threefold. Firstly, the study found that the adolescent learners had psycho-social problems and prevalence was as follows: depression (87%); suicidal thoughts (26.4%); substance use (31.3%); positive attitudes towards mental health problems (26.4%) and knowledge of mental health problems (23.3%). Furthermore, socio-demographic factors such as residence, gender and age were associated with adolescents' psycho-social challenges. For example, being male (AOR=1.055, 95% CI= (0.404-2.755) was associated with depression, substance (ab

use (AOR=3.026, 95% CI= (1.436-6.378), knowledge about mental health problems (AOR=1.491, 95% CI= (0.752-2.959), and positive attitudes towards mental health problems (AOR=1.825, 95% CI= (0.868-3.841). Being a younger adolescent (10-15 years) was associated with depression (AOR=1.795, 95% CI= (0.563-5.719), knowledge of mental health problems (AOR=1.704, 95% CI= (0.780-3.719), and positive attitudes towards mental health problems (AOR=2.496, 95% CI= (1.209-5.157). Being an adolescent from rural area was associated with suicidal thoughts before intervention (AOR=1.288, 95% CI= (0.624-2.660), knowledge of mental health problems (AOR=1.325, 95% CI= (0.629-2.793) and having positive attitudes towards mental health problems (AOR=1.706, 95% CI= (0.810-3.592). Kindly, note that the higher the AOR, the higher the degree of association between the variables.

Secondly, the study observed psycho-social service deficiencies within Malawian secondary schools. The study observed that there were some forms of psycho-social support in schools like unstructured counseling services offered by class form teachers. However, the study also found that there is lack of formal/structured counselling services and different forms of psycho-social support services in schools. Further, the study found that schools manage psycho-social problems like substance use among adolescents by calling an adolescent learner for a disciplinary hearing and it is the responsibility of the school management to constitute a disciplinary hearing committee to hear from the student as to why they are using substances. In addition, the study found that mother groups only psycho-socially support girls in school in order for the girls not to drop out of school.

Finally, the intervention was effective in reducing the prevalence of psycho-social problems as follows: suicidal thoughts dropped by 2% [26% (before intervention) to 24 % (after intervention)], The difference in the prevalence of suicidal thoughts (2%) among adolescents between the baseline and end-line findings in the treatment group was not statistically significant and the effect size of the intervention was small in the paired sample test ($t=0.097$, $df = 1$, $p\text{-value}=0.939$, $d=0.068$). Substance use reduced by 5% [31% (pre-intervention) to 25.9% (post-intervention)] and the effect size of the intervention was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=.000$).

Nonetheless, the study also found out that positive attitudes towards mental health problems increased by 29% [26% (pre-intervention) to 55% (post-intervention)] and knowledge of mental health rose by 47% [23% (pre-intervention) to 70% (post-intervention)] and the effect size of the intervention was small in the paired sample test ($t=0.000$, $df = 1$, $p\text{-value}=1$, Cohen's $d=.000$). However, the intervention did not have any impact on the prevalence of depression (87% pre-intervention to 88.0% post-intervention). Further, the effect size of positive attitudes towards mental health problems was large in the paired sample t-test in the study group of attitudes of adolescents towards mental health problems ($t=3.728$, $df =3$, $p\text{-value}=.034$, Cohen's $d=1.864$). However, the effect size was not statistically significant in other tested variables: suicidal thoughts, depression, substance use, and knowledge of mental health problems.

5.1.2 Conclusion

This is the first study that aimed at exploring an effective way of managing common psycho-social problems among adolescent learners in Zomba, Malawi. Psycho-social

problems among adolescent learners are a global problem, associated with a range of adverse outcomes. They thus require urgent attention from the education, social welfare and public health sectors. This study has revealed high rates of psycho-social problems among adolescent learners attending boarding secondary schools in Zomba, Malawi. These findings are consistent with findings from other SSA studies. Due to the high levels of psycho-social problems among adolescent learners, education, social welfare, health care institutions and practitioners need to find new ways to identify, contain and provide adequate intervention and support for the adolescent learners. The study findings will help relevant stakeholders to be aware of the adolescent psycho-social challenges and how to manage them.

This study also revealed that the prevalence of depression remained very high among adolescent learners during pre and post-intervention both at control and study sites. At study site: during pre-intervention -87.1% of adolescents had depression while during post-intervention -88% of adolescents had depression. The prevalence of depression generally increased by 0.9%. At control site: during pre-intervention -86.4% of adolescents had depression while during post-intervention 79.6% of adolescents had depression. The prevalence of depression generally decreased by 6.8%.

The depression results could be due to various reasons and not limited to the following; the time when the evaluation study was conducted. It was conducted a week before end of term test and the researcher's suspicion is that either adolescents were anxious about the impending examinations or there was no continued psycho-social support among adolescents by relevant stakeholders. The study was conducted during the period when Covid-19 prevalence was very high in the country and most

the people were hopeless about the future because it was not clear when the pandemic will come to an end. This could also have affected the adolescents. Further, this study was conducted during the period when there was a national wide secondary teachers strike while adolescents were kept in school. This could also have affected the results of the study. In addition, the duration of the psycho-social intervention was only for two months. Therefore, the intervention period might not be sufficient and hence future studies should focus on increasing the duration of the psycho-social intervention among adolescent learners.

However, for future studies it is important to consider individual counselling as an additional approach when conducting a similar study. It might be helpful to compliment the combined approach of group counselling and psycho-education psycho-social intervention. In addition, there is need for teacher refresher trainings about the psycho-social intervention during the intervention period. Also, the use of peer intervention approach instead of using teachers as implementers of the psycho-social intervention among adolescent learners.

5.2 Contribution of the study to the body of knowledge

Contributing to knowledge entails developing new knowledge from previously available knowledge through extensive and innovative research. The primary goal of scholarly research is to add to existing knowledge in ways that solve problems.

5.2.1 Knowledge

Given the high prevalence rate of psycho-social problems among adolescent learners found in this study, as well as findings from SSA and other local studies, psycho-social problems among adolescent learners should be recognized as a significant

educational and public health concern in Malawi. Appropriate measures and tools to address psycho-social challenges among adolescent learners must be developed and institutionalized within the education sector to address this phenomenon and provide the necessary support and assistance to adolescent learners. Furthermore, this study found that there are psycho-social service gaps in secondary schools that must be filled, as well as those adolescent learners face psycho-social challenges, and a combined psycho-education and group counselling approach can be adopted and used to effectively manage psycho-social problems among adolescent learners in secondary schools.

5.2.2 Practice

In practice, creating networks between educational institutions and private sectors such as NGOs, counseling, and social welfare services. Development of study manuals to aid in the implementation of psycho-social problem management programs in schools, as well as the provision of locations where adolescent learners can access psycho-social support services. Giving educational talks to adolescent learners about psycho-social problem management in order to improve their own physical and psychological well-being as well as the well-being of others. All educational and public health institutions should make available avenues for adolescents who need psychosocial support services.

Teachers in secondary schools and mother groups could be trained to deal with psycho-social challenges in adolescent students during routine class activities. Looking at the current study's findings, many adolescents with psycho-social challenges and a lack of psycho-social service delivery in secondary schools were only identified as a result of this study. Teachers who have been trained to deal with

psychosocial issues will be able to identify such cases and provide the necessary support. They could be trained to look for warning signs of psycho-social challenges or what to do if an adolescent discloses having experienced a psycho-social challenge. A specific standard operating procedure, such as the provision of a combined approach of psycho-education and group counselling, should be implemented in school settings. In addition, appropriate assessment and intervention strategies must be developed in order to identify psycho-social challenges among adolescent learners and connect them with appropriate experts.

Furthermore, the results of the tested psycho-social intervention (combined psycho-education and group counselling approach) has shown that it may be effective way of managing of psycho-social problems and will guide policymakers/experts/scholars on how to manage psycho-social challenges among adolescent learners. Also, the combined psycho-education and group counselling approach can be adopted and used in school setting using limited resources.

