EFFECTIVENESS OF THE WELL BEING THERAPY IN DEPRESSION MANAGEMENT AMONG ADOLESCENTS IN SECONDARY SCHOOLS IN KAKAMEGA COUNTY, KENYA

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Doctor of Philosophy in Public Health of Masinde Muliro University of Science and Technology

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DECLARATION

This thesis is my original work, prepared with no other than the indicated sources and support and has not been submitted elsewhere for a degree or any other award.

Signature……. Date……

Bakesia Grace Buluma

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CERTIFICATION

The undersigned certify that they read and hereby recommend for acceptance of Masinde Muliro University of Science and Technology a thesis entitled, ***'Effectiveness of the Well-Being Therapy in Depression Management Among Adolescents in Secondary Schools in Kakamega County, Kenya.'***

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DEDICATION

I dedicate this work to my beloved parents Samuel Bakesia and Benina Shikuku.

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I want thank God for enabling me walk this journey. Exceptional acknowledgement goes to my supervisors Dr. Rose Olayo, Prof. Gladys Mengich and Dr. Rose Opiyo for their great insights and time to configure this thesis to form.

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Bakesia, G.B.

ABSTRACT

Depression is the third leading serious public health problem for adolescents. It is also the second leading cause of death among this population. Well-Being Therapy (WBT) is a psychotherapy that improves optimal psychological well-being. It has effectively managed mental disorders in comparison to other therapies but more effectiveness studies are needed. Broadly, the study determined the effectiveness of WBT in depression management among adolescents in secondary schools in Kakamega County, Kenya. Specifically, the study determined the prevalence, risk factors, strategies for managing depression, and the effectiveness of the WBT. The study was guided by Hopelessness Theory of Depression and the Dynamic Equilibrium Theory. It adopted an experimental design with mixed methods. Tools for adolescents were Kutcher Adolescent Depression Scale-11, Socio-demographic Questionnaire, Psychological Well Being Scale-18. A teacher's questionnaire was used. Key informant guide was for 12 Sub-County Medical and 12 Education officers. Sampling of 411 adolescents for pretest was done by G-power, and for the posttest, 182 were included. 42 Schools were sampled through multi-stage cluster sampling, while teachers, education officers and medical officers were purposively sampled. Descriptive and inferential analysis was done. Ethical review was from the Masinde Muliro University of Science and Technology Institutional Ethics and Review Committee. Prevalence of depression was 44.8%. Risk factors were being orphaned, poverty, access to mobile phones, having anxiety and HIV. Findings from the adolescents (*n*=411, 100%) reveal that guidance and counselling and life skills education (*n*= 325, 79%) are the main methods used. Findings further revealed that only 1% use anti-depressants. WBT was more effective than G&C as depression mean were significantly lower at post-test for adolescents who received WBT (mean 13.8, SD=3.6, $p<0.001$) than G&C (Mean 21.0, SD=6.6, $p<0.001$). WBT and G&C showed differences in psychological well-being scores at pretest-post-test, although there was increased significant difference in the PWB mean of pretest-post-test for the adolescents who received WBT (mean 51.3 SD=6.7 and 79.5 SD=8.2; <0.001) than for adolescents who received G&C (mean 50; SD= 6.3 and mean 59.6 SD 8.3; $p<0.001$ respectively. For the effect size test for non-depressive symptoms, adolescents in WBT were favored significantly (Hedge g=0.9 (0.53-1.52), overall effect size Z=1.26; p=0.05). Post-tests showed that when psychological well-being increases depression decreases. The study recommends a longitudinal study to determine changes in the prevalence of depression among adolescents in secondary schools. Furthermore, there is need for frequent screening of depression among adolescents with the anxiety, HIV, diabetes, respiratory diseases for detection and action. The study recommends that the Ministry of Education may include a policy statement on the use of WBT in depression management among adolescents.

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ABBREVIATIONS AND ACRONYMS

APA	American Psychological Association
CBT	Cognitive Behavioral Therapy
DSM	Diagnostic and Statistical Manual of Mental Disorders
ECT	Electro-convulsive Therapy
G&C	Guidance and Counselling
G& CTs	Guidance & Counselling Teachers
GOK	Government of Kenya
HICs	High Income Countries
HDT	Hopelessness Depression Theory
IPT	Inter-Personal Therapy
KNBS	Kenya National Bureau of Statistics
KPHC	Kenya Population and Housing Census
LMICs	Low and Middle-Income Countries
LSE	Life Skills Education
MDG	Millenium Development Goals
MOE	Ministry of Education
MOH	Ministry of Health
NCD	Non-Communicable Diseases
PDT	Psycho-dynamic Therapy
PWB	Psychological Well Being
RCT	Random Control Trials
SED	Sub- County Education Director
SMO	Sub- County Medical Officer
SSA	Sub-Saharan Africa
TMS	Transcranial Magnetic Stimulation
UNICEF	United Nations Children's Education Fund
US	United States
WBT	Well-Being Therapy
WHO	World Health Organization

OPERATIONAL DEFINITIONS OF TERMS

Adolescent: herein pertains to an individual experiencing a transitional phase of growth and development, in age 15 to 19, attends a secondary school

Depression: herein refers to a medical health problem that majorly affects how the adolescents feel, think and act, making them experience sadness, hopelessness, anger outbursts, appetite loss, loss of pleasure in activities once liked, loss of sleep, loss of concentration in school, loss of desire to relate with peers, loss of desire to attend school and having thoughts of suicide or murder for more than two weeks or more

Effectiveness: herein refers to a reduction in the depression levels and an increase in psychological well-being.

Guidance and Counselling: herein refers to the skilled relationship in which the adolescent will be helped and guided towards educational, social, educational, and rehabilitative processes for depression management

Psychotherapy: herein refers to a non-medical method of dealing with medical conditions involving a skilled person with an adolescent in need of help as a result of inability to manage depression

Psychological Well-being: refers to a consistent, reliable, and accurate method of evaluating positively the adolescent's present and past lives, sense of ongoing development, conviction that life has meaning and purpose, possession of positive relationships with others, ability to manage the adolescent's life and environment successfully, and a sense of autonomy.

Secondary School: herein refers to a learning institution is either private, public, mixed, day, boarding, day and boarding and is registered by the Ministry of Education

Well Being Therapy: refers to a depression management strategy that focuses on raising the adolescents' self-acceptance, positive relations with others, environmental mastery, purpose in life, personal growth and autonomy so as to improve their psychological well-being and not just alleviating suffering from depression.

CHAPTER ONE

INTRODUCTION

1.1 Background Information to the Study

Depression stands as the commonest mental disorder, and is a major public health concern for adolescents (WHO, 2021). Depression is among the adolescence health problems, including injuries, violence, bullying and among others (WHO, 2021). Depression is the second cause of death among adolescents of 15-19 years (Liu *et al*., 2022). Child psychiatric epidemiological studies also affirm that children and adolescents experience depression. Studies have further indicated that the peak of depression as well as long-term depression occurs at adolescence (Bierao *et al*., 2020). While it is viewed and thought of as just a feeling of sadness, depression is a real medical condition presenting with specific symptoms. It modifies the manner in which people envisage themselves. Among adolescents, the disease not only a cause of disability, but is also a cause of suicidal behavior (WHO, 2021).

Depression not only impacts on individuals but also on families, communities and states besides plunging individuals into poverty (Daly, 2022). For adolescents, it has triple negative effects going beyond social relations, school performance and poor health (Cheun*g et al*., 2013; Awadalla *et al*., 2020; Weersing *et al*., 2006). Adolescent depression if not addressed increases risk for hospital visits and admissions (Shorey *et al*., 2022). It also contributes to recurrent depression, psycho-social deterioration, substance abuse, increased antisocial behaviors as well as teenage pregnancies (Alaie *et al*., 2021). It's critical to have correct diagnosis and care of depression due to its recurrent nature, association with subpar academic

achievement, functional impairment, and troublesome relationships with parents, siblings, and peers, as well as its association with these factors (Jiang *et al*., 2021).

Global data presumes that mental diseases record 16% of the international burden of disease among adolescents, and that 10-20% of these adolescents suffer from mental disorders (WHO, 2021). Across the world, approximately 350 million people have depression and 1.9 million Kenyans are affected (WHO, 2021). A study done in the United States of America (USA) shows that the frequency of depression among adolescents has doubled over the recent past (Daly, 2022). In Nepal, the prevalence is 44.2% (Bhattarai *et al*., 2020).

In the Sub-Saharan Africa, a region that has challenges with communicable and non-communicable diseases, psychiatric ailments are responsible for almost 10% of the overall disease burden (WHO, 2018). Studies on prevalence of depression among adolescents is at 15.3% to 37% among Egyptian school-going children (El-Missiry *et al*., 2011) and 6.9 to 23.8 % among Nigerian students (Adewuya *et al*., 2020). In the neighbouring country, Uganda, prevalence is at 21% (Nalugya-Sserunjogi *et al*., 2016), while in Kenya, the prevalence reported in secondary schools in Homa Bay County is at 57.5% (Nyayieka *et al*., 2020), 58.9% in Makueni County (Nzangi e*t al*., 2022) and 45.9% in Nairobi City County (Osborn *et al*., 2020).

Evidence exists on several risk factors working to cause depression. The biomedical risks of depression among adolescents encompass chronic illness, being of the female gender, hormonal activities, parental depression together with the use of certain medications among others (Shah *et al*., 2020). Age, gender, ethnic status, socioeconomic statuses have also been indicated to be predictors of this disease (Thapar *et al*., 2012). It has also been shown that children who encounter stressful

life events are strongly related to first inception of depression rather than its recurrence. These events entail physical fights, death of a guardian or close relative, as well as termination of a romantic relationship (Briggs *et al*., 2013). Besides, studies have shown that negative family relationships, victimization by peers such as bullying, as well as ill-treatment are frequent risks for depression (Shah *et al*., 2020). Furthermore, existing literature from Asia shows that a number of adolescents today live in poverty and orphan-hood that is HIV/AIDS-related and such could contribute to depression (Shah *et al*., 2020).

Timely interventions in depression greatly decreases the numbers and rigor of recurrent depression (WHO, 2017). Medical strategies employed in depression management are Electro-convulsive therapy (ECT), Antidepressants, and Trans-cranial Magnetic Stimulation (TMS) Likewise, Cognitive Behavioral Therapy (CBT), Interpersonal Therapy (IPT) Psycho-dynamic Therapy (PDT) and among other psychotherapies have been used to manage depression (WHO, 2017). Other interventions include provision of parental support, addressing parental mental disorders, family education and addressing adolescent comorbidity (Daly, 2022).

Recommendations from a systematic review point to proper nutrition, music, exercise, sleep and hygiene as other management approaches to adolescent depression. The review shows that majority of these interventions are implemented in the developed nations (Das *et al.*, 2016). In Kenyan secondary schools, the most popular management strategies for majority of psychological problems are G&C (Wambu & Wickman, 2016) and LSE (Mathenge, 2018). Adolescents are likely to have low remission and relapses if proper intervention is not chosen.

Well-Being Therapy (WBT), an intervention advanced by Fava (1999) is an educational model that uses a structured diary for self-observation. The therapy is embraced for its ability to prevent relapse and achieve remission from depression through increasing psychological well-being (PWB) (Fava 2016; Eren & Kilic, 2017). WBT focuses on increasing PWB, which is essential in prevention of depression (Fava, 2016). Unlike the other interventions which focus on particular components of well-being, WBT addresses the six key components of psychological well-being. The therapy desists from explaining to the patient at the start, the procedures of the therapy but rather aims at furthering optimal functioning rather than decreasing psychological suffering (Fava, 2007; Fava *et al*., 2009).

Effectiveness of the WBT has been tested in various settings. Studies that have tested the effectiveness of WBT include Fava *et al*., (1998), Ruini *et al*., (2006), Moeenizadeh & Salagame (2010), Tomba *et al*., (2010), Fava *et al*., (2014), Moeenizadeh & Kumar (2017), Xu *et al*., (2019), and Nikrahan *et al*., (2019). A current systematic review by Telaumbanua revealed that WBT can be implemented among adults as well as in students with mood disorders and addictions. The review also showed that WBT may be used for prevention as well as curation (Telaumbanua, 2020). A study by Femson (2020) on the impact of WBT on perceived stress and PWB, showed that there was no significant decrease on stress levels for the participants (Femson, 2020).

WBT as an intervention has been successfully used in management of depression among clinical as well as in educational settings. It has been used to manage other mental illnesses and diseases as first line treatment or in combination with other therapies. Although WBT is an effective intervention for depression, it has rarely in

been used LMICs such as Kenya and Kakamega County in particular. Its effectiveness has been established, but more needs to be done in comparison to other interventions for adolescents in secondary schools, in Kenya. This study pursued to ascertain the effectiveness of the WBT in management of depression among adolescents in secondary schools in Kakamega County, Kenya.

1.2 Statement of the Problem

Depression is the most common neuropsychiatric condition and the most alarming among adolescents (WHO, 2021). Commencement of depression is characteristically from the mid-to-late puberty and may extend to maturity (Petito *et al*., 2020). Adolescence is a critical stage in life as it comes with discovery of identities, and marks transition into adulthood (WHO, 2021). Other than infancy, adolescence is the other phase marked with biopsychosocial changes. These changes result into increased levels of stress and emotional variabilities (WHO, 2017). A number of studies on depression among the adolescent popluations have mainly been done in high-income countries (Daly, 2022; Shorey *et al*., 2022) with less studies focusing on LMICs (Girma *et al*., 2021).

Moreover, a systematic review by Shorey *et al*., (2022) show that there is a increased prevalence of adolescent in the LMICs in the Middle East nations, in Africa, and in the Asian countries (Shorey *et al*., 2022). Studies on prevalence of depression among adolescents is at 6.9 to 23.8 % among Nigerian students (Adewuya *et al*., 2020). In Kenya, the prevalence reported in secondary schools in Homa Bay County is at 57.5% (Nyayieka *et al*., 2020), 58.9% in Makueni County (Nzangi e*t al*., 2022) and 45.9% in Nairobi City County (Osborn *et al*., 2020). The

growing prevalence of adolescent depressive symptoms has caught the attention of researcher who have sought to identify the risk factors (Daly, 2022).

Results of a research carried out by Wahid *et al*., (2021) show that a family history, bullying, and adverse family environment were some of the risk factors (Wahid *et al*., 2021). Their study further identified medical illnesses, and disability, being female, bereavement, substance and alcohol abuse, in addition to low self-esteem (Wahid *et al*., 2021). Other studies have also shown that academic pressures, poverty, and cognitive alterations may be predictors of adolescent depression (Njoku & Obogo 2017; WHO, 2021; Larsen *et al*., 2020).

If the problem of depression continues to occur among the adolescents, there is a major risk for suicide (Singh *et al*., 2023). Depression also results into serious social and academic maladjustments for the adolescents. Such include as an increased rate of unexplained physical signs, disorders related to eating, anxiety (Cheung *et al*., 2013; Awadalla *et al*., 2020), delinquency (Singh *et al*., 2023)., school absenteeism, and substance misuse (WHO, 2021). Importantly, recent meta-analytic conclusions hint at a significant burden of depression in terms of costs for all the ages (Alaie *et al*., 2021).

Primary intervention may avert the advanced development of a severe depression (Singh *et al*., 2023). Findings of Wahid *et al*., (2021) show that schools are feasible place for screening (Wahid *et al*., 2021), yet most schools in Kenya rely on observations (Wango, 2020). Adolescent depression calls for measures for prevention depression, diagnosis and management. Few studies have focused on depression interventions among young people in Kenya (Osborn *et al*., 2020b).

WHO (2017) as well as the APA (2013) recommend depression interventions such as antidepressants, TMS, ECT and psychotherapies (WHO, 2017; APA, 2013). Well Being Therapy (WBT), as a psychotherapy emphasizes on positive PWB and alleviation of depression (Moeenizadeh & Zarif, 2010). It has been tried in multiple settings (Fava *et al.,* 2005; Ruini *et al*., 2006; Ruini *et al*., 2009, Fava, 2016;) and for various conditions (Nikrahan *et al*., (2019). Despite recognition of its effectiveness among other different populations in High income countries, it has limited trials in secondary schools in LMICs. WBT has not been tried in comparison G&C which is used in the Kenyan context. This necessitated the test for WBT's effectiveness in comparison to G&C and for adolescents in schools.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

The general objective of the study was to establish the effectiveness of Well Being Therapy on depression management among adolescents in secondary schools in Kakamega County**,** Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were: -

i. To determine the prevalence of depression among adolescents in secondary schools in Kakamega County
ii. To assess the risk factors of depression among adolescents in secondary schools in Kakamega County
iii. To establish the strategies used in management of depression among adolescents in secondary schools in Kakamega County

iv. To examine the effectiveness of the Well Being Therapy on depression management among adolescents in secondary schools in Kakamega County

1.4 Research Questions

The study aimed at answering the questions below: -

i. What is the prevalence of depression among adolescents in secondary schools in Kakamega County?
ii. What are the risk factors of depression among adolescents in secondary schools in Kakamega County?
iii. What are the strategies used in management of depression among adolescents in secondary schools in Kakamega County?

1.5 Null Hypotheses of the Study

i. H_0: There was no significant difference in the depression scores of adolescents in the WBT and G&C groups in secondary schools in Kakamega County
ii. H_0: There was no significant difference in the psychological well-being scores of adolescents in the WBT and G&C groups in secondary schools in Kakamega County.

1.6 Justification of the Study

The study is instrumental since it bridges data gaps on prevalence of depression among adolescents in secondary schools in Kakamega County which had less evidence. Despite higher prevalence rates of depression reported in schools in Kenya (Nzangi *et al.*, 2022; Nyayieka *et al.*, 2020), little has been reported among adolescents in school especially in Kakamega County; a gap that the study fills. The study sought to examine the effectiveness of Well Being Therapy-a self-driven long-

lasting therapy in comparison to G&C currently offered in schools thus helping in meeting SDG 3. The results of this study provided information on how WBT is effective depression management among adolescents attending secondary schools in Kakamega County. Adolescents may therefore benefit from the evidence-based therapy.

Having found the self-driven WBT effective, the study may inform the policy makers to include it in the Kenya Mental Health Policy (KMHP) of 2015-2030 which emphasizes on people-driven mental health interventions. The KMHP identifies a need for adoption of interventions for prevention and promotion of the mental health, a gap WBT may address. The Kenya School Health Policy (KSHP) makers may also benefit from this study as they call for adoption of community implemented strategies. The global as well as school health policy makers may also benefit from this study as they call for adoption of community-based interventions. The study supports the achievement of SDG 3- "*Good health and well-being*" through the provision of WBT as an effective depression therapy. The G&C offered is problem-oriented while WBT manages depression and enhances PWB thus increasing remission and preventing relapses among adolescents. This may benefit the parents and community, because it may provide a depression management strategy that is evidence-based among the adolescents thus reducing the effects of the disease. Researchers may also benefit from this study because of body of knowledge gaps created by this study.

1.7 Significance of the Study

Although depression is enshrined in the fourth section of the third Sustainable Development Goal (SDG) of reducing prevalence of non-communicable diseases,

little efforts are being put in place to address depression (UN report, 2020). The revised Global Comprehensive Mental Health Action Plan of 2013-2030 calls for provision of services within the community settings (WHO, 2022). This study is therefore an effort in meeting the tenets of the policy documents. The Constitution of Kenya (2010) under the forty third article advocates for the right to health care services for persons with mental illnesses while the fifty fourth article recognizes mental illnesses as a form of disability that needs to be attended to (GoK, 2010). The Kenya Mental Health Policy of 2015-2030 on the other hand calls for interventions that are comprehensive and multi-dimensional in nature (MoH, 2015). The Kenya School Health Policy further calls for the promotion of healthy lifestyles and implementation of interventions that may decrease the risk factors for the Non-Communicable Diseases (NCDs) and mental health (Government of Kenya, 2018). Although policy documents provide for all these, lesser efforts are in place for prevention, promotion and management of depression. WBT is one such intervention that addresses this gap.