5.2.3 Policy

In terms of policy, Malawi does not recognize psycho-social problems among adolescent learners as a major concern for the education and public health sectors, nor does it develop strategies to effectively deal with psycho-social challenges within these sectors. Currently, Malawi's National Mental Health Policy and National Educational Policy do not recommend that these cases be referred to mental health care (National Educational Policy (2013) and Mental Health Policy, 2020). This is puzzling given the high prevalence of psychosocial problems among adolescents such

as depression, substance abuse, suicide, negative attitudes toward seeking mental health care, and a lack of knowledge about mental health problems.

The policies like National Youth Policy (2013) acknowledge that there are high levels of psycho-social challenges among adolescents in the country, and that this may be a contributing factor to the current problems in different sectors including education. Furthermore, while the youth policy acknowledges that substance use, including alcohol, increases the risk of psycho-social problems, it fails to provide a strategy to adequately address psycho-social challenges among adolescent learners in the education sector. Routine screening for psychosocial challenges should become a social support issue in all schools across the country. As a result, it should be included in policies concerning education, youth, and public health. This will improve detection rates by allowing teachers to identify psycho-social challenges in adolescent learners in such settings.

In Malawi, the current mental health policy fails to recognize psycho-social challenges as a major public health concern. Despite acknowledging the need to improve current policies. Key issues frequently arise during policy implementation. Often, there are challenges in other sections of education, such as Teacher Education. Mental health, education, and youth policies all require the development of an improved framework and implementation plans in order to adequately address psycho-social challenges among adolescent learners in Malawi. Policy, for example, could be changed to allow for the use of a registered counsellor/social worker/psychologist in schools. They could assess psychosocial challenges in the school setting and provide a safe and comfortable environment for disclosure. This

could also be a key factor in encouraging more adolescent students to disclose to a teacher, resulting in adequate support, containment, and guidance. During the study, it was discovered that adolescent learners in secondary schools were not provided with this opportunity, because psycho-social challenges are frequently viewed as unrelated to education. As a result, this study would serve as a foundation for deliberate integration of psychosocial support services in Malawi's educational settings and secondary schools.

Therefore, this study suggests the following model 'Adolescent psycho-social problems management model'.

5.3 Adolescent psycho-social problems management model

The study has observed that the combined approach of psycho-education and group counselling was associated with decrease in prevalence of adolescent psycho-social problems.

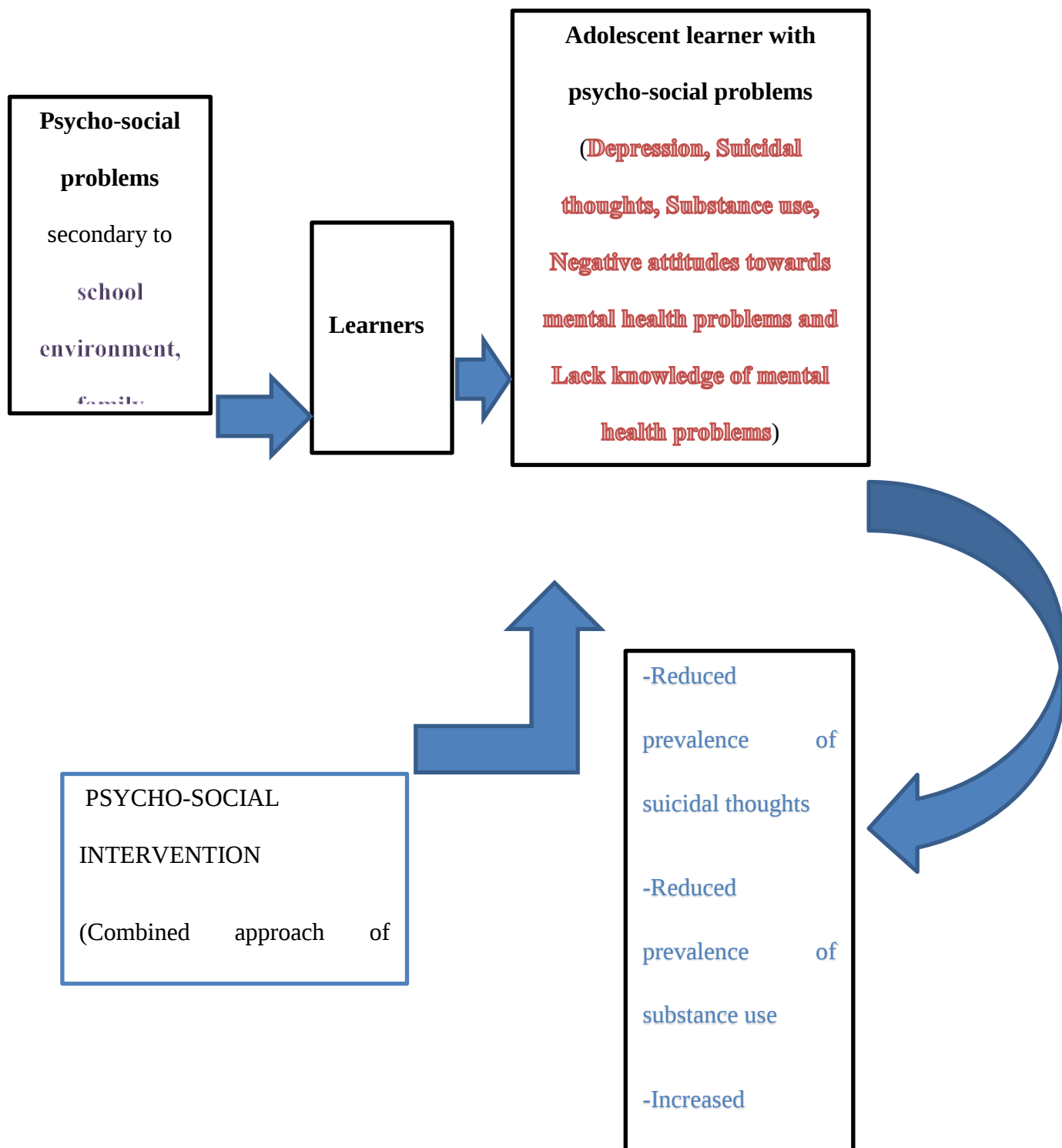


Figure 4: Adolescent psycho-social problems management model. **Source:** Researcher (2022)

5.4 Application of Adolescent psycho-social problems management model

This model aims to explain the experience of psycho-social challenges secondary to school environment, family challenges and peer pressure among adolescents in schools, which leads to depression, suicidal thoughts, substance use, negative attitudes toward mental health problems, and a lack of knowledge about mental health problems. However, with combined psycho-education and group counselling approach intervention was associated with reduced prevalence of suicidal thoughts, reduced prevalence of substance use, increased prevalence of positive attitudes towards mental health problems, and increased knowledge of mental health problems.

Adolescent learner

In this study an adolescent learner was a participant aged between 10-19 years.

Psycho-social challenges

The psycho-social challenges were depression, suicidal thoughts, substance use, negative attitudes toward mental health problems, and a lack of knowledge about mental health problems and the ascertainment of availability of psycho-social challenges among adolescent learners in schools was assessed in this study through Key Informant Interviews with relevant stakeholders and individual psychological assessments of adolescent learners.

Depression

Adolescent's experience of depression was assessed using Patient Health Questionnaire version 9 (PHQ-9) questionnaire.

Suicidal thoughts

Adolescent's experience of suicidal thoughts was assessed using PHQ-9 questionnaire.

Substance use

Adolescent's experience of substance use and was assessed using Alcohol, Smoking and Substance Involvement Screening Test -Youth (ASSIST-Y) questionnaire.

Negative attitudes towards psycho-social problems

Attitudes towards mental health problems were assessed by Attitudes toward Serious Mental Illness Scale-Adolescent Version (ATSMI-AV).

Lack knowledge of Psycho-social problems

Adolescent's knowledge of mental health problems was assessed by 20-Item Mental Health Knowledge questionnaire.

5.4.1 Synthesis of the model

An adolescent student's overall attitudes towards mental health problems had an impact in seeking psycho-social care. The results assumed that attitude has two components which work together: beliefs about consequences of the behaviour, in this case adolescent learner's thoughts, environment and peer influence on the use of substances, feelings of depression and suicidal thoughts and the corresponding positive or negative judgements about the features of the behaviour, in this case, the student's evaluation on the importance of use of substances as a way managing depression and suicidal thoughts has an impact on use of substances. Therefore, based on these results. The adolescent learner's behavior of using substances is based on

their attitudes towards the substances use, depression, suicidal thoughts and social demographic factors in a school setting. Furthermore, an adolescent student's overall knowledge of mental health problems had an impact in seeking psycho-social care in school setting. The results assumed that knowledge influenced of the behaviour, in this case student's use of substances, feelings of depression and suicidal thoughts and the corresponding positive or negative judgements about the seeking of care, in this case, the student's evaluation on the importance of seeking psychological help on use of substances, managing depression and suicidal thoughts. Therefore, based on these results. The adolescent learner's behavior of using substances, having depression, and suicidal thoughts was based on their knowledge of these mental health problems and social-demographic factors in school setting.

5.4.1.1 Combined approach of psycho-education and group counselling intervention

The combined psycho-education and group counselling approach intervention was used to manage the psycho-social problems among adolescent learners. The choice of a combined approach of psycho-education and group counselling was based on the idea that use of a single approach could be good but the efficacy of solitary approach intervention seemed to be not more statistically significant as observed in the reviewed literature from both developed and low and middle-income countries (Ahlen et al., 2019; Arora, Baker, Marchette, & Stark, 2019). The combined psycho-education and group counselling approach helped to improve the psycho-social wellbeing or mental health of adolescent learners in secondary schools. A booklet was developed and used during intervention phase. Information contained in the booklet was based on the research data collected and was analyzed as well as from other

relevant literature sources. Four implementers who had covered an adolescent psychology module during undergraduate studies were identified by the Head Teacher at the target school. After the implementers had been identified, they were trained by the principal researcher and Project Officer on how to offer group counseling and psycho-education among adolescent learners in a school setting. The use of lay health workers (Teachers) in implementing a psychological intervention for psycho-social challenges in a community set-up has been tested to have no problems in Zimbabwe (Chibanda et al., 2016). Besides, World Health Organisation recommends training of lay health professionals to offer mental health services in countries where there is a gap in mental health services (WHO, 2016). Hence, the choice of use of teachers in the targeted schools was not a strange phenomenon. It was also a helpful approach in order to have a sustainable way of managing psycho-social challenges among adolescents after the research project had finished. Furthermore, teachers leading in mental health interventions in schools have also been found to be effective in Uganda (McMullen & McMullen, 2018). The intervention comprised of sixteen sessions (comprising of two sessions per week, with a total of 8 sessions per month) were conducted face-to-face with students by the implementers. In order to check fidelity, a checklist was developed and all participants were recorded throughout the study period. The sessions covered the following topics: causes of depression and use of psychoactive substances, assertiveness, stress management, prevalence and risks for depression, prevention and management of depression and use of psychoactive substances, the myths and facts about mental health and mental health problems, positive and negative attitudes about mental health, the identification of activating events and negative beliefs, and self-management skills such as problem solving, communication and interpersonal skills, conflict resolution, anger management, and

positive coping while utilizing the cognitive behaviour technique and problem solving technique approaches.

In order to maintain internal validity and privacy, teachers (implementers) and participants were not aware of the diagnosis of psycho-social challenges. All sessions were audio recorded for the purposes of improving the next session. The intervention included information, efficacy (self and interpersonal-social) and skills (coping and practical) building package. The combined psycho-education and group counselling approach intervention improved adolescent learners' psycho-social wellbeing, particularly attitudes, substance use, suicidal thoughts, and knowledge.

5.5 Recommendations for Future Studies

- Conducting research at different secondary schools in Malawi. This will add to knowledge about the efficacy of psycho-social interventions among adolescent learners in Malawi.
- Follow-up studies might be conducted in order to investigate the level of psycho-social problems post psycho-social intervention.
- Future studies might also focus on investigating when do adolescent learners start to experience psycho-social problems.
- Future studies might also focus on increasing the duration of the psycho-social intervention.
- Mother groups and all teachers should be trained on how to offer the psycho-social interventions among adolescent learners.

- Positive attitudes toward mental health problems may have increased at the control site due to existing psycho-social services provided to students by secondary school. Therefore, there is a need to empower existing psycho-social support structures in secondary schools.

5.6 Chapter Conclusion

The burden of psychosocial challenges like depression, substance use, suicidal thoughts, knowledge gap about mental health problems and stigma towards mental problems among adolescent learners exist but there are few interventions available for these psycho-social challenges among adolescent learners. The combined approach of psycho-education and group counseling has been observed to reduce the percentage of common psychosocial challenges among adolescents. After measuring the effect size of the intervention by using Independent-Samples T-Test and Paired Samples T-Test, it was found that the impact of the intervention was not generally statistically significant.

However, the effect size was large in the paired sample test in the study group of attitudes towards mental health problems. This is the first time that a quasi-experimental study has been done to prove the efficacy of combined approach of psycho-social problems among adolescents in a Malawian setting. Therefore, there is need to conduct a similar bigger study and check the impact of the intervention. Further, there is need to provide capacity building among teachers in schools and promote this work across the country. Furthermore, there is need for economic investment in community mental health interventions in Malawian communities in order to have a healthy and productive nation.

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APPENDICES

Appendix 1: Study Questionnaires

The Key Informants Questionnaire

As someone who is responsible for mental health wellbeing of adolescents (Director of Mental Health Services, Region Education Manager, District Education Manager, District Social Welfare Officer, District Health officer, District Commissioner, Head Teacher, Form Teacher and Chairperson of Parent – Teacher association), how are psychosocial problems (depression, psychoactive substance use, attitudes towards mental health problems and knowledge of mental health problems) managed among adolescent learners in a school setting?

Hypothetical statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
What do you think are the most pressing psycho-social problems facing adolescent learners in secondary schools?					
Are there any counselling services in school for management of psychosocial problems among adolescents in schools?					
On management of psychosocial problems, is there any need of psycho-education and group counselling approach in secondary schools as a way of managing these psychosocial problems?					
How are the school rules and regulations enforced to ensure management of psycho-social problems among adolescents?					
How do parents help to manage psycho-social problems among adolescent learners?					
If you agree or disagree. Any explanations? Specify please.					
What forms of psycho-social support services are available in schools?					

Adolescent Participant Study Questionnaire

DATE: ____ / ____ / 2020

QUESTIONNAIRE NO: ____

INSTRUCTIONS:

1. Please fill in the blank spaces and tick appropriate answer wherever possible.
2. Do not write the name of the participant on the questionnaire.

Section A

DEMOGRAPHICS Date: Participant name: Name of interviewer: Site:										
Variable		RESPONSES								
Socio-demographics		Individual risk factors								
1. Sex		1. Male			2. Female					
2. Ethnic		1. Lomwe			4. Chewa		7. Yao			
		2. Tumbuka			5. Tonga		8. Sena			
		3. Lambya			6. Ngoni		9. Ngonde			
3. Age		13	14	15	16	17	18	19		
4. Religion	Christianity	1. Catholic			2. Pentecostals		3. Presbyterian			
		4. Adventist			5. Lutheran					
	Islam									
5. Education		Are	you	Yes	If	no,	are	you	Studying further	Yes

	attending school?	No	working or studying further?		No
				Working	No
					Yes
		What's your highest grade you have completed		Primary	
				Secondary	University/ college
Family	How many people live in the house with you?		2 and less	3-4	More than 5
	Who do you live with?		Siblings	Parents	Relatives

6.Residence	Do you live in a town or small village?	Rural		
		Urban		
Family risk factors				
How hard would it be for you to obtain alcohol from your parent or guardian?		Easy	In-between	Hard
How many times have you lied about your age to buy alcohol?		None	A couple	Many times
How hard would it be for you to take it from your home?		Easy	In-between	Hard
If you ever have had an alcoholic drink, think back to the last time you drank. How did you obtain the alcohol?		Your parent or guardian gave it to you		You took it from home
Have you ever thought your parent(s) had a drinking problem?		Yes		No
Did you ever argue or fight with your parent(s) when he/she was drinking?		Yes		No
Did you ever encourage your parent(s) to quit drinking?		Yes		No

If you wanted alcohol to drink, would you be able to get some at home?		Yes	No
Peer risk factors			
How many of your close friends drink alcohol?	None	A couple	Quite a few All of them
How many of your close friends get drunk?	None	A couple	Quite a few All of them
How many times has someone bought alcohol for you?	None	A couple	Quite a few All the time
How many times has someone offered you alcohol at a party or wedding?	None	A couple	Quite a few All the time
How sure are you that you could say 'no' if you were offered alcohol by a friend?	No, not sure	could not say "no"	
Community risk factors			
Is it a problem, people drinking alcohol in your neighbourhood?	not a problem	a minor problem	a serious problem.