1.8.1 Limitations of the Study

The results of this research were restricted by the under-representation of studies on WBT from Africa, especially Kenya, particularly in Kakamega County. These was addressed by review of literature from other regions. Despite the fact that research shows early onset of depression, this study was conducted secondary schools leaving out younger children who may also be having depression symptoms. The study non consenting rates were at 8.3% for the pretest and 1% for the post-test for personal choices. The researcher however included all the other willing participants. Moreover, the sample distribution of this study was restricted to adolescents with major depressive disorder. The researcher may not know how adolescents with the

other types of depression may react to WBT. Application of the findings of this study will be limited to adolescent populations with similar characteristics such as major depression symptoms.

1.8.2 Delimitation of the Study

This research was conducted among adolescents in secondary schools in Kakamega County. The focus on depression was because it is the commonest of the mental illnesses affecting adolescents with dire consequences such as suicide (WHO, 2021; Liu *et al*., 2022). The choice of adolescents in secondary schools between ages 15-19 was because of the triple burden of having to manage depression, handle pubertal needs and attending to schooling demands and that depression is the second leading cause of death for this age bracket (Liu *et al*., 2022). The choice of Kakamega County was because of the increasing violence and suicide cases reported among this population (Ambale *et al*., 2022). The study used the self-reporting Kutcher Adolescent Depression Scale II (KADS-11) for identifying depression as classified by the DSM-V.

1.9 Assumptions of the Study

The study made assumptions that: -

i. All secondary schools in Kakamega County have a functional G&C department as provided for in the education policy documents.
ii. Adolescents would provide information on this sensitive matter and participate in the therapy.
iii. The COVID-19 pandemic influenced the findings of the study since cases of mental disorders significantly increased.

1.10 Theoretical Framework

The study was anchored on two theories; the Hopelessness Theory of Depression (HTD) as postulated by Abramson *et al*., (1992), and the Dynamic Equilibrium Theory (DET) by Headey & Wearing, (1989).

1.10.1 Hopelessness Theory of Depression (HTD)

This theory was postulated by Abramson *et al*., (1989) as a response to the shortcomings of the helplessness theory. HTD provided an explanation on the inception of depression among children and adolescents. This theory explained that depressive symptoms occur when a vulnerable individual experiences negative environmental condition (Schneider *et al*., 2012). For this study, when adolescents experience a negativity in school environments, they are likely to be depressed. Furthermore, negativity in the home environment for the day scholars could also affect the adolescents while at school. HTD holds that vulnerability and adverse environmental experiences occur simultaneously as the primary causes of depression (Schneider *et al*., 2012). Abramson *et al*., (1989) hold that someone is vulnerable if they interpret the inception of negative issues as unchangeable and affecting every aspect of their life (Abramson *et al*., 1989). For the researcher, an adolescent may interpret psycho-social, biomedical, and school related problems as unchangeable and this could cause depression for them. The theorists explain that diagnosing this kind of depression calls for a close monitoring of an individual for close to two weeks.

During the two weeks, Abramson and colleagues posits that the individual should present a minimum of five of the next 11 signs- extreme sadness, delayed institution of voluntary bodily process, suicidal behaviors, disruption of sleep, leading to

insomnia, general bodily fatigue, self-blame, problems in concentration, psycho-motor deceleration, too much worrying, diminished self-esteem, as well as high dependency levels (Abramson *et al*., 1989). The theory thus guided the researcher on the signs to check out for depression. From the findings of this study, the signs that scored a high mean were low mood, irritability, feeling worthless and hopeless, feeling anxious and having troubles in concentrating in school. HTD posits that when confronted with an antagonistic life event, a child seeks understand the cause of the antagonistic event, so as to visualize its likely recurrence (Abramson *et al*., 1989).

The HTD also expects that the fundamental interaction occurring between antagonistic cognitive styles with negative life events lead to a cognizance of hopelessness. The hopelessness is then theorized to be adequate cause of depression. The HTD gives an account for not only first start of depression but also of the relapses and recurrences of depression. Going by this theory, the same way that individuals have a propensity to create negative logical thinking are prone to becoming desperate and depressed when going through an antagonistic event, people with an inclination to establish positive logical thinking on the causes and consequences related to a positive event are apt to becoming optimistic and ameliorate from depression (Abramson *et al*., 1989).

That way, a positive constructive thinking may act as a rebound component that associates positive life aspects to create an ameliorative outcome on the person's consciousness of hope as well as mood. It is for this fact that the researcher adopts the Well Being Therapy which teaches on positive thinking as a method of managing the depression. The theory admits the value of social support in the

betterment of the health of persons with depression, of which, positive relations are a component of the WBT. The limitation of this theory is that it requires a recommended sample size of at least 300 participants for conducting barometric analysis (Abramson, 1989). The researcher addressed this by using a larger sample of 448 adolescents, thus making it possible for analysis. The theory failed to account for the role other aspects of psychological well-being such as autonomy, environmental mastery and self-acceptance. The subsequent theory addresses these gaps. Hopelessness theory of depression is as shown in figure 1.1.

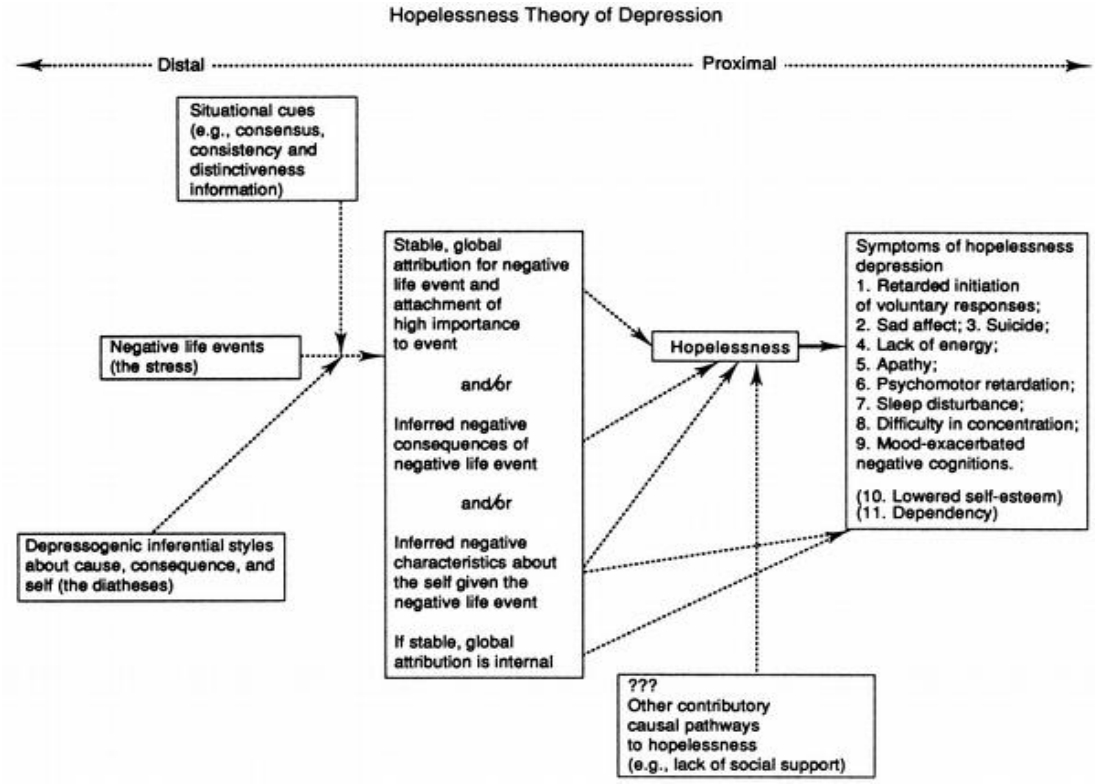

Figure 1.1: Hopelessness Theory of Depression as adopted from Abramson *et al*., (1989)

1.10.2 Dynamic Equilibrium Theory

The Dynamic Equilibrium Theory (DET) of subjective well-being (SWB) was projected by Headey & Wearing (1989). DET is centered on grounds that every

human being has an individualized equilibrium level of determining their SWB. The equilibrium level is altered by important events of life but the person is likely to return to that equilibrium in a case that the mental issue has been addressed. According to this theory, depression come forth from the ever-changing relationships between diverse affective, cognitive, and behavioral elements. This helped the researcher explain the causes of depression different from those explained in HTD. DET perceives depression as an individual's construction of the world. The theory proposes that modifications of emotional states by an individual may suffice as preventive measures for the emergence of mood disorders.

The proponents therefore propose that these alterations could serve as indicators of an urgent need for prevention strategies (Heady & Wearing, 1989). DET thus enabled the researcher to understand that sometimes, the adolescents may not only be depressed because of experiencing hopelessness but also because of changes in their affective, cognitive, and behavioral states. Key school of thought of the theory is founded on the thought that long-term stability of an individual is based on the stable attributes of sociability and neurotic level (Heady & Wearing, 1989). According to Heady & Wearing (1989), much of the time people exhibit stability in their levels of SWB (Headey, 2006). The proponents also posit that it is the key goal of every human being to search for and experience a high level of well-being. The theory not only applies to well-being alone but is also closely linked to ill-being (Headey, 2006) in that if there is no threatening life event, then an individual achieves an equilibrium which changes when the opposite happens. Ill-being happens when an individual gets depression for instance. The theory was important in explaining the effects of depression in an individual's life and how such may change the course of well-being. DET was instrumental in explaining how the WBT

which aimed at bringing an individual to optimal PWB level if the circumstances are held constant. The theory also supported the fact that social support is a key element for managing depression (Headey, 2006).

1.11 Conceptual Framework

The Conceptual Framework was informed by the Hopelessness theory which provided an explanation of the signs- extreme sadness, suicidal behaviour, disruption of sleep, leading to lack of sleep, general bodily fatigue, self-blame, problems in concentration, too much worrying, diminished self-esteem, as well as high dependency levels. The theorists of the Hopelessness theory stated that these signs were to be looked out for a period of two weeks. This was in agreement with the DSM-V signs that the study used to identify depression. From the literature review, the researcher was able to derive the extraneous variables of the study. The theory also supported that fact that positive thinking which is central in the WBT may be used a recovery component for depression. Figure 2.1 illustrates the conceptual framework of the study.

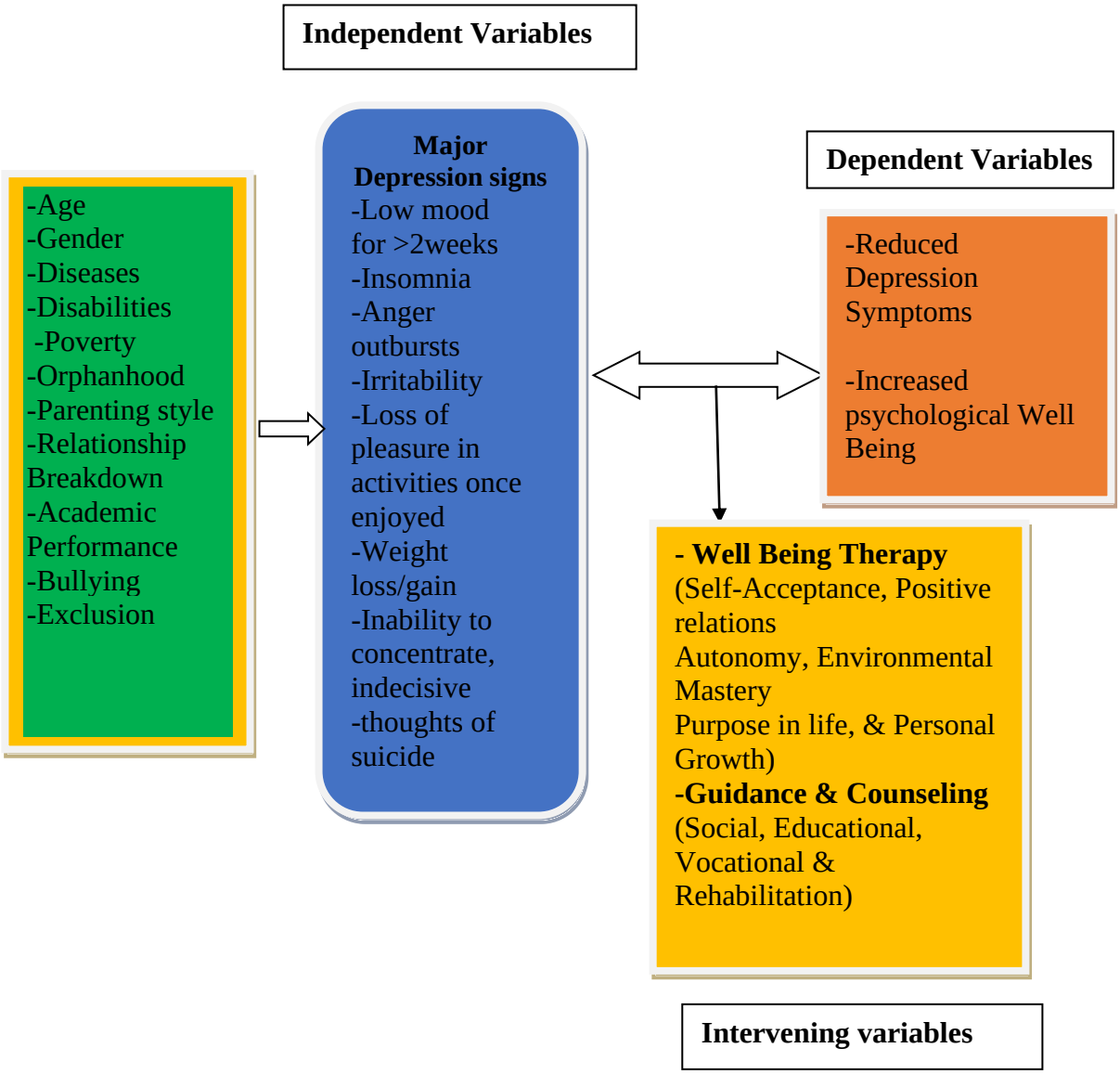

Figure 2.1: Conceptual Framework (Researcher, 2022)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter discussed the information on depression among adolescents. It focused on the concept of depression, the diagnosis, prevalence, the risk factors and the various depression management strategies of depression among adolescents, and the effectiveness of the WBT.

2.2 The Concept of Depression

Depression is an illness that negatively affects an individual's thinking, feelings and actions, makes them experience sadness, hopelessness, anger outbursts, appetite loss, loss of pleasure in activities once liked, loss of sleep (Das *et al.*, 2016). It is a key public health issue affecting people globally. In fact, it has been reported as a major precursor to disability and illness across the world. Depression is the most prevalent incapacitating psychological problem (WHO, 2021). In psychopathology, there lacks an agreement on classification and explanation on mental disorders like depression. Several present-day classifications have problems with heterogeneity and are conceptually unclear (Clack & Ward, 2019). Researchers have argued that mental disorders should not only be explained from a biological lens but also from pluralistic and integrative explanations (Clack &Ward, 2019).

There are two latest broad categorizations of mental illnesses globally: The Diagnostic and Statistical Manual of Mental disorders (DMS-V) and the International Classification of diseases (ICD-11) (WHO, 2017). DSM-V and ICD-11 are the universally recognized standard criteria for the grouping of mental and

behavioural issues in children and among the adults (APA, 2013). The DSM-V describes mood disorders as part of medical conditions. Within the constellation of the mood disorders, depressive disorders are one of them (APA, 2013). The gap is that DSM-V is more elaborate in recognition of depressive symptoms among younger populations than it is in the ICD-11 (APA, 2013).

According to this categorization depressive mood disorder is best diagnosed between age six and eighteen years. Such a disorder in children is manifested through intermittent temper bursts evident verbally in form of rages. Behaviorally, it is manifested in the form of physical aggressiveness. According to the APA (2013), the DSM-V divides depressive disorders into six categories: major depression, persistent depression, disruptive mood dysregulation, premenstrual dysphoric, substance-induced depression, depressive disorder brought on by another medical condition, other specified depression, and unspecified depression. Major depressive disorder (MDD) was the subject of this investigation. This form of depression is the most intense form of depressive disorder. Its diagnosis is by at least 5 depressive symptoms, among which 3 must be severe, with one mild, and another moderate symptom (APA, 2013).

The ICD-11 is a medical coding grouping mainly configured by the WHO (1990). It includes mental and behavioral problems but is not restricted to psychiatric disorders. The ICD-11 criteria for depression are related to those in the DSM-V, despite some significant differences. For instance, the ICD-11 does not acknowledge premenstrual dysphoric disorder as a distinct depression identification as does DSM-V (APA, 2013). As per the ICD-11, a diagnosis of depression calls for a person to experience at least five of the depression symptoms for at-least two weeks or more

just as in the DSM-V. In addition, at least one of the indicative symptoms must be either a low mood or a loss of interest. This research focused on the DSM-V because of the weaknesses in ICD-11. The ICD-11 criteria for depression may misdiagnose persons who have no depression (APA, 2013). Furthermore, the ICD-11 does not factor in all of the possible symptoms of depression. Being based on peoples' self-reports accuracy may not be achievable. Another challenge of using the ICD-11 criteria for depression is that it is dependent on the West's conception of mental illness. Its applicability to other cultures may be a challenge. MDD in ICD-11 is categorized as Major depressive disorder, single episode and Major depressive disorder, recurrent (WHO, 1990).

2.3 Diagnosis for Depression Among Younger Populations

Diagnosing depression among the younger populations is quite challenging basing on the fact that the symptoms of this disease often imitate those of adults. Often, comorbidities affect diagnosis in children as well as in adolescents. Varied medical interview-based tools as well as laboratory-based ways are in place for depression screening. Many other new formulations are in the offing, with each of them showing different degrees of improvement and strength (Smith *et al.*, 2013). Among children and adolescents, the various self-reporting tools exist. They include the Behavior Assessment System for Children (BASC), which is used for all emotional and behavioral problems. Limitation of the BASC is that it is meant for people between 2 to 21 years (Reynolds & Kamphaus, 2015).

Children's Depression Inventory (CDI) is an alteration of the Beck Depression Inventory for grownups. Research shows that the CDI measures depression severity in children and adolescents 7 to 17 years old and thus may be unsuitable for late

adolescence (Sun & Wang, 2015). The Children's Depression Rating Scale (CDRS) was earlier fashioned to measuring changes in depressive symptoms in children ages 6 to 12. CDRS' validity and reliability have further been shown in the adolescent population (Mayes *et al*., 2010). Other screening tools for children entail the Centre for Epidemiological Studies Depression Scale for Children (CES-DC), Depression Self-Rating Scale for Children (DSRS), Reynolds Adolescent Depression Scale (RADS), Mood and Feelings Questionnaire (MFQ), and Short Mood and Feelings Questionnaire (SMFQ), the Revised Child Anxiety and Depression Scale (RCADS) and among others. The weaknesses of these tools are that they may be relevant to those in early to mid-adolescence. Those in late adolescence who may not benefit much from these tools. None of the majority of the scales provided here have great discriminate validity among the adolescent populations (Brooks & Kutcher, 2001).

The Kutcher Adolescent Depression Scale (KADS) was developed by a psychiatrist (Stanley Kutcher) for a need of an efficient and reliable tests for adolescents. The KADS has got three versions; those of 16 items, for 11 items and one for six items (Kutcher, 2003). The 6-item has no validated studies in this adolescent category and misses out on some of the crucial symptoms (Zhou *et al*., 2016). Although the KADS-6 may be used by any healthcare worker, it requires more confirmatory tests (Lowe *et al*., 2018). The study chose on the KADS-11, which in studies conducted by Leblanc *et al*., *(*2002), Brooks *et al*., *(*2004) and Zhou *et al*., (2016) show that the KADS-11 has a sensitivity of 0.89 and a specificity of 0.90 (Zhou *et al*., 2016). The choice of KADS -11 is because of its high scores on specificity, sensitivity and alpha (Lowe *et al*., 2018). Unlike the other tools for determining depression among adolescents that are lengthy, KADS -11 is brief and yet captures all the symptoms for major depression focused on, in this study. Recommendations from earlier

studies call for a need to use the KADS -11 on different groups so as to support conclusions on the usage of the KADS-11 (Mousavi *et al*., 2019).