At what level is the alcohol advertisement? That is, are there too many alcohol advertisements in your neighbourhood?	not a problem	a minor problem		a serious problem.
In terms of obtaining any type of alcohol in your community how difficult is it?	very difficult	difficult	Easy	very easy
How far from your home is alcohol being sold?	0.1 miles	0.25 miles	0.5 miles	2.0 miles
In your community are there too many stores that sell alcohol?	Yes	No		
“In terms of obtaining any type of alcohol in your community” and “In terms of obtaining any type of drugs in your community” would you say it is	very difficult to access	very easy to access		
How many adults in your neighbourhood drink alcohol?	none	almost all		

Section B: mental health care in Malawi					
1. Do you have access to any type of counselling and psychotherapy services at your school?	1. Yes	2. No			
If yes, who provides?	1. Teacher	2. Head teacher	3. PTA	4. Form Teacher	5. Other
2. Have you ever heard about mental health services in Malawi?	1. Yes	2. No			
If yes, where can one access mental health care in Malawi?	1. Zomba DHO	2. Zomba M. Hospital	3. Church	4. SJOG	5. Other
3. Do you think it is important to have mental health care in schools?	1. Yes	2. No			
If yes, why?	1. To stay healthy	2. To prevent mental health problems	3. To perform well at school.		

Section C

a). Patient Health Questionnaire (PHQ-9) for Depression.

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Statement	1) Not at all	2) Several days(< 7)	3) More than half days(>7)	4) Nearly every day(14)		
	0	1	2	3		
A) little interest or pleasure in doing things						
B) feeling down, depressed, or Hopeless						
C) trouble falling/staying asleep, or sleeping too much						
D) feeling tired or having little Energy						
E) poor appetite or overeating						
F) feeling bad about yourself, or that you are a failure, or have let yourself or your family down						
G) trouble in concentrating on things such as newspaper or watching TV& video						
H) moving or speaking so slowly that other people have noticed or the opposite; being so fidgety or restless that you have been moving around more than usual						
I) thoughts that you better off dead or hurting in some way.						
What makes you feel depressed	Academic expectation	Class competition	Parental expectations about your performance	School fees	Boy/ Girl Friend	Other

b). If you ticked off any problem or if you experienced any problem mentioned in question(a) above on this questionnaire so far, how difficult have these problems made it for you to do your academic work, take care of things at hostels/home, or get along with other people?

1) Not difficult at all ☐ 2) Somewhat difficult ☐ 3) very difficult ☐ 4) extremely difficult ☐

TOTAL SCORE _____/27

Section D: ASSIST-Y (FOR YOUNG PEOPLE)

INTRODUCTION (Please read to participant)

I am going to ask you some questions about your experience of using alcohol, tobacco and other drugs in your whole life, and in the past three months. These substances can be used in different ways, for example they can be smoked, swallowed, snorted, inhaled or taken in the form of pills. It is important that you try and answer each of the questions as honestly and accurately as possible. The information you provide will be treated as strictly confidential/private and will not be shared with your parents, unless your immediate safety is threatened. For example, if you reveal an intention to hurt yourself or others, or if your substance use is placing you at high risk. Please be assured that if I need to inform your parents, I will discuss this with you first. As we go through the questions, please let me know if you would like me to repeat any of them, or if there is something you don't understand.

Question 1 (please circle a response for each substance).

In your life, have you ever tried (GO THROUGH LIST ie. Tobacco, Alcohol etc)? (NON-MEDICAL USE ONLY)	Responses	
Tobacco products (cigarettes)	Yes	No
Alcoholic beverages (beer, wine, spirits, etc.)	Yes	No
Cannabis (marijuana, pot, grass, hash, etc.)	Yes	No
Cocaine (coke, crack, etc.)	Yes	No
Amphetamine type stimulants (speed, meth, ecstasy, ice etc.)	Yes	No
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	Yes	No
Sedatives/Sleeping Pills (Valium, Temazepam, Stilnox, etc.)	Yes	No
Hallucinogens (LSD, acid, mushrooms, trips, Ketamine, etc.)	Yes	No
Opioids (heroin, morphine, codeine, etc.)	Yes	No
Robe gently if all answers are negative: "I understand that some of these questions may be a bit confronting or uncomfortable to answer, but it's important that you are honest so we can help you with whatever problems you might be having"	If still "No" to all items, stop interview. Remind the client they are welcome to come back and discuss their substance use or any other issues at any time. If "Yes" to any of these items, ask Question 2 for each substance ever used.	

Note: For Qs 2-6 you may need to determine the appropriate frequency of use based on the client's answer.

Question 2 (please circle a response for each substance).

In the past three months, how often have you used (FIRST DRUG USED, SECOND DRUG, ETC)?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
Tobacco products (cigarettes)	0	2	3	4	6
Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
Cocaine (coke, crack, etc.)	0	2	3	4	6
Amphetamine type stimulants (speed, meth, ecstasy, ice etc.)	0	2	3	4	6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
Sedatives/Sleeping Pills (Valium, Temazepam, Stilnox, etc.)	0	2	3	4	6
Hallucinogens (LSD, acid, mushrooms, trips, Ketamine, etc.)	0	2	3	4	6
Opioids (heroin, morphine, codeine, etc.)	0	2	3	4	6
Other - specify:	0	2	3	4	6

If "Never" to all items in Question 2, skip to Question 6. If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.

Question 3 (please circle a response for each substance)

Have you found yourself using (FIRST DRUG, SECOND DRUG, ETC) when you are away from your usual social situations or friends (eg. maybe when you are alone)? If YES, how often has that happened in the last 3 months for (FIRST DRUG, SECOND DRUG,	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily

ETC)?					
Tobacco products (cigarettes)	0	3	4	5	6
Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
Cocaine (coke, crack, etc.)	0	3	4	5	6
Amphetamine-type stimulants (speed, meth, ecstasy, ice etc.)	0	3	4	5	6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
Sedatives/Sleeping Pills (Valium, Temazepam, Stilnox, etc.)	0	3	4	5	6
Hallucinogens (LSD, acid, mushrooms, trips, Ketamine, etc.)	0	3	4	5	6
Opioids (heroin, morphine, codeine, etc.)	0	3	4	5	6
Other - specify:	0	3	4	5	6
Prompt regarding 'social situations' (e.g., when at a party or event and others are using). If "No" skip to Question 4. Question 4 (please circle a response for each substance)					
Has your use of (FIRST DRUG, SECOND DRUG, ETC) led to problems with your health, relationships, finances, school or with the police? If YES, how often has that happened in the last 3 months for (FIRST DRUG, SECOND DRUG, ETC)?	Never	Once or Twice	Monthly	Weekly	Daily Almost Daily or
Tobacco products (cigarettes)	0	4	5	6	7
Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
Cocaine (coke, crack, etc.)	0	4	5	6	7
Amphetamine type stimulants (speed, meth, ecstasy, ice etc.)	0	4	5	6	7
Inhalants (nitrous, glue,	0	4	5	6	7

petrol, paint thinner, etc.)					
Sedatives/Sleeping Pills (Valium, Temazepam, Stilnox, etc.)	0	4	5	6	7
Hallucinogens (LSD, acid, mushrooms, trips, Ketamine, etc.)	0	4	5	6	7
Opioids (heroin, morphine, codeine, etc.)	0	4	5	6	7
Other - specify:	0	4	5	6	7
Question 5 (please circle a response for each substance).					
Has your use of (FIRST DRUG, SECOND DRUG, ETC) impacted on your usual activities? (e.g. school attendance, involvement in recreational activities or sport, completion of chores, family expectations, family events, homework etc.)? If YES, how often has this happened in the last 3 months for (FIRST DRUG, SECOND DRUG, ETC)?	Never	Once or Twice	Monthly	Weekly	Daily Almost Daily or
Tobacco products (cigarettes)					
Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
Cocaine (coke, crack, etc.)	0	5	6	7	8
Amphetamine type stimulants (speed, meth, ecstasy, ice etc.)	0	5	6	7	8
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
Sedatives/Sleeping Pills (Valium, Temazepam, Stilnox, etc.)	0	5	6	7	8
Hallucinogens (LSD, acid, mushrooms, trips, Ketamine, etc.)	0	5	6	7	8
Opioids (heroin, morphine, codeine, etc.)	0	5	6	7	8
Other - specify:	0	5	6	7	8

Ask Question 6 for all substances ever used (i.e. those endorsed in Question 1)			
Question 6 (please circle a response for each substance)			
Has a friend or relative or anyone else ever expressed concern (or worry) about your use of (FIRST DRUG, SECOND DRUG, ETC.)? If YES, was it within the last 3 months or before that for (FIRST DRUG, SECOND DRUG, ETC.)?	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
Tobacco products (cigarettes)	0	6	3
Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
Cocaine (coke, crack, etc.)	0	6	3
Amphetamine type stimulants (speed, meth, ecstasy, ice etc.)	0	6	3
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
Sedatives /Sleeping Pills (Valium, Temazepam, Stilnox etc.)	0	6	3
Hallucinogens (LSD, acid, mushrooms, trips, Ketamine, etc.)	0	6	3
Opioids (heroin, morphine, codeine, etc.)	0	6	3
Other – specify:	0	6	3
Question 7 (please circle the star as per the response)			
	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
Have you ever used any drug by injection? (NON-MEDICAL USE ONLY)	*	*	*
Clients reporting drug use via injection are automatically classified as ‘high risk’, and require both brief intervention and referral to specialist assessment and treatment.			
HOW TO CALCULATE A SPECIFIC SUBSTANCE INVOLVEMENT SCORE.			
For each substance (labelled a. to j.) add up the scores received for questions 2 through 6 inclusive. Do not include the results from both Q1 and Q7 in this score. For			

example, a score for cannabis would be calculated as: Q2c + Q3c + Q4c + Q5c + Q6c			
Note that Q5 for tobacco is not coded, and is calculated as: Q2a + Q3a + Q4a + Q6a			
THE TYPE OF INTERVENTION IS DETERMINED BY THE PATIENT'S SPECIFIC SUBSTANCE INVOLVEMENT SCORE			
		Moderate risk	High risk
	Record specific substance score	Brief Intervention as part of a broader assessment	Brief Intervention and referral to specialist assessment & treatment
		SCORE	SCORE
Tobacco		2-11	12+
Alcohol		5-17	18+
Cannabis		2-11	12+
Cocaine		2-6	7+
amphetamines		2-8	9+
Inhalants		2-8	9+
Sedatives		2-6	7+
Hallucinogens		2-8	9+
Opioids		2-6	7+
other drugs		2-6	7+
Note: For alcohol, a substance involvement score of less than 5 does not warrant a brief intervention. It is still recommended, however, that healthcare professionals discuss the risks associated with frequent use of these substances, as well as monitor future use.			
Now use ASSIST FEEDBACK REPORT CARD to give client feedback about their risk scores as part of the brief intervention.			

Section E

Attitudes Toward Serious Mental Illness Scale–Adolescent Version (ATSMI-AV)					
Attitudes Toward Serious Mental Illness Scale–Adolescent Version (ATSMI-AV) – responses	Completely Disagree	<u>Disagree</u>	<u>Neutral</u>	<u>Agree</u>	<u>Completely Agree</u>
Threat					
1. If I had a mentally ill relative, I wouldn't want anyone to know					
2. Most of my friends would see					

me as being weak if they thought that I had a mental illness					
3. I would be very embarrassed if I were diagnosed as having a mental illness					
4. Mentally ill people scare me					
5. I would cross the street if I saw a mentally ill person coming in order to avoid passing him/her					
6. I think that mentally ill people are strange and weird					
Social Construction/Concern					
1. I think that there really isn't anything called mental illness;					
2. some people are just different					
3. Schools and parents are mostly responsible for making people mentally ill					
4. I think that society makes up					

the diagnosis of mental illness just to control people					
5. I think that you could catch mental illness from another person					
6. I sometimes worry that I may have a mental illness					
Wishful Thinking					
1. Mentally ill people can get well if they are treated with love and kindness					
2. There are medications now that can cure mental illness					
3. People who are mentally ill could be well if they tried hard enough					
4. If a relative of mine became mentally ill, I know that I could convince them to get well					
Categorical Thinking					
1. I can't see myself hanging out with a mentally ill person					

2. Mentally ill people are easy to spot					
3. If you become mentally ill your life is pretty much over					
4. I don't think that there is any way that I can become mentally ill					
Out of Control					
1. Eating the wrong things or taking drugs can make you mentally ill					
2. Mentally ill people tend to be more violent than other people					

<u>Mental Health Knowledge</u>	<u>True</u>	<u>False</u>	<u>Unknown</u>
Awareness of mental health promotion activities			
1. Have you heard about World Sleep Day?			
2. Have you heard about International Mental Health Day?			
3. Have you heard about the International Suicide Prevention Day?			
4. Have you heard about the International Day against			

Drug Abuse and Illicit Drug Trafficking?			
<i>Belief that mental disorders are uncommon and Unchangeable</i>			
1. Middle-aged or elderly individuals are unlikely to develop psychological problems and mental disorders.			
2. Psychological problems in adolescents do not influence academic grades.			
3. Mental disorders and psychological problems cannot be prevented.			
4. Even for severe mental disorders (e.g. schizophrenia), medications should be taken for a given period of time only; there is no need to take them for a long time.			
5. Most mental disorders cannot be cured.			
<i>Normalization of psychological problems and mental Disorders</i>			
1. Psychological or psychiatric services should be sought if one suspects the presence of psychological problems or a mental disorder.			
2. Many people have mental problems but do not realize it.			
3. Psychological problems can occur at almost any age.			

4. Mental problems or disorders may occur when an individual is under psychological stress or facing major life events (e.g. death of family members).			
5. Individuals with a family history of mental disorders are at a higher risk for psychological problems and mental disorders.			
6. Individuals with a bad temperament are more likely to have mental problems.			
<i>Mental health is part of overall well-being</i>			
1. Components of mental health include normal intelligence, stable mood, a positive attitude, quality interpersonal relationships, and adaptability.			
2. Positive attitudes, good interpersonal relationships and a healthy life style can help maintain mental health.			
3. Mental health is a component of health.			
<i>Incorrect beliefs about causes of mental disorders</i>			
1. Mental disorders are caused by incorrect thinking.			
2. All mental disorders are caused by external stressors.			

Appendix 2: Informed Consent Forms

CONSENT FORM FOR KEY INFORMANTS

University of
Malawi,
Chancellor College
P.O. Box, 280
Zomba

Dear participant,

I am John Mulinda Kuyokwa, a Doctor of Philosophy in Educational Psychology student at the University of Malawi. I am intending to conduct a research study about adolescent learners' mental health in school. This letter, therefore, serves as a request to ask you to consent and participate in the study. Furthermore, the study will include the participants from the following institutions: Zomba Mental Hospital (Director of Mental Health Services), Zomba District Council (District Commissioner, Director of Health and Social Services and District Social welfare officer), Eastern Region Education Division (Division Manager), District Education Office (District Education manager), Head Teachers of Masongola secondary school and Mulunguzi Secondary school, Form teachers of all targeted classes and Chairpersons of Parents-Teachers Association.