2.4 Prevalence of Depression Among Younger Populations

Despite a popular view that depressive disorders are predominantly for adults, scientific studies have over the last two decades shown tremendous increase in the prevalence of depression among the adolescents and youths in the US (Daly, 2022). Daly's study employed longitudinal survey, a deviation of this study which used an experimental design to fill the methodological and contextual gaps Such is the impetus for increased scientific studies on depression in the youth today (Das *et al.*, 2016). Most epidemiological studies affirm the reality that children and adolescents experience depressive disorders. The depressive disorders experienced have varied consequences including social, physical as well as mental health problems (Maughan *et al.*, 2013). Depression affects close to 350 million persons in the world and up to 70% of these people may commit suicide caused by depression (WHO, 2021).

In Kenya, statistics show that the prevalence of depression is varied in different populations. Approximately 1.9 million Kenyans are affected by depression. For instance, a study by Othieno (2014) among 890 University of Nairobi students using Centre for Epidemiological Studies Short Depression Scale (CESD-10) shows that the prevalence of moderate depressive symptoms was at 35.7% while that of severe depression was 5.6%. The study showed that depression was more prevalent among the first year students, who were in a marriage set-up, economically deprived and those living off campus (Othieno *et al*., 2014). This study focuses on university students leaving out those in secondary schools, a gap filled by this study.

A study by Khasakala *et al.,* (2012) done in Kenya among 1,276 students shows that the prevalence rates for adolescents are at 26.4% (Khasakala *et al*., 2012). The findings further reveal that a higher number of young persons in the age bracket of 16 to 18 years showed signs of major depressive disorder. With the increase in depression, the study asserted the urgent need to diagnose and treat depression in adolescents, a gap filled by this study. These findings are closer to those of an earlier study by Ndetei, *et al*., (2008) that reckons that 25.7% percent of the participants from 17 public secondary schools in Nairobi recorded symptoms of depression varying from mild to severe (Ndetei, *et al*., 2008). The participants were in the age-bracket of 14-18 years and the depression symptoms were determined by the Child Depression Inventory (Ndetei *et al*., 2008). Findings showed lower prevalence, which could be attributed to the precision of the diagnostic tools, and the larger sample frame. The study used the Beck's depression inventory (BDI-11). The study was done in Nairobi County but this study was done in Kakamega County thus attending to geographical gaps.

A study in Homa Bay County among a population of 783 adolescents shows that the prevalence rate of depression among the adolescents is at 57.5% (Nyayieka *et al*., 2020). This was found to be high and could be explained by the tools and methodology used. The methodology and tools used were not similar, a gap this study fills by using different methods and tools. Another study conducted around the same time by Osborn *et al*., (2020) among Kenyan youth showed that the prevalence rates were of depression was at 45.9% (Osborn *et al*., 2020). This study was conducted among a population of 2,192 youth using the Patient Health Questionnaire (PHQ-(9). This study attends to gaps in the methodology and context. The study was in a community setup while this study is within school setting.

A recent study in Makueni County among a youthful population of 460 showed that the prevalence of depression was at 58.9% as measured by the Beck's Depression Inventory (Nzangi *et al*., 2022). This study focused on two selected secondary schools with a sample frame with a wider age bracket of 14 to 21 years. Findings revealed that among the using the Beck's Depression Inventory, among the 14-21-year-old in this study, depression was significantly higher, in females at compared to males, and called for more diagnosis and treatment. The study was carried out in two selected secondary schools. Although some studies have been conducted among the young people in Kenya, the focus age has been different and tools used have also been different. None of the studies reviewed in Kenya has used the KADS-11 tool.

2.5 Risk Factors for Depression among Younger Populations

Numerous studies have debated on cause of depression and affiliated mental disorders (Avanci, *et al*., 2012; Ishtiaq *et al*., 2018; Maughan *et al*., 2013).While a number of studies are centered on the risk factors that predispose adults to depression (Ishtiaq *et al*., 2018), literature is now emerging on risk factors for youthful depressive disorders (Das *et al*., 2016; Maughan *et al*., 2013). The risk factors differ across age group (Schaakxs *et al*., 2017), individual's social environment as well as gender among many other indicators (Girgus &Yang, 2015). Furthermore, the factors are never static through the lifespan of the patient but keep evolving depending on an individual's experience (Dobson & Dozois, 2011). This section focused on the risk factors for depressive disorders among adolescents. They were classified the risk factors into three comprehensive classes; the biomedical, psycho-social and the school-related factors.

2.5.1 Biomedical Risk Factors

Studies have indicated that multiple biomedical factors put adolescents at risk of depression. It has been found that genetics has an influence of the onset of depression (Kaufman *et al*., 2018). The brain's hypothalamus, pituitary gland, and adrenal glands (HPA) axis, which describes the connection between the hypothalamus, pituitary gland, and adrenal glands, becomes overactive as a result of prolonged stress. The HPA axis is crucial to how our bodies respond to stress. When the Hypothalamus, the Pituitary gland and the Adrenaline gland axis (HPA) are overactive, it leads to much secretion of the adrenal hormone implicated in the fight, flight, or freeze effect, as well as the release of cortisol which is the stress hormone of the body that may lead all manner of health challenges such as depression (Bernaras *et al.,* 2019). Studies have revealed that dysfunctions of the HPA axis were observed in about 70% of people with depression (Bernaras *et al.*, 2019). The genetic predisposition of an individual to a hyperactive HPA as a result of early childhood stress may prompt an extreme effect and as a result alter the psychological system of an otherwise healthy individual (Bernaras *et al*., 2019).

Literature also show that genes related to the parent gene of Orthodontist (OTX2) is associated with stress-and depressive disorders in children (Bernaras *et al*., 2019). Additionally, anomalies in serotonin genetic transmission are often associated to depression. The *s/s* genotype is connected to a reduction of serotonin expression that is associated with greater vulnerability to depression (Saveanu & Nemeroff, 2012). These findings were supported by a study of the University of Queensland (2020) that linked adolescents' genetic vulnerability to higher levels of depression (University of Queensland, 2020).

Findings further reveal that females undergo major depression approximately twice as often as males (Nzangi *et al*., 2022). It has also been shown that depression is at its peak during the female's reproductive years. This is as a result of an influx of hormones related to their menstruation, pregnancy and childbirth which contribute to depression. Postpartum depression also happens after childbirth and has been linked to the quick hormonal changes that occur immediately after delivery. Pubertal hormones are also linked to adolescent depression. Additionally, girls are twice as likely as boys to experience depression (Bhattarai & Padel, 2020).

According to Ishtiaq *et al*., (2018), there exists a relationship between medical illness and depression (Ishtiaq *et al*., 2018). Research has also shown a strong affiliation between depression and consequent cardiovascular disease (Paul & Aleksandrof, 2014). In Western Kenya, a study done by Larsen *et al*., (2020) among adolescent girls and young women show relations between depression and HIV/AIDS. The findings of depression levels were determined by the Center for Epidemiological Studies Depression Scale (CESD-10) score ≥10. The results established that thirty four percent of participants had moderate to severe depression and showed an increased HIV risk mark comparable to 5 to 15 incident HIV cases per 100 person-years (Larsen *et al*., 2020).

Another study by Kanner *et al*., (2003) also that looked into the co-morbidity of juveniles with diabetes and psychiatric illnesses. The study measured the association between young person's suffering from depression and diabetes on glycemic control, quality of life, among other factors. The study concluded that juveniles with type 1 Diabetes have importantly higher levels of depression more than the broad population (Kanner *et al*., 2003). A study previously done shows that having a close

family associate with depression may increase your risk for the disorder. The study found that if an identical twin is screened for depression and turns positive, the other twin one has 70% possibility of developing depression (APA, 2013).

A history of parental depression also increases the chances of depression among adolescents. In a study on comparison of non-depressed parents, children of depressed parents were close to three to four times probable of having depression. The children of depressed parents were also found to have an increased risk medical use, other mood disorders, negative behavior, school related challenges, suicide trials, substance abuse and among others (Shah *et al*., 2020).

2.5.2 Psycho-social Risk Factors

Several studies reviewed showed that psycho-social factors put adolescents at risk of depression. Researchers have linked drug abuse to depression. For instance, studies have noted that smokers have relatively higher rates of depression compared to non-smokers (Ishtiaq *et al.,* 2018). Family dysfunctions have also been reported as risk factors for depression. A study by Ndetei *et al*., (2008) demonstrates that family disruption is a significant contributor to psychiatric illnesses in youngsters, according to research conducted among teenagers in schools. He points out that parent-to-parent or parent-to-child confrontations are very common in dysfunctional households, which raises the likelihood that teenagers would have psychiatric illnesses. The study also demonstrates that neglectful parenting, both physically and emotionally, is linked to inattention to children (Ndetei *et al*., 2008).

Studies have also revealed that parenting modes pose a risk factor for depression. Authoritarian as well as the uninvolved mothers may emotionally and physically abuse their children leading to depression (Khasakhala *et al*., 2012). Early childhood experiences are an important consideration in child development (Ndetei *et al*., 2008). This is because childhood is a stage of rapid brain development and thus negative interference with a child's environment can highly contribute to mental and developmental problems through life (Maughan *et al*., 2013).

Childhood experiences that may trigger stress or trauma and lead to depression include sexual or psychological abuse, death of a parent, domestic violence, and childhood desertion. A recent study by Huang *et al*., (2021) among 1871 college students in China supports that adverse childhood experiences lead to low PWB which is an indicator of depression. The results from the structural equation modelling show a statistically important negative relationship between adverse childhood experiences and PWB (Huang *et al*., 2021), a gap this study sought to fill by examining more risk factors.

The linkage between family violence and depression in both adults and children is also an important concern for public health. According to Avanci *et al*., (2012), the risk factors for family violence include poverty, impaired family life and alcohol and substance abuse. When children are exposed to the mentioned risk factors, they may undergo traumatic events as an outcome of the cumulative effects of such risks (Maughan *et al*., 2013). Due to limited or difficulty in accessing mental care services in the low-income families, the children are likely to suffer stress and depression that could lead to adulthood mental problems. In fact, studies reveal that consequences of family violence on kids growth and development is detrimental to the general development of the child (Avanci *et al*., 2012).

Losing a parent has always left individuals feeling low, sad and even withdrawn. The reaction of an individual towards a loss is varied as some may get over the loss faster than others. Some people remain in the state of grief for long that they may need help so as to get better. The commonest response in children to orphan-hood is depression that is characterized by, hopelessness, anxiety, as well as the fear of being alone (Mekdes *et al*., 2018). A study done among orphans in a home in Ethiopia revealed that orphans have higher scores of depressive symptoms than non-orphans (Mekdes *et al.,* 2018). These are more gaps this study sought to fill.

The findings of study by Gemechu *et al.,* (2018) corroborate these findings. In their findings, the generality of depression among orphans is high as compared to non-orphans. They found out that orphaned children are more depressed, much anxious, and hopeless about the upcoming life. Such depressed orphans were likely to exhibit anger feelings and have much turbulent characters compared to children with parents (Gemechu *et al*., 2018).

As Kenya develops and becomes an information society, it faces emerging threats on the cyber platforms and cyber-bullying becomes one such threat. Cyber-bullying is described as an aggression exhibited intentionally and periodically by the utilizing electronic ways like e-mails, Snap chat, text messages, and on social media avenues such as Tik Tok, Facebook, Instagram, Twitter, and LinkedIn and the recent Likee, among others. Cyberbullying takes various forms such as the verbal, visual, impersonation and exclusion (Business Daily, 2019; The Star, 2017; Daily Nation, 2017; Standard, 2018). There is also an increasing usage of mobile phones in learning. Since the emergence of COVID pandemic early in the year, schools have

made efforts to continue providing education through mobile phones (Ngugi, 2020). This study filled the gaps on the increased access to internet and depression levels. Research done by Ndiege *et al*., (2020) in Kenya among University students shows that cyber-bullying may also account for the increasing depression cases among students (Ndiege *et al*., 2020). A recent study done in a community setting of Brazil municipality showed that increased usage of mobile telephones increased the risk of depression. Adolescents who play on their cell phone alone were 5.1 times more likely to develop depressive symptoms, and those who use drugs in groups, 5.5 times (Bernardineli *et al*., 2021).

2.5.3 School Related Risk Factors

Every academic institution has designed programs that students engage. The institutions strive to achieve better academic performance. For schools in Kenya, there are examinations and continuous assessment tests which are used as measures for academic performance. Depression as a disease affects the academic grades one attains. This is so because depression reduces one's concentration levels, may lead to absenteeism and time taken for managing depression also eats into study time (Klein *et al*., 2013). Accordingly, adolescents who face indications of depression encounter challenges with school activities and have poor relationships with classmates, siblings, parents and peers.

A study done in Kenya has shown an important negative correlational statistic when academic accomplishment was utilized as the predictor of anxiety (Oluoch *et al*., 2018). These findings relate to those of a study conducted in India which demonstrated negative relationship between anxiety and academic performance (Pachaiyappan & Siranjeevi, 2018). Although this study was done on anxiety, this

study sought to find out the relationship between depression and academic performance. Media reports in Kenya have shown a positive relation between depression and academic performance. A number of suicide cases have also been reported after release of national examinations in Kenya (Ngugi, 2020). One such report was of a form one student who committed suicide for having her geography marks displayed and mockery made out of it (Ngugi, 2020).

Bullying in secondary school takes various forms. It could be in form of hitting, kicking, mean and abusive language, exclusion, rumors and among others (Olweus, 2003). A study conducted by Naveed *et al*., (2019) on the association of bullying and depressive symptoms reveals a positive relationship. In the study of 452 participants, a multiple regression analysis showed that depression scores were higher among the perpetrators and victims of bullying. Bullying victimization was a stronger predictor of depressive symptomology (Naveed *et al*., 2019). A similar study on bullying among students in transition by Da Silva *et al*., (2020) shows that bully-victims were nine times more likely to be depressive compared with students not involved with bullying ($\beta = 2.246$, $OR = 9.44$, $p = 0.002$), while victims were six times more likely ($\beta = 1.843$, $OR = 6.31$, $p = 0.010$). This study seeks to confirm the situation in the local context, being that the previous studies were done in the US.

2.6 Strategies for Managing Depression among Adolescents

Different ways are used in the management of depression. Some of the documented ways of managing depression include the Electro-convulsive Therapy, Trans-cranial Magnetic Stimulation, Antidepressants, and psychotherapies such as the guidance and counselling, Psycho-dynamic therapy (PDT), Supportive counselling, Cognitive

Behavioural Therapy (CBT), interpersonal therapy (IPT) and Well Being Therapy (WBT) and among others.

2.6.1 Electro Convulsive Therapy (ECT)

ECT pertains to the concise use on anesthesia and an electrical arousal of the brain (Rootes-Murdy *et al*., 2019). ECT is performed within a hospital where a sizable machine is utilized to direct an electrical current into the brain, thus stimulating a brief seizure which modifies the brain chemistry, and aids in the treatment of depression (Magnezi *et al*., 2016). It is only used when all other treatment options for mental disorders have failed and yet still the patient is in need of a rapid response (Abrams, 2002). Of late, wide-ranging studies have proposed that ECT is greatly effective in improving depression symptoms with less unwanted effects (Li *et al*., 2020). Similar outcomes were also stated in animal studies using electro-convulsive seizures (Alemu *et al*., 2019). This treatment option requires multidisciplinary expertise in its implementation (Li *et al*., 2020).

Patients with mild forms of mental disorders may not benefit from this therapy. Furthermore, anomalies have been reported involving the misuse of equipment, poorly trained staff, incorrect dosages, continual memory loss, as well as immanent post-treatment confusion (Lima *et al.*, 2013). An investigation conducted in Kenya shows that there are methodological inconsistencies in practice among the ECT users. The in-congruence is in terms of pre-ECT preparation variances, stimulus dosage computation, and sufficiency of seizure and among others (Ali *et al.*, 2019). The other barriers highlighted include: inadequate infrastructure, little or no funding, inadequate training as well as pessimistic conceptualization by patients and their consanguinity on the ECT processes (Ali *et al*., 2019). ECT also raises a number of

ethical issues such that majority of persons subjected to it do so involuntarily (Weiner, 2015). There is limited data on the usage of ECT among adolescents and particularly those still in schools.

2.6.2 Trans-cranial Magnetic Stimulation (TMS)

Trans-cranial Magnetic Stimulation is a management option for depression that relays magnetic impulses to the brain nerve tract and connected areas in order to gradually modulate them (Magnezi *et al*., 2016). The process utilizes the brain's ability to mend and create connections in between the nerve cells. This treatment option is aimed at the specific regions affected. Unlike the ECT, TMS has been in use since the1980s to manage mental disorders (Mcnamara *et al*., 2001). Studies have shown that it's non-invasive, maybe performed even in offices and safer than ECT (Magnezi *et al*., 2016). The demerits of this mode of depression treatment are the scarcity of data on successful adolescent cases treated.

Recent studies have shown that TMS is a temporary solution to the depression problem. The study further reveals that although repeated TMS is an effective treatment, its neurobiological activities are not well understood (Rizvi &Khan, 2019). TMS has been faulted for being time intensive and has side effects such as mild headaches as well as twitch in the brain (Dunner *et al*., 2014). There are gaps on current studies of TMS usage among adolescents. Furthermore, TMS requires experts to conduct it. This is the gap this study sought to fill by search of a workable, intervention for the adolescents.

2.6.3 Antidepressants

These are medications that are taken to manage depression. There are three types of antidepressants. They include the Tricyclic antidepressants (TCAs), the Selective serotonin re-uptake inhibitors (SSRIs) and the Selective serotonin nor-adrenaline re-uptake inhibitors (SNRIs) (WHO, 2018). The TCAs are the longest serving as the first line treatment of depression. The SSRIs and SNRIs are second-line treatment of depression (Hazell, 2022). These drugs are commonly taken daily. The aim in the first days and months is to get rid of the symptoms with the possibility of make the person heal from depression. The treatment continues for at least four to nine months so as to prevent recurrences and relapses. The duration of treatment is dependent on symptom management. Some persons may be on antidepressants for several years (WHO, 2018).

Antidepressants among the adolescents are used as the second line of treatment. This comes after unsuccessful use of psychotherapies. In this population, studies show that the adolescents may need close supervision when in use. (Hazell, 2022). Furthermore, the study reveals that for adolescents, antidepressants only effective for mental disorders like anxiety as well as obsessive compulsive disorder and not depression (Hazell, 2022). Few studies have also been done on antidepressant use among pediatric patients (Dwyer & Bloch, 2019). All medications have side effects. Cases of diarrhea, headaches, sleep problems and nausea have been reported in SSRIs while TCAs are likely to cause problems with sight, constipation, light-headedness, dry mouth, vibrations and difficulty in passing urine. A considerable number of the antidepressant users manifest lasting symptoms that prompt the re-emergence or relapse of the disorders (Hetrick *et al*., 2012). There are gaps on current studies of antidepressants usage among adolescents in secondary schools in

Kakamega County. This study sought to find out whether antidepressants are used to manage depression among adolescents in secondary schools.

2.6.4 The Psycho-Dynamic Therapy (PDT)

Psychotherapy collectively describes treatment options that affect the mind. The term psycho-dynamic has often been used interchangeably with the term psycho-analytic. This form of therapy is the result of modern psychological thoughts. The therapy is linked to the works of Sigmund Freud (1856–1939) on psychoanalysis (Huprich, 2010). The therapy is both a psychological theory and treatment approach for depression (Lindqvist *et al*., 2020). According to the proponents of this theory, individuals who are depressed appear to be responding to some sort of a loss although the lost item maybe unknown to the person.

Freud makes a conclusion that depression is as an outcome of disappointments that create the anger. The anger leads to criticizing of the self which then results into depression. This therapy works by asking the depressed person to speak as often about themselves so that the patterned thoughts may be reconfigured. The therapist figures out loses and encourages the grieving process to take place (Huprich, 2010). PDT focuses on establishing the underlying causes of challenges that are psychological in nature.

The therapy also aims at discernment of the effects of one's past on their present behaviors. PDT entails less frequent structured meetings for longer periods of up to two years. This makes it a powerful approach of establishing the root causes of personality related disorders. This therapy is however unpopular because it is unstructured, making it difficult for one to establish its effectiveness. PDT may be termed expensive as it takes a longer time to realize wellness (Bastos *et al*., 2015).

Studies done show that although psychodynamic therapy has been used for depression management among adolescents, gaps have been reported. Lindqvist *et al*., (2020) found that there lack more studies on this therapy use among adolescents, and that therapy needs longer periods of implementation for its effectiveness to be realized (Lindqvist *et al*., 2020).