My study topic is "The Effective Management of Common Psycho-social Problems Among Adolescent Learners in Malawi: A Quasi-experimental Study, Southern, Malawi" Your participation is voluntary and you are free to reject or withdraw from it at any point of the study. By participating in this study, you will help the researcher to develop a good psychological intervention for adolescents suffering from depression and use of psychoactive substances. In addition, the study will be quasi-experimental, hence a psychological intervention will be tested on its efficacy and a questionnaire will be used for data collection. This study will help policy makers and other relevant stakeholders in understanding effective management of mental health problems among adolescent learners and thus help in developing specific interventions that will help students to have good mental health. The researcher understands and acknowledges the sensitivity of sharing health-related information. Therefore, he assures you of privacy and confidentiality. Your results or any other information will not be shared to anyone except the research supervisors if need be, in order to maintain confidentiality. There are no direct monetary benefits as a result of your participation in the study, but the results will be disseminated for the benefit of the public, educators, health personnel and the policy makers to identify ways of improving mental health services by incorporating the counselling service component in education institutions. By giving an informed consent to participate in the study, you are requested to sign this consent form.

Dear researcher, I hereby give consent to participate in the study and I have fully understood the above information.

Student's

signature.....Date.....

Researcher's

signature.....Date.....

CONSENT FORM FOR ADOLESCENT LEARNERS

University of
Malawi,
Chancellor College
P.O. Box, 280
Zomba Dear
participant,

I am John Mulinda Kuyokwa, a Doctor of Philosophy in Educational Psychology student at the University of Malawi. I am intending to conduct a research study about adolescent learners' mental health in school. This letter, therefore serves as a request to ask you to consent and participate in the study. Furthermore, the study will include the participants from the following institutions; Zomba Mental Hospital (Director of Mental Health Services), Zomba District Council (District Commissioner, Director of Health and Social Services and District Social welfare officer), Eastern Region Education Division (Division Manager), District Education Office (District Education manager), Head Teachers of Masongola secondary school and Mulunguzi Secondary school, Form teachers of all targeted classes and Chairpersons of Parents-Teachers Association.

My study topic is "The Effective Management of Common Psycho-social Problems Among Adolescent Learners in Malawi: A Quasi-experimental Study, Southern, Malawi." *Your* participation is voluntary and you are free to reject or withdraw from at any point of the study. By participating in this study, you will help the researcher to develop a good psychological intervention for adolescents suffering from depression and use of psychoactive substances. In addition, the study will be quasi-experimental, hence a psychological intervention will be tested on its efficacy and a questionnaire will be used for data collection. This study will help policy makers and other relevant

stakeholders in understanding effective management of mental health problems among adolescent learners and thus help in developing specific interventions that will help students to have good mental health. The researcher understands and acknowledges the sensitivity of sharing health-related information. Therefore, he assures you of privacy and confidentiality. Your results or any other information will not be shared to anyone except the research supervisors if need be, in order to maintain confidentiality. There are no direct monetary benefits as a result of your participation in the study, but the results will be disseminated for the benefit of the public, educators, health personnel and the policy makers to identify ways of improving mental health services by incorporating the counselling service component in education institutions. By giving an informed consent to participate in the study, you are requested to sign this consent form.

Dear researcher, I hereby give consent to participate in the study and I have fully understood the above information.

Student's signature.....Date.....

Researcher's signature.....Date.....

Appendix 3: Ethical Approval Letters



PRINCIPAL
Prof. R. Tambulasi, B.A (Pub Admin), BPA (Hons), MPA, Ph.D

CHANCELLOR COLLEGE
P.O. Box 280, Zomba, Malawi
Telephone: (265) 524 222
Fax: (265) 524 045
E-mail: principal@ccc.ac.mw

27th November, 2020

TO WHOM IT MAY CONCERN

LETTER OF INTRODUCTION FROM THE UNIVERSITY OF MALAWI, CHANCELLOR COLLEGE FOR MR JOHN MULINDA KUYOKWA

John Mulinda Kuyokwa is a student at the University of Malawi, Chancellor College. He is pursuing a Doctor of Philosophy Degree in Education (Educational Psychology) and he intends to conduct a research study as partial fulfillment for the award of Doctor of Philosophy in Educational Psychology Degree. This letter, therefore serves as a request to ask for permission from your office to allow the student to conduct the study at your institution.

The targeted institutions are as follows; Eastern Region Education Division office (Division Manager), District Education Office (District Education manager), Masongola and Mulunguzi Secondary Schools; Head Teachers, Form teachers of Form 1-4 classes, Students and Chair-persons (Parents Teachers Association) at the said schools, Zomba Mental Hospital (Director of Mental Health Services), Zomba District Council - Director of Health and Social Services and District Social Welfare Officer. His study topic is *"The effective management of mental health problems among adolescent learners in Malawi: A quasi-experimental study, Zomba, Malawi."*

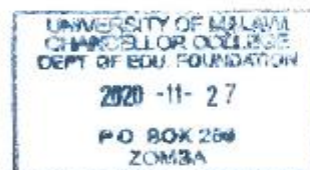
The students aged between 13-19 years will be targeted. In addition, the study will be a quasi-experimental in nature hence a combined approach of group counseling and psycho-education intervention will be tested on its efficacy to manage depression and psychoactive substance use among adolescent student population. A questionnaire will be used to collect data before and after the intervention. The intervention will be done for a period of two months. This study will help policy makers and other relevant stakeholders in understanding effective management of mental health problems among adolescent learners and thus help in developing specific interventions that will help students to have good mental health.

I will be grateful if you consider my request at your earliest convenient time.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "N. Mgala".

Nertha Semphere Mgala, PhD
Head of Department
Education Foundations Department
Telephone: +265 0881 167 607
E-Mail: nsemphere@ccc.ac.mw



Permission from the Office of Regional Education Manager



PRINCIPAL
Prof. R. Tumbiliati, B.A. (Pub Admin), BPA (Hons), MPA, PhD

CHANCELLOR COLLEGE
P.O. Box 28, Zomba, Malawi
Telephone: 084 261 223
Fax: 084 261 224
Email: chancellor@unimw.ac.mw
21st November, 2020

TO WHOM IT MAY CONCERN

LETTER OF INTRODUCTION FROM THE UNIVERSITY OF MALAWI, CHANCELLOR COLLEGE FOR MR JOHN MULINDA KUYOKWA

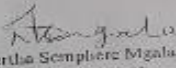
John Mulinda Kuyokwa is a student at the University of Malawi, Chancellor College. He is pursuing a Doctor of Philosophy Degree in Education (Educational Psychology) and he intends to conduct a research study as partial fulfillment for the award of Doctor of Philosophy in Educational Psychology Degree. This letter, therefore, serves as a request to ask for permission from your office to allow the student to conduct the study at your institution.

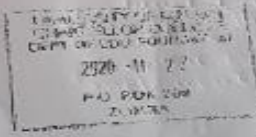
The targeted institutions are as follows: Eastern Region Education Division office (Division Manager), District Education Office (District Education Manager), Machingira and Machingira Secondary Schools, Head Teachers, Form teachers of Form 1-4 classes, Students and CBOs persons (Parents Teachers Association) in the said schools, Zomba Mental Hospital (Director of Mental Health Services), Zomba District Council - Director of Health and Social Services and District Social Welfare Officer. His study topic is "The effective management of mental health problems among adolescents (youths) in Malawi: A quasi-experimental study, Zomba, Malawi".

The students aged between 15-19 years will be targeted. In addition, the study will be a quasi-experimental in nature, hence a combined approach of group counseling and psycho-educational intervention will be used on its efficacy to manage depression and psychoactive substance use among adolescent student population. A questionnaire will be used to collect data before and after the intervention. The intervention will be done for a period of two months. This study will help policy makers and other relevant stakeholders in understanding effective management of mental health problems among adolescent learners and thus help in developing specific interventions that will help students to have good mental health.

I will be grateful if you consider my request at your earliest convenient time.

Yours faithfully,


Nertsha Semphere Mgala, PhD
Head of Department
Education Foundations Department
Telephone: +265 0881 167 607
E-Mail: nsemphere@unimw.ac.mw


2020-11-22
H.O. POK 200
Z. 10/2020
Mr. Mulinda Kuyokwa
Agree accordingly
21/11/2020
OFFICE OF THE REGIONAL EDUCATION MANAGER
EASTERN REGION
ZOMBA

Appendix 4: List of Tables

Table 4: Attitudes towards Mental Health Problems and Gender

Gender and Attitudes Towards Mental Health Problems Cross Tabulation Table									
Gender	Attitudes towards mental health problems		Total	OR (95% CI)	Gender	Attitudes towards mental health problems		Total	OR (95% CI)
	Pre-intervention (Study group)					Pre-intervention (Control group)			
	N (%)					N (%)			
	Positive	Negative				Positive	Negative		
Male	30(70)	67(56)	97		Male	28(64)	64(58)	92	
Female	13(30)	53(44)	66	1.825	Female	16(36)	46(42)	62	1.258
Total	43	120	N=163		Total	44	110	N=154	
Gender	Attitudes towards mental health problems		Total	OR (95% CI)	Gender	Attitudes towards mental health problems		Total	OR (95% CI)
	Post-intervention (Study group)					Post-intervention (Control group)			
	N (%)					N (%)			
	Positive	Negative				Positive	Negative		
Male	50(57)	35(49)	85	1.390	Male	15(54)	48(64)	63	0.649
Female	37(43)	36(51)	73		Female	13(46)	27(36)	40	
Total	87	71	N=158		Total	28	75	N=103	

Table 5: Attitudes Towards Mental Health Problems and Age

Age and Attitudes towards mental health problems Cross tabulation table									
Age	Attitudes towards mental health problems Pre-intervention (Study group)		Total	OR (95% CI)	Age	Attitudes towards mental health problems Pre-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Positive	Negative				Positive	Negative		
10-15	20(47)	31(26)	51		10-15	17(39)	30(19)	47	
16-19	23(53)	89(74)	112	2.496	16-19	27(41)	80(52)	107	1.679
Total	43	120	N=163		Total	44	110	N=154	
Age	Attitudes towards mental health problems Post-intervention (Study group)		Total	OR (95% CI)	Age	Attitudes towards mental health problems Post-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Positive	Negative				Positive	Negative		
10-15	24(28)	25(35)	49	0.701	10-15	15(54)	24(32)	39	2.452
16-19	63(72)	46(65)	109		16-19	13(46)	51(68)	64	
Total	87	71	N=158		Total	28	75	N=103	

Table 6: Attitudes Towards Mental Health Problems and Residence

Residence and Attitudes towards mental health problems Cross tabulation table									
Residence		Attitudes towards mental health problems Pre-intervention (Study group)		Total	OR (95% CI)	Residence		Attitudes towards mental health problems Pre-intervention (Control group)	OR (95% CI)
		N (%)						N (%)	
		Positive	Negative					Positive	Negative
Rural		30(70)	69(58)	99	1.706	Rural		31(70)	89(81)
Urban		13(30)	51(42)	64		Urban		13(30)	21(91)
Total		43	120	N=163		Total		44	110
Residence		Attitudes towards mental health problems Post-intervention (Study group)		Total	OR (95% CI)	Residence		Attitudes towards mental health problems Post-intervention (Control group)	OR (95% CI)
		N (%)						N (%)	
		Positive	Negative					Positive	Negative
Rural		60(69)	54(76)	114	0.700	Rural		18(64)	58(77)
Urban		27(31)	17(24)	44		Urban		10(36)	17(23)
Total		87	71	N=158		Total		28	75
								N=103	

Table 8: Knowledge of Mental Health Problems and Gender

Gender and knowledge of mental health problems Cross tabulation table									
Gender	Knowledge of mental health problems Pre-intervention (Study group)		Total	OR (95% CI)	Gender	Knowledge of mental health problems Pre-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Yes	No				Yes	No		
Male	19(50)	78(62)	97		Male	18(46)	74(64)	92	
Female	19(50)	47(38)	66	0.603	Female	21(54)	41(36)	62	0.475
Total	38	125	N=163		Total	39	115	N=154	
Gender	Knowledge of mental health problems Post-intervention (Study group)		Total	OR (95% CI)	Gender	Knowledge of mental health problems Post-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Yes	No				Yes	No		
Male	63(57)	22(47)	85	1.491	Male	16(67)	47(59)	63	1.362
Female	48(43)	25(53)	73		Female	8(33)	32(41)	40	
Total	111	47	N=158		Total	24	79	N=103	

Table 9: Knowledge of Mental Health Problems and Age

Age and knowledge of mental health problems Cross tabulation table									
Age	Knowledge of mental health problems Pre-intervention (Study group)		Total	OR (95% CI)	Age	Knowledge of mental health problems Pre-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Yes	No				Yes	No		
10-15	9(31)	42(35)	51	0.613	10-15	9(23)	38(33)	47	
16-19	29(69)	83(65)	112		16-19	30(77)	77(67)	107	0.608
Total	38	125	N=163		Total	39	115	N=154	
Age	Knowledge of mental health problems Post-intervention (Study group)		Total	OR (95% CI)	Age	Knowledge of mental health problems Post-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Yes	No				Yes	No		
10-15	38(34)	11(23)	49	1.704	10-15	13(54)	26(33)	39	2.409
16-19	73(66)	36(77)	109		16-19	11(46)	53(67)	64	
Total	111	47	N=158		Total	24	79	N=103	

Table 10: Knowledge of Mental Health Problems and Residence

Residence and knowledge of mental health problems Cross tabulation table											
Residence		Knowledge of mental health problems Pre-intervention (Study group)		Total	OR (95% CI)	Residence		Knowledge of mental health problems Pre-intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
Rural		23(61)	76(61)	99	0.989	Rural	27(69)	93(81)	120	0.532	
Urban		15(39)	49(39)	64		Urban	12(31)	22(19)	34		
Total		38	125	N=163		Total	39	115	N=154		
Residence		Knowledge of mental health problems Post-intervention (Study group)		Total	OR (95% CI)	Residence		Knowledge of mental health problems Post-intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
Rural		82(74)	32(68)	114	1.325	Rural	18(75)	58(73)	76	0.890	
Urban		29(36)	15(32)	44		Urban	6(25)	21(27)	27		
Total		111	47	N=158		Total	24	79	N=103		

Table :12 Substance Use and Gender

Gender and substance use Cross tabulation table											
Gender		Substance use Pre-intervention (Study group)		Total	OR (95% CI)	Gender		Substance use Pre-intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
Male		39(76)	58(52)	97		Male		27(79)	65(54)	92	
Female		12(24)	54(48)	66	3.026	Female		7(21)	55(46)	62	3.264
Total		51	112	N=163		Total		34	120	N=154	
Gender		Substance use Post-intervention (Study group)		Total	OR (95% CI)	Gender		Substance use Post- intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
Male		23(56)	62(53)	85	1.134	Male		6(60)	57(61)	63	0.947
Female		18(44)	55(47)	73		Female		4(40)	36(39)	40	
Total		41	117	N=158		Total		10	93	N=103	

Table 13: Substance Use and Age

Age and substance use Cross tabulation table											
Age		Substance use Pre-intervention (Study group)		Total	OR (95% CI)	Age		Substance use Pre-intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
10-15		12(24)	39(35)	51		10-15	4(12)	43(36)	47		
16-19		39(76)	73(65)	112	0.576	16-19	30(88)	77(74)	107	0.239	
Total		51	112	N=163		Total	34	120	N=154		
Age		Substance use Post-intervention (Study group)		Total	OR (95% CI)	Age		Substance use Post-intervention (Control group)			OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
10-15		8(20)	41(35)	49	0.449	10-15	3(30)	36(39)	39	0.679	
16-19		33(80)	76(75)	109		16-19	7(70)	57(61)	64		
Total		41	117	N=158		Total	10	93	N=103		