2.6.5 Supportive Counselling

The therapy is anchored on the humanistic approach to psychology by Carl Rogers in 1941. It purposed to assist individuals to feel profoundly interpreted and backed up. The counsellor only comes in to aid the patient to establish methods they can apply to resolve challenges they could probably be having. It is a client motivated approach that aims motivating the client during while the treatment process is ongoing (Jacobs & Reupert, 2014). The therapy is founded on the notion that the patient's sentient mind is a better point of focus during the therapy.

Rogers (1914) posits that the individual has their own unique experience in life and that it's improper to apply common techniques in the healing process. He emphasized on the uniqueness and importance of every single client. For the therapy to be successful, it calls for a strong bond between the patient and the counsellor. It is also successful when the patient is able to set their own goals which are achievable to them. Strained relations between the two make the process unsuccessful as it makes the counsellor to set unachievable goals. This method has been shunned for being unaffordable (Jacobs & Reupert, 2014). There are gaps on limited studies of supportive counseling among adolescents in Kakamega County. This study sought to address this knowledge gap.

2.6.6 Cognitive Behaviour Therapy (CBT)

CBT is a therapeutic method aimed at reducing mental distress and mental health problems. It does so by looking into the users' thoughts, feelings and behaviors (Teater, 2010). This mode of treatment is anchored on behavioral and cognitive therapies. Initially, the method was applied in the treatment of depressive symptoms but now it has been utilized in care of other disorders. CBT has a manual that is time-limited and targets to dig into and interpolate the dynamic cognition and behaviours. Once the condition is improved it will foreclose forthcoming depressive episodes (Weersing & Brent, 2006).

The cognitive part of the therapy purposes to change the reasoning patterns connected to depressive symptoms. The behavioral factor stresses on involving the adolescents by encouraging greater involvement in pleasurable activities, as well as the development of life skill and strategies. The skills aid in the creation and acquaintance of supportive relationships and regulation of emotions (Weersing & Brent, 2006). Based on behavioral therapies, the therapy is derived from the works of Pavlov *et al*., (1950). The latter team sought to alter learnt behaviours which may be difficult and unwanted. They aimed to supersede them with more accepted confirmatory behaviour. However, the cognitive aspect of this mode of treatment may be traced back to the works of Beck and Ellis (1960s) (Teater, 2010).

CBT takes behaviours and cognition as are key factors for psychological distress and dysfunction hence the need to focus on the consolidate thoughts, feelings, as well as behaviours. It holds that cognition affects emotions together with behaviours. The proponents further state that inaccurate cognition may result into psychological distress and dysfunction. These two may be reduced or elevated through change in

the faulty cognition and behaviours (Teater, 2010). The CBT approach has however been criticized for a number of weaknesses.

The weaknesses include the need for to engage the patients in the process of administering the therapy which may be a challenge especially in cases where the patient denies their status. The other shortcoming of the CBT approach is on its focus of the present status hence not managing the inherent troubles that may be cause the existing problem (Teater, 2010). CBT has also been criticized for dis-empowering its service users. Such weaknesses call for a combination of therapeutic approaches and the interpersonal as well as the well-being therapies bridges such weaknesses. As for managing depression, this therapy works well for mild depression, and when combined with other therapies such as drugs (David -Ferdon, 2008).

The therapy integrates challenges, the negative and perverted thoughts that aid the patients to get rid of the negative perceptions of themselves of the past, as well as of the future. Generally, CBT is a short-term technique that has little application in solving long-term depression (March *et al*., 2004). Its effectiveness seems short-lived and it reduces after a six-month time period, and once an individual stops using it (Watanabe *et al*., 2007). CBT and drugs demonstrate effectiveness in care of persons with resistant depression (Ruini *et al*., 2006).

2.6.7 Interpersonal Therapy (IPT)

The IPT is a tested intervention for adolescent depression. It focuses on the individual and how they interact socially. This therapy was modified by Mufson *et al*., (2004) for management non-bipolar, non-psychotic depression among the young people. This therapy targets to change adolescents' interpersonal activities in order

to improve their mood. It holds the ideas that interpersonal conflicts and transitions maintain depression. This is because, data shows that at adolescence, interpersonal difficulties are experienced and thus a focus on them seems to be an effective strategy (Mufson, 2010).

Another mode for adolescents (IPT-A) was developed to manage spheres of interpersonal difficulties that are linked to depression (Mufson, 2010). The areas of interpersonal challenges include a brokenhearted status, interpersonal character problems, interpersonal role transitions, as well as interpersonal inefficiencies. The IPT-A assists the adolescents to determine special areas of interpersonal difficulty and creates efficient plan of action to contend with them. The time-limited psychotherapy lasts for 12 to 15 individual sessions of 30 to 60 minutes each (Mufson, 2010).

Empirical inquiries show consistently that adolescents with depression exposed to IPT-A show significant improvements in their symptoms and better social and overall functioning (Mufson, 2010; Mufson *et al.*, 2004). Although the IPT is an important depression treatment, it has been applied in few settings for a lack of adequate expert therapists who are expected to monitor their patients closely (Ivanhoe *et al*., 2013). In some cases, it is used together with other therapies such as the medication. The disadvantage of this therapy is its short-termism, thus high possibility of relapses (Mufson, 2010). The other challenges with IPT are that it has been applied in few settings for a lack of adequate expert therapists who are expected to monitor their patients closely (Ivanhoe *et al*., 2013). A study conducted among adults with major depressive disorders by Van Gees *et al*., (2013) opines that

when IPT is combined with medication, there is reduction of depressive symptoms more importantly than when the medication is used alone (Van Gees *et al*., 2013).

2.6.8 Life Skills Education (LSE)

The concept of LSE refers to the abilities that enhance a person's development of adaptive and positive behaviours which helps them to effectively handle situations and demands of daily living. LSE aims to enhance development of a holistic individual through an interactive methodology that looks into their cognition, feelings, opinions and values (Orodho *et al*., 2013). The LSE manual postulates that the implementer of the LSE curriculum needs to adopt methodologies that allow the students to determine their own difficulties and talk about solutions to the problems as well as take the necessary action (GOK, 2006). LSE includes 12 life skills that can be divided into three categories: knowing oneself and living with oneself; knowing others and living with others; and understanding oneself and making effective decisions (Wachira et al., 2010). The goal of teaching LSE is to give students psycho-social skills that will enable them to make wise decisions, solve problems, think critically and creatively, communicate effectively, forge healthy relationships, empathize with others, and live healthy, fulfilling lives (KIE, 2008; Wachira *et al*., 2010).

Despite the robustness and detailed nature of LSE, the intervention faces similar problems as G&C. From a study conducted by Orodho *et al*., (2013) among students in public secondary schools in Kenya, the findings indicate a scarcity adequate and suitable of LSE instructional materials (Orodho, 2013). Another study by Abo and Hooroo (2014) shows similar challenges as it established that resources were inadequate in a number of secondary schools (Abo & Hooroo, 2014). LSE also faces

a problem of inadequate knowledge. A study carried out by Githinji (2007) among primary school teachers and pupils on how satisfactory LSE is in management of in HIV/AIDS in Nairobi and Thika Districts revealed inadequate teaching, in-sufficient knowledge and inadequate LSE teachers (Githinji, 2007). These studies reveal the gaps on LSE and further investigations into workable interventions for adolescents.

2.6.9 Guidance and Counselling (G&C)

The program of G&C was introduced in Kenya in 1971 and was mainly to address the social and mental problems faced by learners (Wambu & Wickman, 2011). This option was adopted after the education stakeholders realized that academic work in isolation can't bring forth an all-rounded person that is beneficial to the community (Wango, 2020). The focus of G&C in Kenya is to respond to the proximate needs of students with given challenges such as loss of parent, poor academic performance, those on drugs and substances, indiscipline and troubled relationships (Wango, 2020). As a result, most learners relate counselling to discipline, and therefore formulated a negative mental attitude towards seeking G&C services (Wambu & Wickman, 2011). Due to limited time and a packed school schedule, G&C services are given at break-time, lunch time and mostly after school hours. Students in need of G&C are identified by teachers, fellow students and on rare occasions, they may refer themselves.

Despite the effectiveness of G&C in addressing social and mental challenges, the program has also faced multiple challenges such as lack of trained, teachers overload with class work, scarce resources and lack of cooperation from parents (Toto, 2014). The teachers in charge of G&C still have other responsibilities assigned to them. The multiple responsibilities give them precisely limited time to render effective

counselling services to the learners in need. Moreover, the same teachers will be in charge of evaluating academics and it thus becomes difficult to establish that rapport needed for G&C to take place (Kamara & Mumiakha, 2011).

Ethical issues may arise where the school head teachers and even the class-teachers want to know what transpired during the session (Nyutu & Gysbers, 2007). A number of schools in Kenya lack facilities and materials for G&C. The schools lack rooms for the sessions and keeping records is also a challenge. Another study also cited a lack of in-service training for teachers who offer G&C (Waititu, 2010) as well as a lack of clear job description for teachers offering G&C. The program of G&C was introduced in Kenya in 1971 and was mainly to address the social and mental problems faced by learners (Kebongo & Mwangi, 2020).

This option was adopted after the education stakeholders realized that academic work in isolation can't bring forth an all-rounded person that is beneficial to the community (Wango, 2020). G&C focuses on helping learners to solve an immediate crisis and thus it is temporary and problem focused. G&C is also offered at separate times such as at break time, games time and often times is a less scheduled activity. Besides, the program focuses more on girls as they are presumed to suffer from pubertal symptoms more than boys (Wango, 2020). This study proposes a self-driven therapy that may address majority of the G&C gaps.

2.7 Effectiveness of the Well-being Therapy (WBT)

WBT is a comparatively recent method of managing mental illnesses. It is a management strategy that employs well-being-enhancing psycho-therapeutic strategies. WBT, developed by Fava (1999), was derived from Ryff's model of psychological well-being (Ryff, 1989; Javed, *et al*., 2016). WBT is a positive

psychology approach that emphasizes positive aspects of the human conditions that enhance happiness, fulfillment and positive well-being (Javed *et al*., 2016). The therapy aims at developing plan of actions for improvement of the positive affect in all non-clinical and clinical settings. This is unlike the traditional psychotherapies that emphasize on deficiencies in human behaviours and, aim at repairing related damages.

WBT also aims to enhance wellness as opposed to reducing the symptoms (Ruini, 2014). Ruini (2014) likewise acknowledges that WBT borrows principles and techniques from other well-known forms of therapy such as CBT, IPT, PDT and non-directive psychotherapy. The approach is flexible and planned according to the demand and uniqueness of the patient. The flexibility makes among the reason for its choice as a strategy for the adolescent. The concept of well-being is increasingly becoming popular in both clinical and non-clinical psychology (Moeenizadeh & Salagame, 2010).

WBT emerged from three related developments. The first is an increasing literature on residuary symptoms after eminent management of mood disorders. The residual symptoms may progress to commencement of relapse (Fava *et al.*, 2014). WBT thus emerged to address the residual symptomology (Fava *et al*., 2014). Secondly, some patients also showed much reduced levels of psychological well-being in comparison with a control group (Rafanelli, *et al.*, 2000). Finally, practitioners working with clients with mood disorders were often faced with disappointing levels of remission that incumbent curative schemes yielded (Fava *et al.*, 2014).

Such concerns of lower remission and recurrence may be addressed by WBT. The WBT has key components observed during psycho-therapeutic tests; such include

patient's mastery of their immediate environmental, their personal growth, purpose in life, autonomy, self-acceptance and positive relations with others. It is founded on an educational model which is well thought-out, self-directive, and problem-oriented to the current situations. This technique uses self-observation in a structured diary with relations among patient and psychotherapist. Unlike the CBT models, the WBT desists from stating at the start, to the patient its inherent principles and plan of action but instead relies on their sequential assessment of the positive self (Eren & Kilic, 2017).

This therapy is implemented in three phases. The initial session which concerned with measuring the patient's PWB on a scale of 0-100. Here, the therapist uses the PWB by Ryff (1989). A score of 0 indicates ill-being while 100 shows optimal well-being. The second stage deals with realization of the thoughts and notions that are distort their well-being and reconfiguration of the same. At this stage, the practitioner issues to the patient assignments which trigger positivism. The therapists in final stage go for the aspects of the psychological well-being that the patient had challenges with and addresses them. The six elements of therapy include self-acceptance, healthy relationships with others, environmental mastery, autonomy, personal growth, and a sense of purpose in life (Ryff, 2014).

The concept of self-acceptance refers to embracing who you are, without any regard for the qualifications, conditions and exceptions (Maclnnes, 2006). An individual could be termed to be of high self-acceptance if they have a positive cognition on themselves and admit the several aspects of self-entailing the good and bad characteristics. The individual also has to be positive as concerns their past life. A person with low self-acceptance on the other hand feels dissatisfied and disappointed

with happenings in the bygone life, is uncomfortable with some if their personal traits and feels the need to be different from what they are (Ryff, 2014). Studies have shown that human beings have the potential of developing and nurturing self-acceptance through therapy and education. In fact, self-acceptance with success, been taught in life skills as well as in psycho-educational programs to the youth as a component of the school-based prevention and promotion mental health curriculum (William & Lynn 2010; Vernon, 2006).

Discussions further argue that self-acceptance is a healthier psychological dimension than self-esteem which calls on individuals to strongly place value on themselves (Ryff, 1989). For this study, self-acceptance implied that the adolescents should be facilitated towards having positive attitudes towards themselves by accepting their past and present conditions and characteristics whether both positive and negative ones (Fava, 1999). In a study done by Vernon (2006) on self-acceptance and mental health, the results show that participants who had lower self-acceptance exhibited more depressive symptoms than those who showed higher unconditional self-acceptance (Vernon, 2006).

The component on Positive Relations with Others looks at how individuals relate with family (blood or spousal relationship) or friend. Adolescent are at a stage where they are shifting closer relationships from parents to peers. This component of PWB is measured on a scale of strong and weak. It is a key component especially to adolescents (Fava, 2014). Persons with strong positive relations with others exhibit satisfying and trusting relationships with others, show concern for their social welfare, is able to show strong empathy, fondness, and closeness and realizes the significance of the give and take of kinship. A weak scorer of positive relations with

others has a problem in relating with and opening up to others, is detached and disappointed in interpersonal relationships and is unwilling to compromise in order to sustain kinship (Ryff, 1989).

This segment of the WBT calls for the adolescents to be able to relate positively with others at school home and in social places. This social support is key in the prevention and abatement of mental illness (Fava, 1999). Adolescents with weak or no friendships may lack support when in distress such as problems in school. What is more, when the adolescents are rejected by their peers, they may end up depressed. Relationships with others may thus aid an individual to deal with depression or it may influence one's acquisition of depressive symptoms. Studies have revealed that individuals with difficulties in relationships are at an increased risk of depression. The disease may make a person feel like a burden to others and therefore make life a problem to themselves and those around them (Teo *et al*., 2013).

The ability to adapt to the environment or to adapt the environment to oneself in order to organize one's surroundings and meet one's psychological and physiological needs is referred to as the environmental mastery (EM) factor (Stafford *et al.,* 2016). EM is measured of a scale of high and low. One is said to have a sense of EM when they can manage the environment and the complexity of external activities, when they can make effectual use of the opportunities in their environment and have the ability to pick out or make up contexts appropriate to their individualized needs and beliefs (Ryff, 1989). Persons with low EM are unable to alter or better their surroundings, lack knowledge of the opportunities in the environment and have no power over the environment (Ryff, 2014). The concept of EM thus implies that the

adolescents should be facilitated towards proper adaptation to the environment so that they are able to meet their individual needs and lead an active life (Fava, 1999). Autonomy on the other hand is a characteristic which differentiates an individual from a person. It is as well the ability stay feeling that one is not duty-bound to think and act in line with the social traditions. Another definition of autonomy is the capacity to make decisions using one's own internal mechanisms without relying on or requesting the agreement of others, to control one's own behavior, and to exist independently of the social system (Fava, 1999). Autonomy is determined on a scale of high or low. Individuals with high autonomy are those who are independent, stand firm against social pressures, adjust behaviour from inside of them and appraise themselves by personal standards (Ryff & Keyes, 1995). Those of low autonomy do the opposite.

Personal growth as a procedure happens over the course of an individual's life (Ryff and Keyes, 1995). As a person grows and develops, one learns to reorient to changes in themselves. It therefore refers to the ability to use one's talents completely as well as the capacity to self-evaluate their personal growth. It is known that adolescents obtain social acceptance both in an individual and societal sense when their personal growth is established. This in turn affects their well-being levels (Ryff & Keyes, 1995). Personal growth is determined as either strong or weak. It is measured in terms of expansions of horizons, self-improvement, and a change in a manner that predicts in increase in knowledge of self. Strong personal growth can also be determined in terms on one's openness brand-new experiences. Weak personal growth is detected by a lack of interest in life, personal stagnation and an inability to create new attitudes towards life (Fava, 1999).

The concept of having a purpose in life refers to the belief that one's past and present have significance and purposes, believing that one's past and present positions are significant, and taking active steps to fulfill those purposes (Fava, 1999). A person with a strong purpose in life has set goals and objectives they are aiming to achieve. The persons have a sense of direction in life and life seems to be moving in a given direction. When one lacks meaning, has no objectives and lacks a sense of direction then they have a weak or no purpose in life (Ryff & Keyes, 1995). A study carried out by Kleftaras and Psarra in 2012, among 401 fresh military recruits of the Greek navy, established that having a purpose in life is negatively related to depression (Kleftaras & Psarra, 2012).

WBT has been tested and found effective in managing depression. In a 2006 pilot study initiated by Ruini *et al*., (2006) on the WBT in school environment with a sample size of 111 middle-school learners, the students were randomly appointed to either an instruction using techniques traced from CBT and the others to instructions taken from the WBT. The findings of the two interventions led to a comparable transformation in the symptoms of depression and promotion of PWB. The study concluded that WBT is as good as CBT. This pilot investigation suggested that well-being-enhancing strategies could match CBT in the hindrance of psychological suffering (Ruini *et al*., 2006).

Ruini *et al*., (2009) later on compared WBT to an attention placebo intervention. The sample size of this study was 227 high school students with an average age of 14.4 years. The two interventions entailed six meetings of two hours. The findings showed that the WBT had a noteworthy effect in enhancing PWB and decreasing distress in contrast to the attention-placebo group (Ruini *et al*., 2009). The therapy

used well-being indicators to assess and help patients to realize their true potential. In fact, literature has proven it effective for both management and treatment of patients who suffer persistent depression.

Results of another RCT by Fava *et al*., (2014) using the WBT shows that patients with recurrent major depression disorder report a considerable reduction in the intensity and severity of depression (Fava *et al*., 2014). These findings relate to earlier findings of the same of Fava *et al*., (1998) who tested the effectiveness of WBT in the residual phase of affective disorders. In small controlled research by utilization of the Clinical Interview for Depression, WBT led to super cognitive behavioral schemes as well as significant increase in PWB well-being (Fava et al., 1998).

The therapy has further been tested by Moeenizadeh & Kumar (2017) who assessed the correlation between WBT and depression among 410 infertile women. They concluded that the use of WBT reduces the symptoms of depression and increases psychological well-being (Moeenizadeh & Kumar, 2017). Some other RCT on WBT was conducted by Moeenizadeh & Salagame (2010) among 40 high school learners University scholars who had depression. The learners were on a random basis placed on WBT or CBT. The results showed that those on WBT had significant reduction of the depressive symptoms (Moeenizadeh & Salagame, 2010).

Further studies have shown that WBT has been applied in various settings. For instance, an RCT done by Nikrahan *et al*., (2019) among patients who had coronary artery disease indicates that WBT is an executable and satisfactory intervention as it is related to greater amelioration of PWB (Nikrahan *et al*., 2019). Nierenberg *et al*., (2016) applies WBT to disability and chronic illnesses. Their study found that WBT

was effective because it acted as a safeguard against the advancement of some negative emotional states. WBT was shown to be relevant to both persons living with disability and to the foundational principles of rehabilitation psychology (Nierenberg *et al*., 2016). The therapy continues to be applied in different context to test its effectiveness (Xu *et al*., 2016; Javed *et al*., 2016; Eren & Kilic, 2017, Telaumbanua, 2020; Femson, 2020). More effectiveness studies are still needed however (Fava, 2016).