Table 14: Substance Use and Residence

Residence and substance use Cross tabulation table									
Residence		Substance use Pre-intervention (Study group)		Total	OR (95% CI)	Residence		Substance use Pre-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
Rural		27(53)	72(64)	99	0.625	Rural		24(71)	96(80)
Urban		24(47)	40(46)	64		Urban		10(29)	24(20)
Total		51	112	N=163		Total		34	120
Residence		Substance use Post-intervention (Study group)		Total	OR (95% CI)	Residence		Substance use Post-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
Rural		27(66)	87(74)	114	0.665	Rural		7(70)	70(75)
Urban		14(44)	30(26)	44		Urban		3(30)	23(25)
Total		41	117	N=158		Total		10	93
								N=103	

Table 16: Suicidal Thoughts and Gender

Gender and suicidal thoughts Cross tabulation table									
Gender		Suicidal thoughts Pre-intervention (Study group)		Total	OR (95% CI)	Gender		Suicidal thoughts Pre-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
Male		27(63)	70(58)	97		Male		8(62)	84(60)
Female		16(37)	50(42)	66	1.205	Female		5(38)	57(40)
Total		43	120	N=163		Total		13	141
Gender		Suicidal thoughts Post-intervention (Study group)		Total	OR (95% CI)	Gender		Suicidal thoughts Post-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
Male		20(51)	65(55)	85	0.874	Male		5(36)	58(65)
Female		19(49)	54(45)	73		Female		9(64)	31(35)
Total		39	119	N=158		Total		14	88
								N=103	

Table 17: Suicidal Thoughts and Age

Age and suicidal thoughts Cross tabulation table									
Age		Suicidal thoughts Pre-intervention (Study group)		Total	OR (95% CI)	Age		Suicidal thoughts Pre-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
10-15		6(14)	45(38)	51		10-15		4(31)	43(30)
16-19		37(86)	75(62)	112	0.270	16-19		9(69)	98(70)
Total		43	120	N=163		Total		13	141
Age		Suicidal thoughts Post-intervention (Study group)		Total	OR (95% CI)	Age		Suicidal thoughts Post-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
10-15		16(41)	33(28)	49	1.813	10-15		4(29)	35(39)
16-19		23(59)	86(72)	109		16-19		10(71)	54(61)
Total		39	119	N=158		Total		14	89
									N=103

Table 18: Suicidal Thoughts and Residence

Residence and suicidal thoughts Cross tabulation table									
Residence		Suicidal thoughts Pre-intervention (Study group)		Total	OR (95% CI)	Residence		Suicidal thoughts Pre-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
Rural		28(65)	71(59)	99		Rural		10(77)	110(78)
Urban		15(35)	49(41)	64	1.288	Urban		3(23)	31(22)
Total		43	120	N=163		Total		13	141
Residence		Suicidal thoughts Post-intervention (Study group)		Total	OR (95% CI)	Residence		Suicidal thoughts Post-intervention (Control group)	
		N (%)						N (%)	
		Yes	No					Yes	No
Rural		31(79)	83(70)	114	1.681	Rural		9(64)	67(76)
Urban		8(21)	36(30)	44		Urban		5(46)	21(24)
Total		39	119	N=158		Total		14	88
								N=103	

Table 20: Gender and Depression

Gender and Depression Cross Tabulation Table									
Gender	Diagnosis of depression Pre-intervention (Study group)		Total	OR (95% CI)	Gender	Diagnosis of depression Pre-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	Yes	No				Yes	No		
Male	82(58)	15(71)	97	0.547	Male	83(62)	9(43)	92	
Female	60(42)	6(29)	66		Female	50(38)	12(57)	62	2.213
Total	142	21	N=163		Total	133	21	N=154	
Gender	Diagnosis of depression Post-intervention (Study group)		Total	OR (95% CI)		Diagnosis of depression Post-intervention (Control group)		Total	OR (95% CI)
	N (%)					N (%)			
	yes	No				Yes	No		
Male	75(54)	10(53)	85	1.055	Male	48(59)	15(71)	63	0.565
Female	64(46)	9(47)	73		Femal e	34(41)	6(29)	40	
Total	139	19	N=158		Total	82	21	N=103	

Table 21: Depression and Age

Age and diagnosis of depression Cross tabulation table											
Age		Depression Pre-intervention (Study group)		Total	OR (95% CI)	Age		Depression Pre-intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
10-15		44(31)	7(33)	51		10-15	35(26)	12(57)	47	0.268	
16-19		98(69)	14(67)	112	0.898	16-19	98(74)	9(43)	107		
Total		142	21	N=163		Total	133	21	N=154		
Age		Depression Post-intervention (Study group)		Total	OR (95% CI)	Age		Depression Post-intervention (Control group)		Total	OR (95% CI)
		N (%)						N (%)			
		Yes	No					Yes	No		
10-15		45(32)	4(21)	49	1.795	10-15	29(35)	10(48)	39	0.602	
16-19		94(68)	15(79)	109		16-19	53(65)	11(52)	64		
Total		139	19	N=158		Total	82	21	N=103		

Table 22: Depression and Residence

Residence and diagnosis of depression Cross tabulation table											
Residence		Depression Pre-intervention (Study group)		Total	OR (95% CI)	Residence	Depression Pre-intervention (Control group)		Total	OR (95% CI)	
		N (%)					N (%)				
		Yes	No				Yes	No			
Rural		89(63)	10(48)	99		Rural	107(80)	13(62)	120		
Urban		53(37)	11(52)	64	1.847	Urban	26(20)	8(38)	34	2.533	
Total		142	21	N=163		Total	133	21	N=154		
Residence		Depression Post-intervention (Study group)		Total	OR (95% CI)	Residence	Depression Post-intervention (Control group)			OR (95% CI)	
		N (%)					N (%)				
		Yes	No				Yes	No			
Rural		100(72)	14(74)	114	0.916	Rural		60(73)	17(81)	76	0.593
Urban		39(28)	5(26)	44		Urban		22(67)	4(19)	26	
Total		139	19	N=158		Total		82	21	N=103	

PhD Calendar of events - Timeline

	2020 - 2022 Months Calendar
Activities	Feb 2020– Dec 2022
1. Research proposal development while working with supervisors	Feb 2020 – Nov 2020-passed
2. Research Proposal defense while working with supervisors	November /16/2020-passed
3. Key informant data collection while working with supervisors	December 2020-passed
4. Printing of questionnaires, getting consent from UNIMA, PTA, & REM.	Nov – Dec 2020-passed
5. Ethical approval from UNIMA	Nov - December 2020-passed
6. Key Informant data collection	December –Jan 2021-passed
7. Data analysis of key informant study	January 2021 –passed
8. Training of implementers while working with supervisors	January - February 2021 passed
9. Participant data collection at 2 sites (Masongola & Likangala secondary school). Baseline study	March 2021 passed
10. Intervention implementation - while working with supervisors -Two sessions per week, each session-45 minute. -Sessions were conducted on Mondays and Thursdays	March/April 2021 Total 9 sessions per two months passed
11. Data collection-recollection after intervention	April 2021 passed
12. Publication for the baseline study findings; Key informant study, Adolescent study – Depression, Knowledge, psychoactive substance use, attitudes towards and mental health problems.	April 2021 –December 2021 – 2 papers submitted
13. Data entry, cleaning, synthesis, analysis and write-up while working with the supervisors, and for guidance at all stages of research process.	April 2021 – December 2021 passed
14. PhD thesis submission	MAY 2022
15. PhD thesis defense	WAS DONE on 15 November 2022
16. Publication of intervention study findings - Depression, Knowledge, psychoactive substance use, attitudes towards mental health problems, group counseling and psycho-education.	January 2022 - Onwards