2.8 Gaps in literature

Findings of studies reviewed show that depression affects several adolescents and categorically identifies students in learning institutions to be the most at-risk populations (Ndetei *et al*., 2008; Othieno *et al*., 2014b). Despite the situation, little has done to identify and manage depression within the secondary institutions in Kenya, a gap that the study intends to bridge. Much emphasis was placed of LSE and G&C which are faced with myriad of challenges (Wango, 2020). A bigger percentage people with depression in Kenya were under-detected and thus under-treated (Osborn *et al*., 2020). There were several treatment options for depression in Kenya. A number of therapies are recommended to manage depression (WHO, 2017). LMICs as well-developed countries had high prevalence of depression but little was being done to redress it in the LMICs. WBT which is self-managed, and diary based, with higher effectiveness is yet to be used to manage the increasing mental cases in secondary schools in Kenya and even in schools. On the depression risk factors, most studies lacked age aggregation while few studies that have focused on youth and adolescents show that the risk factors for depression among school going adolescents and youths are varied and intertwined (Smith *et al.,* 2013).

Therefore, considering the complex nature of depression it is inevitable that a variety of risk factors and causal pathways are involved.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Area

The study was conducted in secondary schools of Kakamega County. Kakamega County is located in the Western part of Kenya (see appendix XI). The County covers an area of 3,051.3 km². The county is the fourth populous with the largest rural population (CIDP, 2018/2020). The County has more than half of its population in the below nineteen years' age bracket, and most of them are in schools (KPHC, 2019). According to the statistics of the Kenya Population and Housing Census (2019), the county's population stands at 1,867,579 people, consisting of 897,133 males and 970,406 females. In terms of administration, the county is divided into three regions; the southern, central and northern region (CIDP, 2018/2020).

According to data from the Ministry of Education (MoE, 2020), there are four hundred and forty-two secondary schools in Kakamega County, Kenya. The 442 schools were the data collection sites. The target population of the adolescents in secondary schools at the time of the study was 180,851 (MoE, 2020). The number of suicide cases in Kakamega County are said to be increasing with little effort being undertaken to resolve (MoH Kakamega, 2019). The presence of a single help desk at the Kakamega County General Hospital is an insufficient resource to handle the rising complexity of mental illnesses. One in four people in the county suffer from depression and related mental illnesses (MoH Kakamega, 2019). Raising the alarm is the fact that young people in the County who are committing suicide. In one sub county (Butere) of Kakamega County, statistics showed that in between 2015 to

2021, seventy-four schoolchildren attempted suicide and 4 students committed suicide (Ambale *et al*., 2022).

3.2 Research Design

Research design is a blueprint for collecting and analyzing data (Kothari, 2008). This study adopted an experimental (pre/post testing) design (Campbell & Stanley, 2015). Pretest/post-test designs are excellent for studies making comparison between groups as well as evaluating changes resulting from experimental treatments (Babbie, 2010). The design gave possibility for measurement of the effects of the WBT and G&C interventions. This design was chosen for this study as it enabled the researcher to determine the effectiveness of the WBT on depression management among adolescents in secondary schools in Kakamega County, Kenya. A mixed method research design (convergent parallel) was used in this research to collect both qualitative and quantitative data. This enhanced the credibility, generalization and contextualization of the research findings (Kothari, 2008).

3.3 Study Population

The study population for the study was all the 180, 851 adolescents, from the 442 secondary schools in Kakamega County, according to the data from the Ministry of Education in Kakamega County. Also included in this study were all the 442 G&C teachers, all 12 Sub County Medical officers (SMO) and all 12 Sub County Education Directors (SED) in Kakamega County. This information is shown in table 3.1.

Table 3.1 Study population

Sub County	No. of Schools	Adolescent target population	G&C Teachers	Region
Mumias East	28	10,389	28	Southern
Shinyalu	53	17,818	53	Central
Lurambi	27	12,012	27	Central
Likuyani	37	14,439	37	Northern
Matungu	40	13,987	40	Southern
Navakholo	34	12,483	34	Central
Lugari	54	33,742	54	Northern
Malava	50	18,800	50	Northern
Butere	33	12,700	33	Southern
Mumias West	33	12,640	33	Southern
Ikolomani	30	12933	30	Central
Khwisero	26	9326	26	Southern
Total	**445**	**180, 851**	**445**	

Source: Ministry of Education of Kakamega County, (2020)

3.3.1 Inclusion Criteria

For one to be included in this study, they were to be students in a secondary school both private or public in Kakamega County in form 1 to 3. Readiness to offer self-report data at pretest and post-test. The head teachers provided written consent for the adolescents below 18 years at pretest and post-test. Written assent was also an inclusion criterion for the adolescents below 18. Findings of Ndetei *et al*., (2008) showed that while at school, teachers are the guardians and acquire responsibility for the students while at school. Those above 18 consented for themselves in written. Adolescents with no disease or disability and those studying in that particular school for more than 6 months were included.

3.3.2 Exclusion Criteria

The study excluded adolescents who were out of schools. Adolescents were excluded when they presented other psychological problems of the past or at the moment. The study also excluded adolescents in secondary schools who had other

chronic diseases, those on antidepressants and those who were on any other psychotherapy prior and during the study were also excluded from the study. Students did not obtain monetary compensation for participation in the intervention and thus excluded anyone who asked for such gains. Form four students were excluded from the study as post-test would have been challenging. Adolescents who the headteacher did not provide written consent for taking part in the study, those who previously undertook any such screening tests, the severely depressed and non-assenting adolescents were excluded from the study.

3.4 Study Variables

A variable can be defined features or qualities that change within study (Mack & Gass, 2005). The variables of the study were as follows: -

3.4.1 Dependent Variables

These are the changeable aspects of a study that are as a result of an experimental manipulation of the independent variable(s). For this study, reduced depression and increased PWB scores among adolescents in secondary schools were the dependent variable.

3.4.2 Independent Variables

An independent variable is one which is believed to cause variations in results. It is manipulated to determine its effects on the dependent variable. The researcher manipulated the biomedical (age, gender, medical conditions), the school-related risk factors (poor academic performance, stringent school rules, bullying) and the psycho-social risk factors to see if they affected dependent variables.

3.4.3 Intervening Variables

The WBT components (Self-acceptance, purpose in life, personal growth, autonomy, environmental mastery and positive relations) and G&C components (educational, vocational, personal and rehabilitation) were the intervening variables.

3.5 Sampling Design and Strategies

Sampling design refers to a scientific function that provides a researcher with the probability of whatever given sample being drawn. Sampling methods on the other hand refers to the way that sample units are selected. Sampling methods for this study were both probabilistic and non-probabilistic. The selection of the 42 G&C teachers, the 12 Sub-County Education Directors and the 12 Sub-County Medical Officers was done by purposive sampling. Multi-stage cluster sampling was used to select schools. All the schools in Kakamega County were first clustered into the three administrative units of Kakamega County: North, South and Central.

They were further grouped basing on the type of school such as Mixed boarding (MB), Mixed Day and Boarding (MDB), Boys Boarding (BB), Boys' Day & Boarding, (BDB), girls boarding (GB), Girls Day & Boarding (GDB), and Mixed Day (MD) per region. Two schools from each cluster were randomly selected making fourteen schools from each region. A total of 42 schools were then randomly selected. This was to ensure representation of the various cadres of schools in the County. Simple random sampling was then used to select the participating adolescents. School registers were collected as in, from form one to three and numbered. A sample of 448 students for the pretest study.

3.6 Sample Size Determination

A sample refers to a small proportion chosen for observation and analysis (Best & Kahn, 2004). A sample ought to be a representative of the population from which it is taken. The open-source statistical power application, G-Power was used to calculate the sample size. The G-power is a method of sample calculation that gives the researcher the capacity to conduct several types of power analyses to attain the required sample (Kang, 2021). The method also provides an easy interface when in use (Kang, 2021). For the sample size for the adolescents, a G-power analysis was used to ascertain the sample size (n), computed as a function of the required power level (1-β) which was taken as 80%, the pre-specified significance level (α=0.05), and a population effect size of 0.4 (Kang, 2021). Based on this analysis, the study recruited 448 adolescents.

To sample the schools, the researcher was guided by Mugenda and Mugenda (2008). According to Mugenda and Mugenda (2008), a sample size of 10-50% is acceptable (Mugenda & Mugenda, 2008). The researcher picked on 10% of the schools as sufficient enough to represent the 442 secondary schools, thus sampling 42 secondary schools in Kakamega County, Kenya. The sample of the 42 secondary schools in Kakamega County and the guidance and counseling teachers was selected purposively. All the twelve sub-county education and medical officers were included in the study.

Table 3.2: Study Population and Sample size

Respondents	Sample population	Sampling method
Schools	42	Multi-stage cluster
Adolescents	448	Simple random
G&C Teachers	42	Purposive
Sub County Education Directors	12	Purposive
Sub-County Medical Officers	12	Purposive
Depressed Adolescents at pretest &post-test	184	Purposive

Source: Ministry of Education Kakamega County and Ministry of Health 2020

3.7 Data Collection

Primary and secondary data was collected in three phases. The research was conducted by 26 counselling psychologists under the supervision of the supervisory team. The selected schools were informed prior to the days of study. This was to allow setting of an appropriate date and time period for the tools to be administered. The researcher also ascertained that the school head teachers were present in school for consenting purposes. The G&C teachers were also confirmed to be present to respond to their questionnaires and should any student become distressed. On the agreed upon day, the head teachers and the G&C teachers were shown the letters of approval and informed on the nature of the study. The introductory letter from university was read to the selected respondents individually.

3.7.1 Pretest Phase

At this level, the researcher first sought assent and consent from the 448 adolescents. Thirty-seven adolescents declined taking part in the study after the process of assenting and consenting. By use of questionnaires, the researcher sought to establish the prevalence together with the risk factors for depression in secondary

schools in Kakamega County. Depression levels were measured using the Kutcher Adolescent Depression Scale (KADS-11). The KADS-11 scores were also recorded. The scores of this tool ranged from 0 to 44. For the study, scores above 25 showed depression. The students also responded to a socio-demographic questionnaire at this stage. The G&C teachers, the Sub-County Directors of Education and the Sub-County Medical officers were interviewed at the pretest. The findings of the pretest were analyzed and presented in as percentages in frequency tables and themes. The findings informed the subsequent phases of the study. The pretest phase was conducted in the month of July in 2021 to address the first three objectives of the study.

3.7.2 Administration of the Interventions

At the implementation phase, the counseling psychologists underwent a two-day refresher training of the WBT protocol and of G&C. The 184 adolescents with depression scores of the KADS-11 of above 25 which was the mean of the depression scores for all the adolescents were randomly assigned to the WBT or the G&C group. All the 184 adolescents with depression were provided with diaries for use during the therapy sessions. The students were then taken through the assent and consent two students declined to proceed with the therapies. They were then referred to the available facilities. The remaining 182 were then assigned to WBT and G&C group of 91 adolescents each. In their respective groups, the adolescents underwent the eight sessions of the WBT and G&C conducted for a period of 8 weeks (1 session per week).

The research assistants recorded the process they undertook with the adolescents. Supervisory meetings were held every week to ensure adherence to study protocols and processes. The 91 adolescents in the WBT have their protocol attached in

appendix X. The 91 adolescents in G&C also had their sessions by the research assistants as per the guidelines of the Ministry of Education. Each intervention session with the adolescents lasted for 50 minutes each week, for the eight weeks. This aimed at getting the adolescents from a worse off level of well-being to an improved level which would then lead to depression management.

The first step was measurement of the psychological well-being of the adolescents using the PWB scale of 18 items (PWB-Q-18). Their scores were recorded. The adolescents were then taken through the specific treatments for a period of eight weeks. Those in the WBT were specifically taken through methods of self-monitoring for well-being (Fava, 2016). During the first session of the WBT, the adolescents were to taught on self-monitoring and reporting. They were also expected to identify activities and situations that promoted PWB and share with the therapist, as well as thoughts and beliefs leading to premature interruption of well-being as guided in the WBT protocol in appendix X. In this session still, they were to take note of the irrational or automatic thoughts related to dimensions of PWB.

The intermediate stage focused on the relationship between thoughts and emotions, basing on the WBT theoretical protocol. The adolescents worked on the six specific components of WBT in no given order. On environmental mastery, the adolescents were expected to acquire effective use of opportunities and ability to create or choose personal contexts suitable to personal needs and values. They were to also check out for any obstacles that hinder effective choice of personal contexts that are good for their needs.

The goal for personal growth component was to help adolescents acquire the feeling of continued development, growth and expansion and the improvement in self and behavior over time. On the purpose in life component, the adolescents were meant to develop goals, hope and passion in life using the optimistic explanatory style to replace pessimistic thoughts with optimistic thoughts. On the aspect of autonomy, the adolescents were to meant to develop the ability to resist to social pressures, self-determination and to do evaluation of self by personal standards. This was achieved by the use of the internal locus of control technique.

By use of the self-esteem technique of daily life, the adolescents were to develop positive attitude toward self, accept the good and bad qualities about themselves and have a positive feeling about their past life. On the element of positive relations, the adolescents were to acquire warm and trusting relationships, develop strong empathy and understand of give and take of human relationships. The gratitude technique of daily living was used here in this case. The adolescent filled in the diary in a column form. The first column was on the situation on the particular component of WBT. The second column included the feeling (well-being, fears and challenges) put on a specific scale (intensity) in the third column. The fourth column introduced that thing that interrupted the well-being.

The fifth column had the observer's comment/interjection/ modification of the dysfunction. The researcher identified the challenging situations that the adolescent had to avert. It is at this point that the researcher encouraged the adolescents to confront the challenges. The aim of this stage was to reconfigure the thought processes and mindset of the adolescents. The last sessions of the WBT aimed at developing positive aspects of the WBT. The adolescents in the WBT intervention

group were self-reporting on each of the aspect of PWB for each week. At the end of the eighth week the students were thanked. The WBT protocol is attached to the Appendix X.

The adolescents in the G&C group were subjected to a session of Counselling every week for the eight weeks. In the first two weeks, there was an introduction of the researcher to the adolescents to know their challenges. The next sessions were based on the talks on the problematic areas identified by the adolescent so as to make them have ability to manage depression. This phase was conducted from August to September in 2021.

3.7.3 Post-test Phase

The primary objective of this phase was to evaluate the effectiveness of the WBT and G&C on depression management. To do so, the KADS-11 and the PWB-Q-18 were administered to the 91 adolescents in the WBT and 91 G&C group and scores the G&C were computed and compared to the initial scores at the pretest. This was to determine the intervention with higher scores of PWB and low score of depression. This phase was done in November 2021. The summary of the study is as shown in the figure 3.1: -

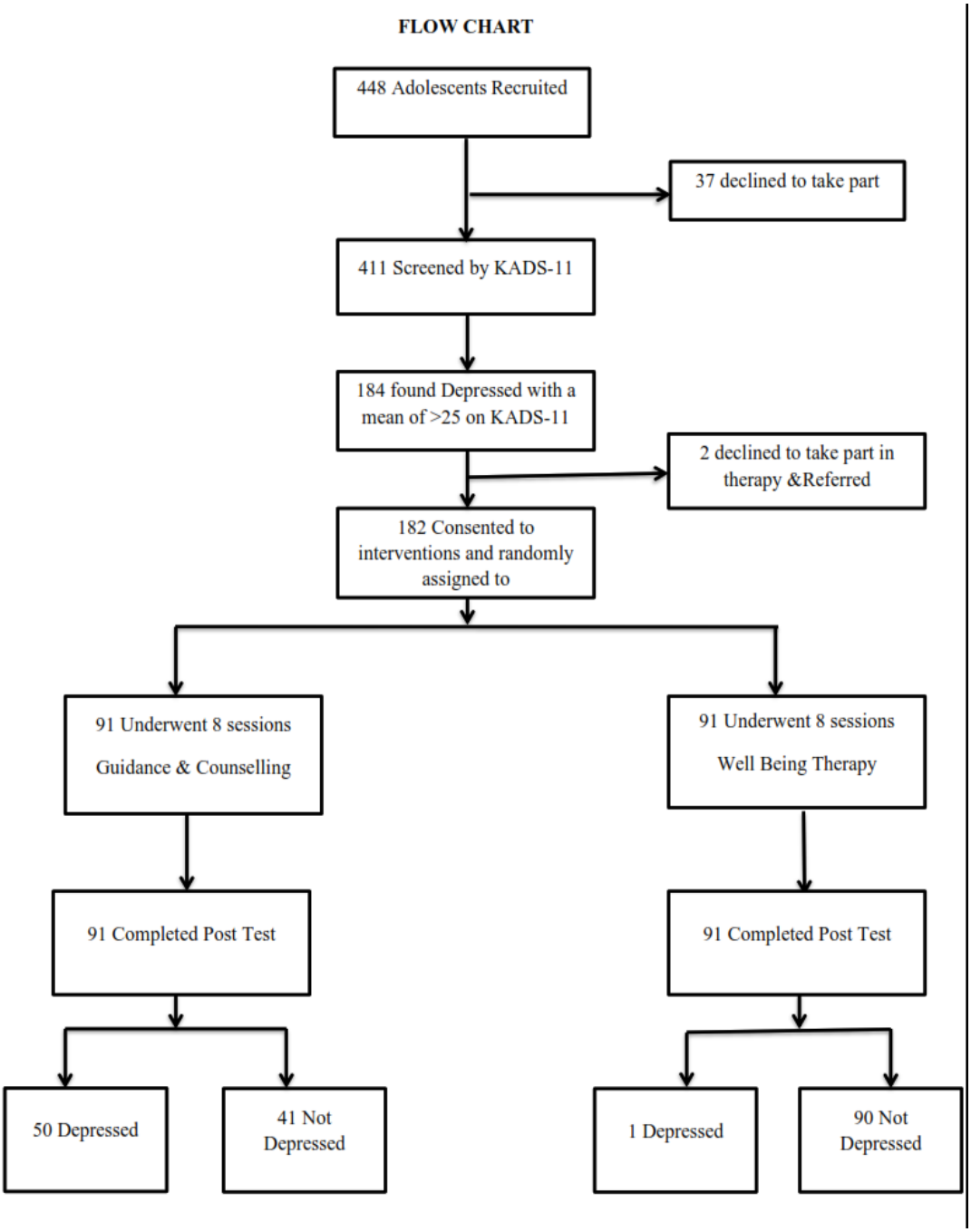

Figure 3.1: Study Flow Chart

3.7.4 Data Collection Instruments

All the data collection tools were uploaded into the Open Data Kit (ODK) suite. This was to allow data collection take place by use of Android mobile devices as used by the research assistant. The uploaded tools were input into a Google drive that allowed collection of data while off-line. Data was then submitted to an online

server via mobile carrier service at the time of data collection. ODK allowed the data collection team to upload texts, numeric data, photo, video, bar-codes, and audio uploads to an online server. The ODK also minimizes errors of incomplete data and as well cuts down the costs and time for data entry. Data was encrypted and stored off-line and only accessed on a local area network by the researcher. The data collection tools were as follows: -

a. Kutcher Adolescent Depression 11-ITEM Scale- (KADS-11)

The KADS-11 was used to detect the prevalence of depression symptoms among the school-going adolescents in Kakamega County. Previous reliability index for the KADS-11 was 0.7 (Lowe *et al*., 2018). This tool was chosen for its' tested validity and reliability as well as its applicability at a pretest and post-test among adolescents. The tool had high scores in terms of specificity and reliability (Kutcher, 2003). This tool was used at the pretest and post-test.

b. Socio-demographic Questionnaire- (SDQ)

The Socio-demographic questionnaire was formulated from the study objectives and variables. The Socio-demographic questionnaire included items that aimed to identify the age, the gender, category of school, the risk factors of depression, the strategies used in depression identification and management were also included as informed by the literature review. This tool was used at the pretest.

c. Psychological Well-being Questionnaire (PWB-Q-18)

This was an adopted tool from Carol Ryff's 18-items psychological well-being questionnaire. It was administered at the intervention and post-test phase of the study to test the level of well-being. The questions in this tool were based on the six components of well-being by Ryff (1989). The Autonomy component questions

were 15, 17, and 18 while those of the Environmental Mastery component were question 4, 8, and 9. The Personal Growth component questions 11, 12, and 14 and those of the Positive Relations sub-scale 6,13, and 16. The questions for the Purpose in Life component are questions 3, 7, 10 and those of the Self-Acceptance questions 1, 2, and 5 (Ryff, 1989).

d. The Key Informant Interview Guide

The tool was administered to the 12 Sub-County Education Directors and 12 Sub-County Medical Officers. This tool consisted of open-ended questions that helped obtain responses on prevalence of depression, risk factors, strategies for identification and management of depression among adolescents. The tool was also used at the pretest phase of the study. Data was audio-recorded for transcription and analysis.

e. Questionnaire for G&C Teachers

The questionnaire was formulated from the study objectives and variables. The questions included items that aimed to identify the age, the gender, category of school, the risk factors of depression, the strategies used in depression identification and management implemented in their various schools. The questions are on a Likert scale.

3.7.5 Selection and Training of the Research Assistants (RAs)

The researcher recruited 26 research assistants who had a degree in counseling psychology to help in data collection and processing. They had to demonstrate professional ability and with no personal problems during the interview with them. They had to have the ability to use android phones provided for by the researcher. They were taken through a two-week training on ODK suite, the objectives of the

study, the data collection methods and tools together with the ethical considerations. They were also taken through the WBT procedures and G&C. Emphasis was further placed on honesty, integrity and confidentiality. Matters of informed consent were also highlighted in the training for consideration during fieldwork. They also signed a commitment form to keep data confidential.

3.7.6 Reliability

Reliability in a study denotes the trustworthiness or consistency of the research tool used (Everitt & Skrondal, 2010). The reliability of this study was constituted by computing the Cronbach's coefficient alpha, conceding high reliability estimates, with dependability being reasoned as good or satisfactory if the reliability coefficient was 0.80 or above. In broad sense, a correlation of +.80 or greater was considered good reliability. For this study a correlation more than >0.7 meant that each tool was of high reliability. Cronbach's alpha is therefore not a statistical test but a coefficient of reliability. It is commonly applied when you have multiple Likert questions in a study tool that form a scale and you wish to determine if the scale is reliable. The formula below was useful in computing reliability test.

$$\alpha = \frac{k^2 \sigma_{ij}}{\sigma^2 x}$$

Where α is Cronbach's alpha, k = number of items being tested, σ_{ij} = covariance between x_i and x_j, and σ_x = item variance and inter-item variances. The ideal internal consistency is considered acceptable and good if it is 0.7 and above however, in the

table 3.3 presents George & Mallery (2003) rule of thumb that a Cronbach's alpha of below 0.5 is low and 0.70 and above is good and acceptable.

Table 3.3: Level of Internal consistency based on Cronbach's alpha

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9>\alpha \geq 0.8$	Good
$0.8>\alpha \geq 0.7$	Acceptable
$0.7>\alpha \geq 0.6$	Questionable
$0.6>\alpha \geq 0.5$	Poor
$0.5>\alpha$	Unacceptable

Source: George & Mallery (2003)

In this study, the reliability test was carried out using statistical analysis in SPSS version 27 with selected key items per objective and/or key areas of the study (George & Mallery, 2003). A Cronbach's alpha was accepted if the reliability test scored >0.7. Items of the PWB scale showed poor Cronbach's alpha using all the 18 items. The items used to measure the PWB were in multiple 6-point Likert scale (Strongly Disagree=1, Disagree=2, Slightly Disagree=3, Slightly Agree=4, Agree=5, Strongly Agree=6) thus, affecting the internal consistency. Further, about a half of the items were in reverse order hence affecting the reliability test score (Strongly Disagree=6, Disagree=5, Slightly Disagree=4, Slightly Agree=3, Agree=2, Strongly Agree=1). However, items for Kutcher Adolescent Depression Scale-11 had 4-point Likert scale (Hardly Ever=1, Much of the Time=2, Most of the Time=3, All of the Time=4) thus, experiencing stable reliability test score (Cronbach's Alpha). Table 3.4 shows Cronbach's Alpha and the number of items tested per study category/objective.

From the table all the items showed good internal consistency except one as explained above.

Table 3.4: Reliability test (α) of Items

Tool used	Cronbach's Alpha (α)	Number of items
KADS-11 Questions	0.9(Pretest=0.7); Posttest=0.8)	11
Psychological Well-being Questions	0.5 (Pretest=0.4; posttest=0.6)	18

3.7.7 Validity

Validity is important in research because conclusions drawn from such data are more accurate, relevant and meaningful. To test the validity of the instruments, a pilot study was conducted in the neighbouring Bungoma County. More so, the researcher employed a pilot study to determine the construct validity. The aim of a pilot study was be to assess the clarity of the wordings in the questionnaires and the key informant guide. The findings were informed the researcher on possible adjustments in some of the tools. The items which failed to meet the anticipated data in the Socio-demographic questionnaire and the key informant interviews were discarded. Items in the KADS-11 and PWB scale of 18 items were all adopted. The use of a mixed method approach in this study also provided an opportunity to triangulate and cross-check the results thus ensuring validity and credibility to the research process (Namenya, 2018).

3.7.8 Quality Assurance

To ensure quality in this study, the researcher minimized post-assignment attrition by reducing demands of the research. The researcher also formulated questions about dependent variables in isolation.

3.8 Pilot Study

A pilot study confers an advantage of reviewing and revising the questions with the possibility of reducing to possible misinterpretation of items during actual field work (Burns *et al.,* 2008). O'Neill (2022) contends that 10-20% of the sample population is sufficiently recommended for a pilot study (O'Neill, 2022). The pilot study for this study was done in Bungoma County. The tools for the G&C teachers were piloted in seven schools that were selected randomly. In the same 7 schools, six adolescents were randomly selected from form one to three for the piloting of the KADS-11, SDQ and the PWB-Q-18. One Sub County Education Director and one medical officer from the County were also used for piloting the key informant interview guide. The findings of the pilot study helped the researcher address challenges brought about by structure of the socio-demographic, G&C teachers and the key informant tools.

3.9 Data Processing, Analysis and Presentation

They researcher randomly checked the data collected on a daily basis to ensure accuracy. The data was then relayed to the server operated by the researcher. The data was backed-up on the researcher's email and passwords were put for confidentiality. Since data on ODK-suite was already entered, the researcher exported the data to Statistical Package for Social Sciences analysis. All these analyses were computed by the SPSS 27.0 software, and *p*-values were computed for

the purposes of measuring the statistical significance at 0.05 and effect size. Qualitative data from the key informant interviews was analyzed thematically using N-Vivo and presented in themes. The grammatical mistakes were checked from the four emerging themes. The quantitative data was presented as frequency tables, pie charts, bar graphs, means as well as inferential statistics. Table 3.5 shows the summary of this section.

Table 3.5: Data Analysis

Objective	Instrument	Variables	Data Analysis Technique
Prevalence of depression	Kutcher Adolescent Depression Scale 11-items	Low mood, hopelessness, suicidal thoughts	Percentages, means and standard Deviation
Risk factors for depression	Socio-demographic Questionnaire, key informant interview schedule	Biomedical risks, psycho-social risks and school-related risks	Generalized linear models, Categorization of themes for the qualitative data
Strategies for managing depression	Socio-demographic Questionnaire, key informant interview schedule	Well Being Therapy, guidance and counseling	Percentages, Categorization of themes for the qualitative data
Effectiveness of WBT	PWB Scale, and KADS-11 Questionnaire	Low depression scores High psychological well being	Means and standard deviations, odd ratios, effect size tests, and *t*-tests

Source: Researcher (2022)

3.10 Logical and Ethical Considerations

Ethical approval to conduct this research was obtained from the Masinde Muliro University of Science and Technology Institutional Ethics and Review Committee. Research Permint for this study was acquired from the National Commission of Science and Technology, Ministry of Health, the Ministry of Education, as well as

the Ministry of Interior Coordination. All participants above the age 18 years signed an informed consent before taking part. After deciding the adolescent's eligibility, those 18 and 19 years and above were furnished with written informed consent. For adolescents between 15- and 17-years adolescents, the researcher got written consent from there headteachers. These adolescents below 17 years also signed the child assent forms. Adolescents found depressed underwent therapy by the research assistants and those who declined were given referrals. The data gathered was analyzed and presented in formats that never identified the participants. Principles of beneficence and non-maleficence were adhered to by the research assistants. The participants had the chance to withdraw from the study at any time, if they so choose.

At every stage of the study, participants were informed about the voluntary nature of the study and ability to withdraw from the study at any level. Anonymity and confidentiality were adhered to by use of pseudonyms. The research assistants signed a commitment form to adhere to all ethical standards of the study. Mobile phones and computers used in the study we password provided by the researcher and were password protected. The data was deleted all data from the mobile phones after the study. The Adolescent's self-observation diaries were collected and destroyed after the study. Data dissemination was done to the relevant authorities.

CHAPTER FOUR

FINDINGS

4.0 Introduction

This chapter presents results of the pretest and post-test. The purpose of this study was to examine the effectiveness of Well Being Therapy on depression management among adolescents in secondary schools in Kakamega County, Kenya. The results are presented as per the objectives from the findings of the participants.

4.1 Response Rate

The response rate of the pretest was at 92% for the adolescents and 100% for the guidance and counseling teachers, sub county education and medical officers. The adolescent response rate was attributed to the 37 students who for were unwilling to participate in the study. Response rate for the post-test was 99%. Bowling (2004) notes that a response rate of 75% is considered an acceptable minimum standard (Bowling, 2004).

4.2 Socio-demographic Characteristics

The socio-demographic characteristics of the adolescents and the guidance and counseling teachers were presented for analysis in this study. For the adolescents, the median age was 17 and the mean age was 17.1 years, the range is 4. The results further showed that more than half (*n*=238, 58%) of the adolescents were females. On the level of study, the results indicated that majority of the respondents were in form two (*n* = 158, 38%). Most of the schools were government sponsored (*n*= 410, 100%) and were mainly mixed day schools (*n*=222, 54%). On religious matters, most of the adolescents were Christians (*n*= 387, 94%) who attended church once a week (*n* = 289, 70%). When asked on their residence, a majority of the adolescents

were rural dwellers (*n*= 279, 68%). Frequencies and percentages are as presented in Table 4.1.

Table 4.1: Socio-demographic Characteristics of Adolescents at pretest

Variable	*n=411*	Percentage (%)
Age		
Mean age		17.1
Median age		17
Gender		
Male	173	42.1
Female	238	57.9
Level of study		
Form 1	101	24.6
Form 2	169	41.1
Form 3	141	34.3
School Category		
Government	410	99.8
Private	1	0.2
School Sponsorship		
Yes	363	88.3
No	48	11.7
School type		
Boys' boarding	50	12.2
Girls' boarding	39	9.5
Mixed day and boarding	50	12.2
Mixed Day	222	54.0
Girls' day and boarding	42	10.2
Boys' Day and Boarding	8	1.9
Religion		
Christian	387	94.2
Muslim	24	5.8
Frequency of Attendance of Religious services		
Everyday	27	6.6
Once a week	289	70.3
Once a month	80	19.5
Once a year	8	1.9
Less than once a year	3	0.7
Never	4	1.0
Residence		
Urban	132	32.1
Rural	279	67.9

The socio-demographic characteristics of the guidance and counseling teachers were as follows. In terms of gender, guidance and counseling teachers were largely female (*n* = 36, 86%). On matters age, majority (*n*=26, 62%) of G&C Teachers (G&CTs) were in the bracket was 46-60 years. Most of the teacher Christians (*n* =28, 67%). On issues residence, majority of the G&CTs were mainly rural dwellers (*n*=32, 71%) dwellers unlike the students who were majorly rural dwellers. Majority of the G&C teachers were degree holders (*n*=33, 79%). Their socio-demographic characteristics of the G&CTs were as shown in table 4.2.

Table 4.2 Socio-demographic Characteristics of the Guidance and Counseling Teachers

Variable	***n=42***	***%***
Age		
25 -30 years	4	9.5
31-35years	5	11.9
36-40 years	5	11.9
41-45 years	2	4.8
46-60 years	26	61.9
Gender		
Female	36	85.7
Male	6	14.3
Religion		
Christian	28	66.7
Muslim	14	33.3
Residence		
Rural	32	71.2
Urban	10	23.8
Highest Level of education		
Degree	33	78.6
Masters	4	9.5
Diploma	4	9.5
Postgraduate diploma	1	2.4

4.3 Prevalence of Adolescent Depression

The first objective of the study was to determine the prevalence of depression among adolescents in secondary schools in Kakamega County. The mean scores of the Kutcher Adolescent Scale were computed to obtain the total score for the adolescents. The mean score was calculated and found to be 25 out of the possible 44. All adolescents with a score of >25 was considered depressed. The prevalence of depression was at 44.8%. This was arrived at by having the 184 depressed adolescents divided by the sample population multiplied by 100%. The responses of the 11 items were summarized in to either having felt or having not felt particular symptom. The results show that majority of the respondents (*n*=411, 70%) felt low mood, while 30% hardly felt so.

The findings also indicated that 70% of the depressed adolescents felt irritable. When asked on whether they had sleep difficulties, majority (*n*=411, 58%) hardly experienced it. Consequently, when interrogated on their interest in hanging out with friends or being with boyfriends/girlfriends or going out of the house, doing school work or work or even participating in recreation activities, 41% hardly felt so while the 59% experienced the same. Majority of the respondents (*n*=411, 69%) reported to feeling of hopelessness and worthlessness. When the respondents were further asked on whether they felt tired all the time, majority (*n*=411, 56%) experienced the same while (*n*=411, 44%) hardly felt so.

Likewise, majority of the adolescents (*n*=411, 63%) had to trouble concentrating in school. On thought about life, the majority of the adolescents (*n*=411, 53%) felt that life was not fun at. Majority (*n*=411, 73%) felt worried and nervous, much of the time. Majority of the adolescents (*n*=411, 53%) had no physical signs of depression

such as headaches and diarrhea and on suicidality, (*n*=411, 74%) had no such thoughts or plans. From the findings, it was shown that the signs to check out for depression among adolescents in secondary schools are low mood, irritability, feeling worthless and hopeless and feeling anxious, having trouble concentrating and suicidal thoughts. The results are as shown in table 4.3.

Table 4.3: Results of the KADS-11

KUTCHER ADOLESCENT DEPRESSION ITEMS	**KUTCHER ADOLESCENT DEPRESSION LIKERT SCALE (1 – 4)**					
	Hardly Ever	Much Time	Most Time	All Time	Mean	SD
Low mood	30.2	42.8	22.4	4.6	2.0	0.8
Irritable	31.1	44.8	19.0	5.1	2.0	0.8
Sleep difficulties	55.7	31.9	9.7	2.7	1.6	0.8
Decreased interest	41.4	38.2	15.6	4.8	1.8	0.9
Feelings of worthlessness	40.1	39.0	14.9	6.1	1.9	0.9
Feeling tired	44.3	37.7	15.1	2.9	1.8	0.8
Trouble concentrating	37.0	42.6	17.0	3.4	1.9	0.8
Life is not fun	46.5	34.8	15.1	3.6	1.8	0.8
Worried	27.2	55.5	14.6	2.7	1.8	0.8
Physical feelings of worry	52.6	36.7	8.5	2.2	1.6	0.7
Thoughts/actions about suicide/self-harm	74.2	12.9	10.0	2.9	1.4	0.8
Kutcher Adolescent Depression Scale						
Min (Max)	25					
Mean (SD)	44.0					
Level of Adolescent Depression (%)						
Adolescent Not Depressed, n (%)	227		55.2			
Adolescent Depressed, n (%)	184		44.8			

From the findings of the study, majority of the adolescents (*n*=227, 55%) were not depressed as they scored below the mean of depression scores on the KADS-11. The percentages are shown in figure 4.1.

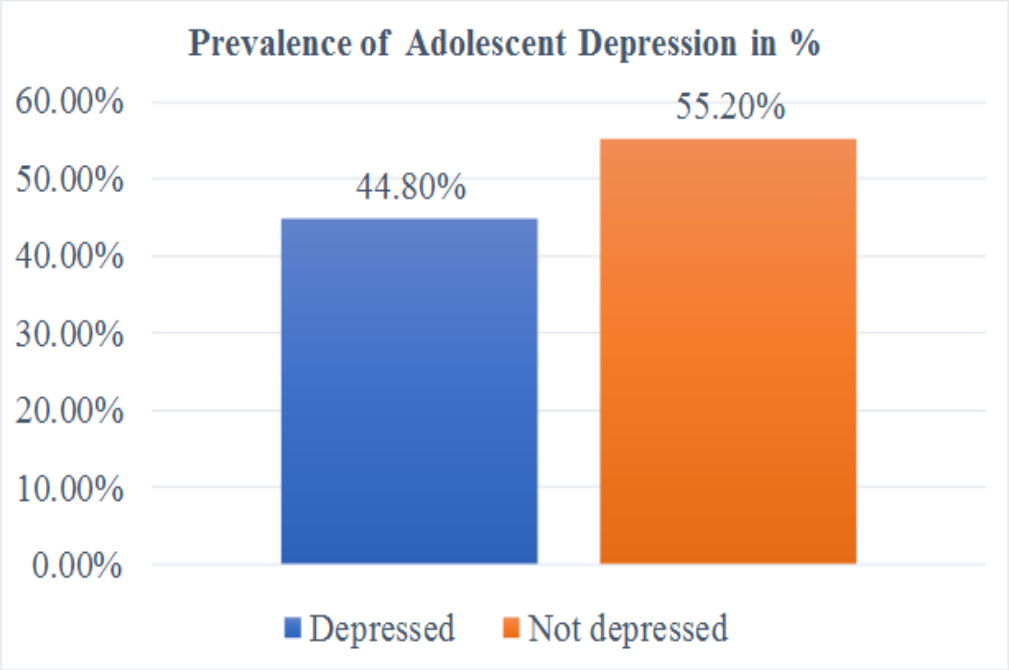

Figure 4.1 Prevalence of Depression

4.4 Risk Factors for Depression among Adolescents

The second objective of the study was to establish the risk factors for depression among adolescents in secondary schools in Kakamega County. The researcher conducted a generalized linear model analysis for the socio-demographic characteristics and all the risk factors for depression. The risk factors were categorized as psycho-social, biomedical, and school-related.

4.4.1 Socio-demographic Characteristics and Depression

A generalized linear model analysis of the socio-demographic characteristics and depression was conducted. The findings showed that adolescents who were under 17 years were 1.7 times (OR: 1.72, 95% CI: 1.16, 2.54), more likely to develop depression compared to students above 17 years. Likewise, for form 1 and 2 students were nearly 2 times more likely to have depression as compared to participants in

form 3 (OR = 1.83, 95% CI: 1.23, 2.71). Findings further show that adolescents in schools that were run by a sponsor were 1.3 times (0.74,2.23) less likely to suffer from depression, while adolescents in boys boarding schools were 1.9 (1.276, 2.781) times likely by to be depressed than those in girl schools. Findings are as shown in table 4.4.

Table 4.4 Socio-demographic Characteristics as Predictors of Depression

Variable	Depressed(*n*=184)	Odds Ratio (95% Cl)	*p*-value
Age in years			
≤17	60.9	1.72(1.16,2.54)	0.021**
> 17	39.1		
Gender			
Male	46.7	0.79 (0.42, 5.22)	0.52
Female	53.3	Ref	Ref
Form (Class)			
Form 1 and 2	60.9	1.83(1.23,2.71)	0.05**
Form 3	38.1	Ref	Ref
School Category			
Government	100	0.5(0.0.801,1.137)	0.601
Private	0	Ref	
School run a Sponsor			
Yes	91.8	1.3 (0.74,2.23)	0.035**
No	8.2	Ref	Ref
School type			
Boys' boarding/ boarding and day	15.3	1.9(1.276, 2.781)	0.550*
Girls' boarding/ girls' day and boarding	15.8	0.4(0.068, 1.911)	0.354
Mixed Day	69.3	Ref	Ref
Religion			
Christian	95.1	1.138 (2)	0.566
Muslim	4.9	Ref	Ref
Residence			
Urban	20.7	0.21 (2)	0.897
Peri-urban	11.9	0.25(0.076, 1.811)	0.786
Rural	67.4	Ref	Ref

4.4.2 Psycho-social Risk Factors for Depression among Adolescents

The study sought to determine certain psycho-social factors as predictors of depression. A Generalized Linear model (GLM) analysis of psycho-social factors on depression was conducted. The results show that the risk of developing depression was three times, 1.5 times and 1.2 times for students who had no parents (OR=3.06, 95% CI: 1.03-,9.04), those who had a single-parent mother only (OR= 1.52, 95% CI: 0.76, 2.80) and father only (OR= 1.21, 95% CI: 0.21, 2.31) respectively compared to students who had both parents. Students who were neutral on whether they had ease talking to their parents and those who had difficulty in talking with their parents were twice (OR: 2.06, 95% CI: 01.03,5.04) more likely and 17% (OR= 0.83, 95% CI: 0.39,1.75) less chance of developing depression than those who had it very difficult to talk with their parents.

On the other students whose parents never married also had nearly three times (OR=2.7, 95% CI: 1.62, 4.24) likelihood of developing depression than those whose parents were married. Students whose parents were perceived to be poor on the other hand were 3.3 times (OR= 3.3, 95% CI: 1.66, 5.31) significantly more likely to develop depression than those whose parents were perceived to be rich. Other factors that had significant influence on depression were: having friendship problems (OR= 2.1, 95% CI: (1.42, 3.79); being anxious (OR= 1.83, 95% CI: 1.23, 2.71); Suicide Attempt (OR= 10.16, 95% CI: 1.50, 68.78). Conspicuously, there was also increased likelihood of students who had access to mobile phones developing depression (OR=1.4= 95%; 95% Cl; 1.01, 2.18) than those who did not. The findings are shown as in table 4.5.

Table 4.5 The Psycho-Social Risk Factors as Predictors of Depression

Variable	O.R(95%CI)	*P*-value
Have parents		
None	3.06(1.03,9.04)	<0.001**
Father only	1.52(0.76, 2.80)	0.02**
Mother Only	1.21(0.21, 2.31)	0.01**
Both	Ref	
Staying the same household with parents		
Yes	0.56(0.13,2.45)	0.44
No	Ref	
Ease of talking to parents about important things		
Very easy	1.12(0.31,5.02)	0.28
Easy	1.41(0.37,5.28)	0.14
Neutral	2.06(1.03,5.04)	0.02**
Difficult	0.83(0.39,1.75)	0.05**
Very difficult	Ref	
Parental marital status		
Single	0.38(0.03,4.22)	0.43
Never Married	2.70(1.62,4.24)	<0.001**
Separated	1.41(0.33,6.12)	0.64
Married	Ref	
Perceived parental SES		
Poor	3.32(1.66, 5.31)	0.03**
Middle	1.89(1.16,7.07)	0.11
Rich	Ref	
Having siblings		
Yes	3.13(0.51,19.33)	0.22
No	Ref	
Friendship problems		
Yes	2.1(1.42,3.79))	0.055*
No	Ref	
Anxiety		
Yes	1.83(1.23,2.71)	<0.001**
No	Ref	
Separation from partner last 12 months		
Yes	3.29(0.59,18.37)	0.06
No	Ref	
Have access to internet		
Yes	1.4(1.01, 2.18)	0.05**
No	Ref	

A Key Informant also supports that relationship issues could lead to depression: -

> *"I was once a teacher and, in my school, I witnessed a case where a girl committed suicide for sharing a boyfriend with the mother. When the girl learnt that the boyfriend had opted to continue the relationship with the mother and not her, she just could not take it." SDE 003*

4.4.3 Biomedical Risk Factors of Depression among Adolescents

An analysis was conducted using the generalized linear regression model analysis. The results show that alcoholism, HIV positive or infection, and anxiety, significant predictors of depression among students. Adolescents who took alcohol had 63% (OR=0.63; 95% CI: 0.03,1.33) chance of suffering from depression compared to those who did not. Adolescents who were HIV positive had 1.75 times (OR=1.75; 95% CI: 1.06-2.56) higher risk for depression than those who were HIV negative. On the other hand, Students who were anxious had 90% (OR=95% CI: 0.07-4.88), chance of suffering from depression than those who were not (Table 4.6). However, heart disease, Diabetes Type 1 &2, kidney disease, Respiratory disease, Suicide attempt, bipolar disorder, and Cancer were not predictors of depression. Results are as shown in table 4.6. In support the idea, a key informant noted the following.

> *"Sickness is also a cause of depression for adolescents. Some terminal illnesses such as diabetes can cause problems to the young people. Because of hospitalizations, they are always absent from school and this could lead to poor academic grades which could also lead to depression. I also want to note that sickle cell anemia is common among children in this county. This is a disease that need frequent hospitalizations that could lead to depression among children and even for their care givers." SMO 001*

Supporting these findings on biomedical risk factors was another key informant who highlighted that having HIV/AIDS is a probable cause of depression. This is what they said: -

> *"For students who are HIV positive and are in boarding schools, they have serious problems. You know they fear disclosing to peers*

for fear of discrimination. They also have to keep drugs with the school health facility, where they have to be visiting any time, they are to take the medicine. This several visits may raise concerns with the friends. Also, the medicine has to be taken in hiding. All these increase the struggles for the adolescents which could depress them." SMO 0010

Table 4.6 Biomedical Risk Factors as Predictors of Depression

Variable	O.R (95% Cl)	*P*-value
Heart Disease		
Yes	0.41(0.08,2.33)	0.31
No	Ref	
Alcoholism		
Yes	6.29 (1.63,24.33)	<0.001**
No	Ref	
Diabetes Type 1		
Yes	0.03 (0.06,6.07)	0.90
No	Ref	
Diabetes Type 2		
Yes	0.09(0.00,5.93)	0.500
No	Ref	
Kidney disease		
Yes	0.67(0.03, 2.54)	0.24
No	Ref	
HIV positive		
Yes	1.7 (0.80,6.33)	<0.001**
No	Ref	
Respiratory disease		
No	0.61(0.07,5.02)	0.65
Yes	Ref	

4.4.4 School-Related Risk Factors for Depression among Adolescents

An examination of influence the of school-related factors on depression compared with each different reference category shows that the odds of developing depression were significantly increased among students who had difficulty concentrating in school (OR=1.2, 95% CI: (0.73, 2.02); having trouble with the school laws and regulations in the last 12 months (OR= 1.8, 95% CI: 1.22, 2.62); students who had bad past life in schools the last 12 (OR=0.92, 95% CI: 0.01, 5.93). Results are in table 4.7.

Table 4.7 School-Related Factors as Predictors of Depression

Variable	O.R (95% Cl)	*p* -value
Have difficulty in concentrating in school in the last six months		
Yes	1.2 (0.73, 2.02)	0.023
No	Ref	
Been in trouble with the school laws in the last six months		
Yes	1.8 (1.22, 2.63)	<0.001**
No	Ref	
Scored low grades in exams in the last six months		
Yes	1.3 (1.01, 14.59)	0.90
No	Ref	
How do you evaluate your school past life in the last six months		
Good	0.22(0.01,2.93)	0.52
Bad	0.92(0.01,5.93)	0.045
Average	ref	
I haven't been bullied at school in the last six months		
Yes	0.67(0.03, 2.54)	0.2
No	Ref	

These findings are supported by a key informant who said this: -

> *"The number one risk factor I could say is failure to perform well in school. I mean getting low grades. Moreover, the students have just cleared their national exams will soon be receiving placements to the other institutions. For the form ones, you might find a child has performed well, but they have been placed in poor performing schools. So, the child is forced to be in a school environment that*

they don't like. In some cases, they are even called to day schools that are far from them and they have to walk long distances which is very stressful." SDE 005

Another key informant supported these results on school related risk factors and they had this to say: -

"Poor performance in the national examinations such as KCPE and KCSE may make students to be depressed. In some cases, we have heard in the media reports on students who have committed suicide for posting poor grades in these examinations." SDE 006

In a separate interview conducted, this is what the Key informant had to say: -

"The other thing is about is the amount of work that these children are given. Schools nowadays have so much homework for students such that a child has no time to rest. The students are unable to cope with the work given to them. The other risk factor is drug and substance abuse. You know, most students especially in those in boarding schools are addicted to drugs. Because of the restrictions in this schools, accessibility to the drugs and substances are a problem. Where they can't get drugs in school will just be depressed. They may also go to extreme situations like sneaking out of schools to try find the drugs." SDE 009

From the qualitative data obtained, it was evident that poor performance, lack of basic needs in schools, several homework is possible is likely to cause depression, contrary to the quantitative data that showed insignificant p-values.

4.5 Strategies to identify Depression among Adolescents

Adolescents, as well as the guidance and counseling teachers were given a list of depression identification methods used in their schools. Findings from the adolescents show that most schools depend on by referral by teachers (*n*=411, 87%), referral by peers (*n*=411, 73%) and observations by school nurses and teachers (*n*=411, 68%) as depression identification strategies. Majority of the adolescents were not familiar with the other standardized depression measuring tools available. Only 0.2% had knowledge of the Becks Depression Inventory. None of them had heard about or used the patient health questionnaire, generalized anxiety disorder

questionnaire, Hamilton depression rating scale, Children Depression Inventory, or the Center for Epidemiological Studies Depression Scale (*n*=411, 100%). The results are as shown in figure 4.2.

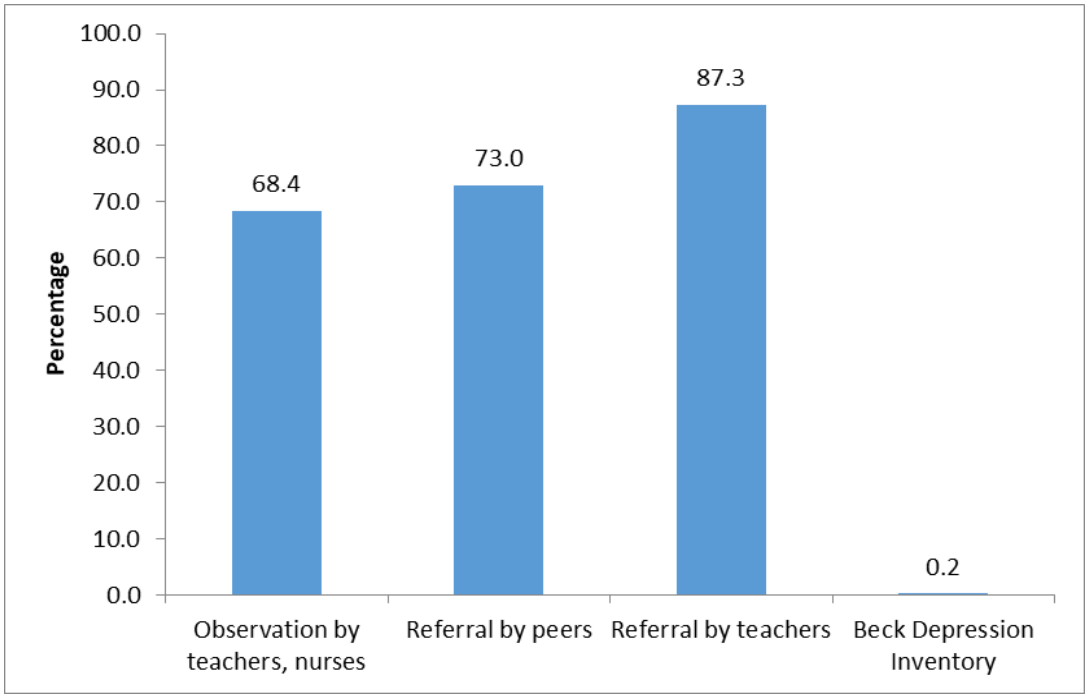

Figure 4.2 Strategies to Identify to Depression as per Adolescents

Findings from the guidance and counseling teachers show that most schools relied on observations made by teachers and nurses' observation (*n*=44, 98%) and referral by peers and teachers (*n*=43, 95%). Majority of the teachers (n=42, 100%) reported being unfamiliar with the standard depression measuring tools. Findings show that they had never used the Patient Health Questionnaire, the Generalized Anxiety Disorder questionnaire, Hamilton Depression Rating Scale, the Center for Epidemiological Studies Depression Scale, Beck Depression Inventory, as was the case with the Children Depression Inventory. Results are presented in Table 4.8.

Table 4.8 Strategies to Identify Depression by G&C Teachers

Variable	***n=42***	***%***
Observation by teachers, nurses, peers		
All of the time	41	98
Not at all	1	2
Referral by peers and teachers		
All of the time	40	95
Not at all	2	4.8
Patient Health Questionnaire		
Not at all	42	100
Generalized Anxiety Disorder questionnaire		
Not at all	42	100
Hamilton Depression Rating Scale		
Not at all	42	100
Beck Depression Inventory		100
Not at all	42	100
Children Depression Inventory		
Not at all	42	100
Center for Epidemiological Studies Depression Scale		
Not at all	42	100

The findings were supported by a Key Informant who pointed out that: -

> *"At school level we have the G&C department which is a mandatory requirement of the education policy that every school must have a department. Most of the times it's just that teachers make observations students may raise an alarm of the unusual behaviors of their friends. When the issue gets beyond the G&C, we refer to a higher level which is a counsellor. Some time back counselors employed were by the ministry for every county but I don't know if that is still the case. Although it was one counsellor for the entire county, she at least provided direction on the mental issues. She was since transferred but there has been no replacement." SDE 008*

Another Key Informant when asked on the strategies they use to identify depression among adolescents, they mentioned of the manifest signs as stated below: -

"For the adolescents, depression may manifest in some way that is very hard to detect. But for the young people, we check withdrawal that is they won't engage in activities such socializing, playing with others, maybe they would also cry a lot. They may have a given posture, like they may gaze in one direction for long and most of the time they would be carried away in thoughts. You may also look at the way they are groomed. Most of the time, they are poor hygiene, right from the hair, clothes, the body itself. I also know that we conduct some tests to ascertain levels of dopamine. The patient is mute, disheveled, dirty, their stooping posture, and at time they have suicidal thoughts or even attempted suicide." SMO 004

4.6 Strategies for Managing Depression among Adolescents

The third objective of the study sought to identify the strategies used to manage depression among adolescents in secondary schools in Kakamega County. The adolescents and guidance and counseling teachers were asked on the strategies implemented. Findings from the adolescents (*n*=411, 100%) reveal that guidance and counselling and life skills education (*n*= 325, 79%) are the main methods used. Findings from the adolescents further revealed that only reported on use the anti-depressant medications. The adolescents also reported the availability of supportive counselling (*n*=411, 27%). Few (*n*=411, 4%) also noted that interpersonal therapy is done in some schools. The respondents noted that all the therapies CBT, PDT, and WBT, were unavailable (*n*=411, 100%). Results are as presented in figure 4.3.

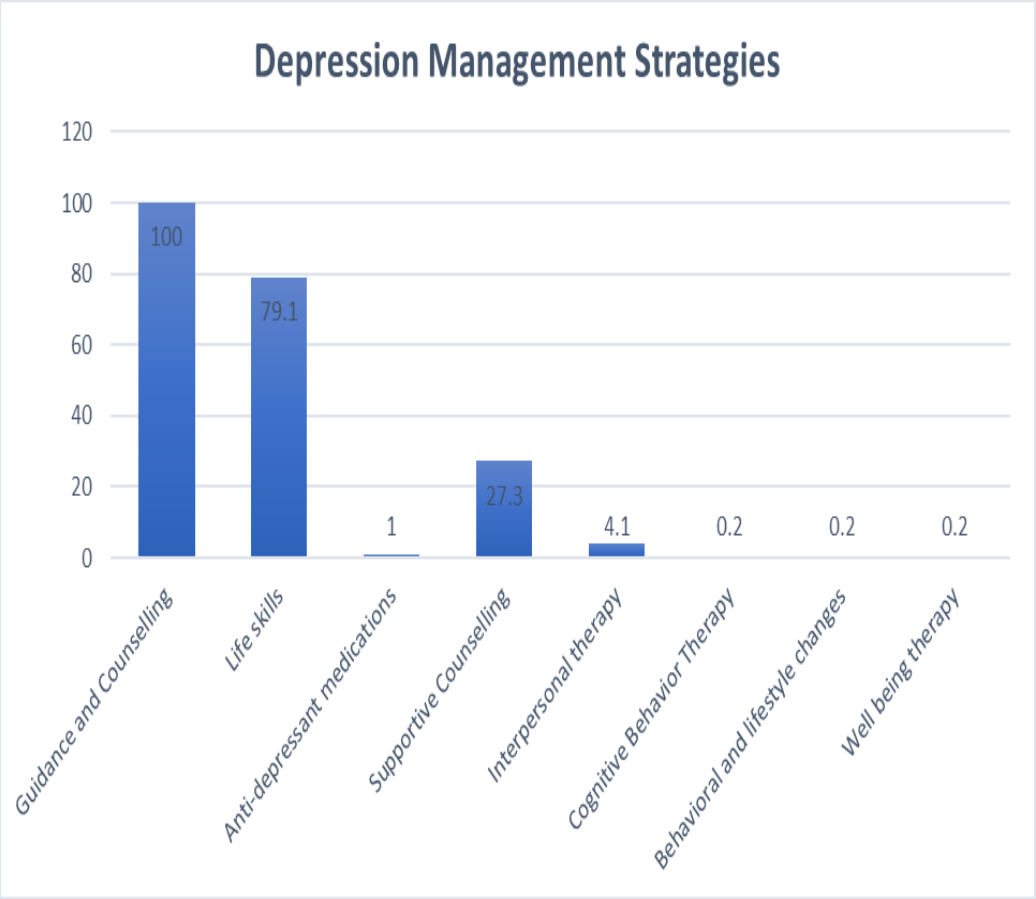

Figure 4.3 Strategies used in Management of Depression as per Adolescents

The findings from the G&C teachers (G&CTs) indicated that majority of schools (*n*=42, 100%) used guidance and counselling and life skills education (*n*=31, 74%). Majority of the G&CTs also reported on lack of anti-depressant medications (*n*=8, 18%). Most of the respondents also reported the unavailability of supportive counselling (*n*=2, 4%). The G&CTs all reported that their schools were not implementing all the therapies CBT, PDT, IPT and WBT (*n*=42, 100%) in depression management. Frequencies and percentages are presented in figure 4.4.

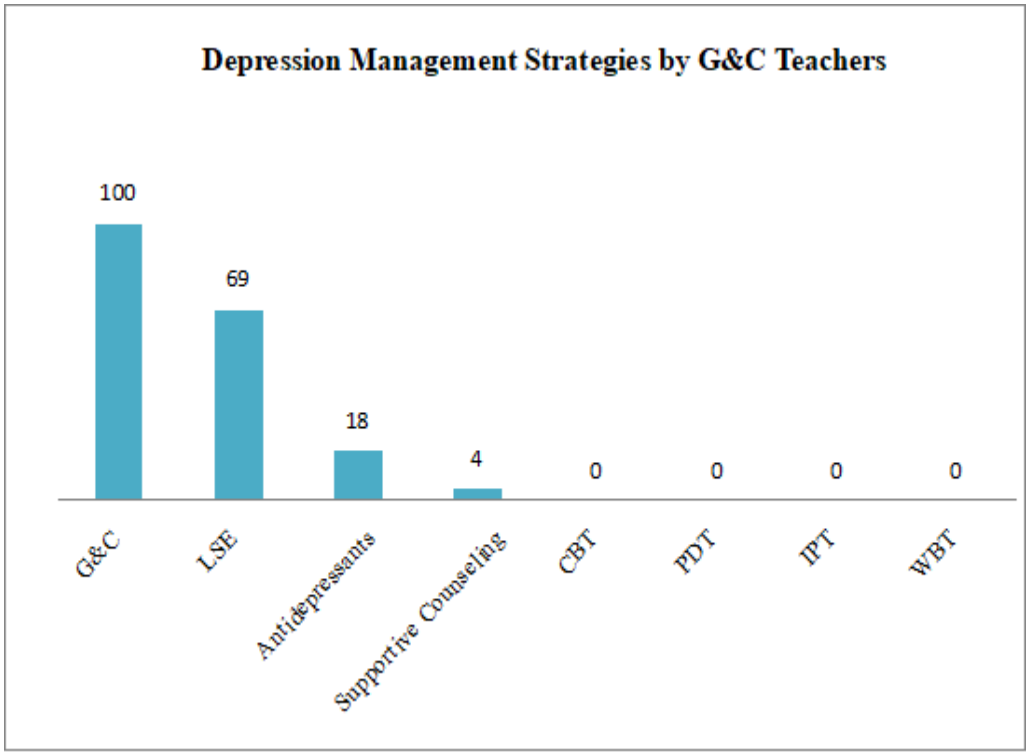

Figure 4.4 Depression Management Strategies by G&C Teachers

Some of the measures identified by the informants for depression management among adolescents were reported that: -

> *"I think we all need continuous medical education on depression management and also, we need to have some supportive materials. I think IEC materials that talk about depression in schools, in hospitals, and even at community level. This will inform people on depression, how it presents, and what maybe done if someone is in need of help. Just like we have help lines for child abuse, we can have even a help-line with a psychological counsellor for the mental health issues. We also need to enhance and simplify the referral process." SM0 002*

The opinion of medical officers was that we go back to school education programs as explained in the except below: -

> *"We have the mental health clinics that run every month in what we call the community outreach services especially by the County Referral Hospital. We also used to do school outreach programs for schools. It is now impossible with COVID-19 restrictions. It is really hard to access schools. And then of course as medical officers, we know of the drugs used in treating mental illnesses such as*

depression. We therefore ensure to stock the essential drugs necessary to manage depression in our referral hospital." SMO 006

Another informant echoed the importance of having counselors as a strategy to be implemented to manage depression in their narration below: -

"We need to have professional counselors at school level. You know even if the teacher training curriculum has a component on guidance and counselling, it is inadequate. Furthermore, the teachers have other responsibilities of which teaching is mandatory and that's what they will give priority. Some of the cases may be beyond the capacity of the G&C teachers thus needing a counsellor. Schools fail by inviting motivational speakers who are not counselors to speak to students who may be having mental issues. In schools, we also have peer counselors, who are closer to the learners and they can easily tell identify and even manage. All you have to do as a school is to identify an upright child to give direction to others. The peer counselors can escalate it to the guidance and counselling teachers." SDE 008

4.7 Effectiveness of the Well Being Therapy (WBT)

To determine the effectiveness of the Well Being Therapy, the researcher measured the depression scores and psychological wellbeing scores of the adolescents at pretest and posttest. A *t*-test was done to determine the effectiveness of these therapies. The results showed that WBT was more effective than G&C. This was attributed to the reduction of depression scores and increment in the psychological well-being scores. On depression scores, the results in table 4.10 show a significant difference in the pretest and post-test scores for both WBT and G&C group. Moreover, the mean depression scores were significantly lower at post-test for patients who received WBT (mean 13.8, SD=3.6, $p<0.001$) and G&C (Mean 21.0, SD=6.6, $p<0.001$).

As indicated in the same table, the two therapies showed significant differences in psychological well-being scores at pretest and post-test, although there was increased significant difference in the psychological well-being mean score of

pretest and post-test for the adolescents who received WBT (mean 51.3 SD =6.7 and 79.5 SD =8.2; <0.001) respectively than for patients who received G&C at pretest and post-test (mean 50; SD= 6.3 and mean 59.6 SD 8.3; p<0.001 respectively. Overall, the mean psychological well-being score was significantly greater for patients who received WBT (Mean 65.4, SD=16.0, p<0.001) than for G&C group (Mean 54.9; SD=8.7, p<0.001). Further test on focusing on only post tests showed significant negative difference between depression scores and psychological well-being, which means that when well-being increases depression decreases. The findings are as shown in the table 4.9.

Table 4.9 Psychological Well Being and Depression Scores in WBT and G&C Intervention

Intervention	**PWB score**		**Combined**	**df**	***t*-test**	**P value**	**Post test(*t*)**	**P -value**
	Pretest	**Post test**						
	Mean (SD)	**Mean (SD)**	**Mean (SD)**					
WBT	51.3(6.7)	79.5(8.2)	65.4(16.0)	91	-25.7	<0.001	16.3	<0.001
G&C	50.3(6.3)	59.6(8.3)	54.9(8.7)	91	-8.55	<0.001		
	Depression Score		**Combined**	**df**	**t-test**	**p-value**	***t*- test**	**P value**
	Pretest`	**Post test**						
	Mean (SD)	**Mean (SD)**	**Mean (SD)**					
WBT	28.7 (3.6)	13.8 (3.6)	21.3 (8.3)	91	32.3	<0.001	-9.1	<0.001
G&C	28.0 (2.7)	21.0 (6.6)	24.5 (6.2)	91	10.1	<0.001		

All the therapies were significant in managing depression. To determine the effectiveness of the Well Being Therapy however, the effect size for the difference between WBT and Guidance and counselling are shown in table 4.10. A greater proportion of adolescents not depressed (97.8%) were observed among those who underwent WBT in comparison to those who underwent guidance and counselling

(53.8%). Using Hedges *g* criteria, the effect sizes of WBT were significantly greater (overall effect size Z=2.34; p=0.02) than for G&C; indicating that WBT was more effective than G &C in managing depression. Results are presented in table 4.10.

Variable	Not depressed	Depressed	Hedges *g* (95% Cl)	Test for overall effect size
WBT	90	1	0.87(0.53-1.58)	Z=2.34; p=0.02
G &C	50	41	0.46(0.35-.71)	Z=0.36; p=0.06
Total	140	42		

Table 4.10 Effectiveness of G&C as Compared to WBT by Effect Size

Further analysis was done to determine the association between demographic characteristics and effectiveness of each therapy. A multivariate regression analysis of WBT and G&C by demographic characteristics was done and the results are as shown in the table 4.11. The effectiveness of Well Being Therapy was associated with age under 18 (OR=1.9; Cl=0.80, 3.42; p=0.06), being in form II (OR =7.5; CI=3.95-10.26, p<0.001), being Christian (OR=1.3; Cl=0.77, 1.86; p<0.001), being orphan (OR=1.7; Cl=0.89, 2.56; p<0.001), staying with parents(OR=1.7; Cl=0.89, 2.56; p<0.001), easily shares with parents (OR=2.71; Cl=1.40,5.45; p<0.001). On the other hand, only being male (OR=1.7; Cl=0.89, 2.56; p<0.001), being in boarding school (OR=1.7; Cl=0.89, 2.56; p<0.001) and being Christian was associated with effectiveness of G&C.

Table 4.11: Multivariate Regression Analysis of Socio-demographic Characteristics, WBT & G&C

	WBT		GC	
Parameter	**O.R 95%CI**	***p*-value**	**O.R 95% CI**	***p*-value**
Age				
[Under 18]	1.9 (0.80,3.42)	0.06	1.54(0.84,2.26)	0.70
Over 18 (ref)	1.00		1	
Sex				
Male	0.8(0.2.1.7)	0.04	0.36(0.20,052)	0.05
Female (ref)	1.00		1.00	
Level of Study				
Form=1	0.8(0.45-1.53)	<0.001	1.06(0.68,5.43)	0.40
Form=2	7.5(3.95-0.26)	<0.001	6.02(1.32,11,01)	0.11
Form=3(Ref)	1.00			
Religion				
Christian	1.3 (0.77,1.86)	<0.001	3.44 (1.35,4.62)	0.04
Muslim (ref)	1.00		1.00	
Residence				
Rural	0.8 (0.62-1.24)	0.79	0.81(0.46,1.53)	0.71
Urban(ref)	1.00		1.00	
Having parents				
Orphan	1.7(0.89,2.56)	0.05	0.54(0.28,1.03)	
Both parents	1.5(0.52,2.38	<0.001	0.53(0.37,1.33)	0.52
Mum only	1.3(0.64, 2.19)	0.38	0.56(0.28,1.18)	0.40
Dad only(ref)	1.00		1.00	
Ease of sharing with parents				
Easily shares	2.71(1.40,5.45)	<0.001	1.74(1.18, 2.64)	0.37
Not Easily shares	1.00		1.00	
School Type				
Boarding	2.6(1.30,5.57)	0.50	2.79(1.40,5.65)	0.07
Day and boarding	4.08(2.71,5.42)	<0.001	2.83(1.11,6,34)	0.22
Mixed day(ref)	1.00			

CHAPTER FIVE

DISCUSSION

5.0 Introduction

The discussion was based on the findings of study as per the objectives of the study. The discussion is centered on the socio-demographic characteristics of the study population, the prevalence of the depression, the risk factors for depression, the strategies used in the management of depression and the effectiveness of the WBT in the management of depression among adolescents in secondary schools in Kakamega County.

5.1 Socio-demographic Characteristics of the Respondents

Depression was significantly associated with age. The results of this study concur with different previous studies earlier studies. For instance, Nzangi's study (2022) found that 16–17-year-old had a higher prevalence of depression than those above 18 years (Nzangi *et al*., 2022). The study findings also agreed with a South African study among adolescent populations of similar ages (15-19 years) (Ajaero *et al*., 2018). Although the studies were carried out in different contexts using different screening tools but similar population, the research suggested that depression increases as adolescence peaks and therefore, more support is needed for the adolescents to cope with the changes.

The higher probability of depression among the below 17-year-old in this study is related to the social, emotional, cognitive and physical changes that begin to occur at adolescence. Also, the adolescents below 17 years are likely to be overwhelmed with transitions, both physically, and even socially, at home and school that could lead to depression. The researcher found that depression affects an individuals' cognitive

skills. The lower prevalence of depression among the adolescents above 17 years could be that they may have obtained better cognitive skills. The cognitive skills may better their functioning and therefore lower depression levels. Younger adolescents may therefore be targeted with the WBT which improves optimal functioning.

A lower prevalence of depression was found among the male adolescents. This was consistent with a cross-sectional study on prevalence of depressive symptoms among adolescents in Nairobi City County (Khasakala *et al.*, 2012). The study found that there were more girls than boys who had depression although the difference was not significant. Although the study was focusing on the association of depression with perceived maladaptive parental behavior, the socio-demographic characteristics were analyzed, revealing that more females were at risk and more efforts to manage depression needed to be put in place (Khasakhala *et al*., 2012). A previous cross-sectional study carried out in Ethiopia showed that being male reduced depressive symptoms by 1.09 units (β = -1.09, 95% CI (-0.02,0.49) as compared to female (Girma *et al*., 2019).

A longitudinal study done in US among adolescents showed that the prevalence of depression was on the increase particularly among the females (Daly, 2022). A more recent study conducted in Nairobi City County found that depression prevalence was higher among males than females (Mokaya *et al*., 2023). The difference in prevalence levels across genders may be attributed to biomedical risk factors such pubertal hormones (Bhatia & Bhatia 2007). The researcher also noted that physiological changes such as menstruation may place females at risk. The differences among gender may also be attributed to the gender roles performed away

from school. These findings suggested that more effort is to be put to bridge the gap for the females.

Results from this study reveal that the type of school relates with an increased probability for depression among adolescents. From this study, being in a boy's school is more associated with depression than being in a girls or mixed school. This finding agrees with the finding of Khasakala *et al.*, (2012) who, in his study in secondary schools in Nairobi City County established that being in boarding schools is associated to depression (Khasakala *et al*., 2012). Cultural differences may be some of the factors that led to the difference in prevalence in boys' schools. The boys in boarding schools may have lower chances of engagement in cultural activities and as well having boy/girl relationships. Furthermore, boys may be unaware of how they could express low mood and emotional challenges because of socialization. Notably, much effort may be placed on health prevention and promotion for boy child.

Although most of the adolescents in the study lived in rural areas, results on residence being a predictor of depression were insignificant. The researcher may further attribute this to the increased access to the internet by majority of the adolescents and thus exposure to similar factors. Results of this study contradict previous findings by Girma *et al*., (2019) in Ethiopia which found that living in the rural areas increased the PHQ-9A score by 0.89 ($\beta = 0.89$, 95% CI (0.13, 1.65). The findings of this study further contrast those of Ajaero's *et al*., (2018) study in South Africa. The study found that living in rural and urban areas had significance on depression among adolescents (Ajaero *et al*., 2018).

Broadly, the probability of depression differed significantly among respondents from the rural and urban areas. Khasakala's *et al.*, (2012) study in Nairobi Kenya also found that urban areas offered prevention of depression. This may be because urban areas have better recreation habits, and better academic accomplishments (Khasakala *et al*., 2012) may which increase feeling good that is protective of depression. More studies may be needed to determine whether residence is a predictor of depression among adolescents. This is because as earlier informed by the HTD theory of depression, environmental experiences were significant predictors of depression. The findings thus contrasted this particular tenet of the theory.

Despite findings showing that there were more Christians than Muslims in the study, results on religion were not statistically significant. Furthermore, the study showed that most of the schools had a sponsor. The sponsors ran religious program every week that could encourage the well-being of the adolescents. Previous findings showed that religion was important in promoting mental help in several ways. For instance, they found that religion helped adolescents acquire healthier response to stimuli by acquisition of religious morality (Amrai *et al*., 2011). The researcher found that religiosity may strengthen the adolescent's coping mechanisms thus lowering effects of stresses and as well promoting a less high-risk way of life. In this study, it was found that having a religion may have promoted interactions among the adolescents which may improve self-esteem that may increase well-being of the adolescents. The school sponsors may also be trained on the WBT so that they may incorporate the therapy into their routine school programs.

5.2 Prevalence of Adolescent Depression

The findings of the study showed that the overall depression prevalence 44.8%. This prevalence is high. The prevalence of depression in this study may be attributed to the precision and sensitivity of the KADS-11 used in this study (Brooks *et al.*, 2003). KADS-11 has also shown higher reliability and validity (Lowe *et al*., 2018) and, has also been proved adequate across genders (Mousavi *et al*., 2019). The finding may also be explained by the period of the study, which was after a return to school after a long break due to Covid-19 pandemic. The high prevalence could also be a result of the pressures of the academic calendar that had changed so significantly after the pandemic. The calendar had only a week-for rest and this may have led to stress among the adolescents for lack of time for rest.

The results of this study are almost similar to a study that entailed Kenyan secondary school adolescents of ages 13-19 years, and by use of a PHQ-9. The findings showed a depression prevalence rate of 45.9% (Osborn *et al*., 2020). The study, though conducted in schools in Nairobi City, consisting of three public secondary schools and two mixed secondary schools, the findings showed that the prevalence was high (Osborn *et al*., 2020). The findings of this study contrast a quasi-experimental study done in Homa Bay County.

The study showed that the prevalence rate of depression among the 13-18 years-old adolescents in Homa Bay County was 57.5% (Nyayieka *et al*., 2020). Although Nyayieka's *et al*., (2020) study focused on five purposively selected schools, the findings still revealed that the adolescent population is at risk. Another recent study by Nzangi *et al*., (2022) on the prevalence of depression from two selected schools

also shows that the prevalence of depression is high at 58.7%. The study used the Beck's Depression Inventory to screen for depression (Nzangi *et al*., 2022).

This study also highlights that the prevalence of depression among adolescents is increasing over time. This is because previously conducted studies in Kenya among school-going children shows in Nairobi showed that 25.7% of their respondents had symptoms of depression varying from mild to severe. The study was conducted among 14–18-year adolescents in 17 public secondary schools in Nairobi, the capital city of Kenya, consisting of a stratified sample of the schools using child depression inventory (CDI) indicated the prevalence for depression was 25.7% (Ndetei, *et al*., 2008). Another study in the subsequent years showed that the prevalence of depression among adolescents in secondary schools was 26.4% (Khasakhala *et al*., 2012).

The difference in prevalence rates of depression may be as a result of the variations in sample sizes utilized as well as the different tools in depression screening. The differences in the psycho-social, geographical as well as the environmental conditions in the various study settings may theorize varying trends of depression prevalence among the adolescents. Future studies may need to provide more interventions for adolescents with depression. For this study, the WBT was found to be one such option that should be adopted into policy to manage depression. Consequently, the G&CTs, need to use the standardized psychometric tools to routinely screen adolescents for depression.

5.3 Risk Factors for Depression Among Adolescents

Risk factors for depression in this study were grouped as either psycho-social, biomedical and, school-related risk factors. They are as discussed as: -

5.3.1 Psycho-social Risk Factors

Results showed that depression was three times, 1.5 times and 1.2 times for adolescents who had no parents, those who had single-parents i.e. mother only and father only respectively compared to students who had both parents. This finding agrees with other studies done in Ethiopia which revealed that orphans have higher scores of depressive symptoms than non-orphans (Mekdes *et al.,* 2019; Gemechu *et al.,* (2018). In both cross-sectional studies, scores for depression among orphans is high as compared to non-orphans. They found out that orphaned children were more depressed, much anxious, and hopeless about the future life.

Such depressed orphans were likely to exhibit anger feelings and have much turbulent characters compared to children with parents (Gemechu *et al.,* 2018). It is important to note that death of a family member may play a crucial role in developing depression although one's genetical characteristics, environmental influences matters (Gemechu *et al*., 2018). A study by Moeini *et al*., (2019) contrast the findings of this study. The study showed that there was a high prevalence of depression among adolescents who lived with both parents compared those who had with mothers at 16.1%, as well as those who stayed with fathers alone at 12.1% (Moeini *et al*., 2019). More efforts should be put in place to screen for depression among orphaned adolescents so that effective interventions may be tried out on orphans to investigate its effectiveness.

Findings of this study showed that adolescents whose parents were never married had nearly three times likelihood of developing depression than those whose parents were married. This is in agreement with other studies which found that children of whose parents were never married experienced depression than those with parents (Siddiqui & Sultana, 2011). The study done in Indonesia, although among college students showed that participants raised by married parents tended to have lower psychological distress than those raised by divorced or widowed parents (Siddiqui & Sultana, 2011).

Recent studies have also supported the idea that parental marital status was a predictor of depression. For instance, Kabunga and Nambozo (2021) found out that adolescents of single parents were more depressed than those whose parents were married (Kabunga & Nambozo, 2021). The finding of this study may be attributed to the fact that lack social support as well physical and economic deprivation are characteristics of single parenthood that may lead to depression.

Findings of the study revealed that adolescents who found it very difficult and those who were not sure on whether to share with parents were more likely to be depressed than those who had it very easy to talk with their parents. This finding is in line with a study by Ndetei *et al*., (2008) done in Nairobi, which revealed that the uninvolved parenting behaviour is associated with physical and emotional child negligence which contributes to depression (Ndetei *et al*., 2008). The reason for the difficulties in sharing with parents could possibly in this study by explained by the fact that at adolescence stage, the adolescents tend to shift their source of social support from parents to a romantic partner (Keijser *et al*., 2020).

The study also found that having friendship problems was a psycho-social risk factor for depression. A study conducted in the US supports the findings of this study (Szwedo *et al*., 2015). The study notes that the termination of a romantic relation is a known potential risk factor for depression (Szwedo *et al.,* 2015). An experimental study by Verhallen *et al*., (2019) concurs with this finding that the friendship problems are a risk factor for depression. The reasons for higher depression levels among adolescents with friendship problems may be that adolescents determined their self-worth through the assessment of friends. The adolescents could also be depressed because they may have felt unwanted by the opposite sex. The adolescents may also feel like one failed relationship could indicate a failure in future relationships. Likelihood of depression after a break-up may be as a result of perverted interpretations of negative feelings related to with the friendship problems.

Findings further showed that poverty was a significant predictor of depression as adolescents from poor backgrounds were three times likely to be depressed. This was because with poverty, came other challenges such as lack of basic necessities like food, clothing school requirements among others. The lack of basic needs was likely to subject the adolescents to several uncertainties which may increase depression (Ndetei *et al*., 2017). According to a study by Girma *et al*., (2021) socioeconomic factors may increase the level of depression among the adolescents (Girma *et al*., 2021). This finding is further supported by a Turkish study, with similar methodology, though different tools, which showed that children from poor backgrounds were more likely to be depressed (Yilmaz *et al*., 2021).

Access to phones predicted depression as supported by studies such as Wu *et al*., (2022). A meta-analysis conducted for a similar population revealed that although

with limited evidence, increased mobile phone usage may be associated with poorer mental health in children and adolescents (Wu *et al*., 2022). Another study done in the US among adolescents revealed that those who had access to games on their cell phone were 5.1 times more likely to develop depressive symptoms (Bernardineli *et al*., 2021). For this study, access to mobile phone led to increased social media presence which comes with other challenges.

The use social media may be related to unhealthy comparisons, repeated checking for messages, likes and approvals which could be addictive, causing depression when the same are not available. Mobile phone usage may also be associated with betting and gaming activities that may lead to depression when they lose out on the bets. These findings agree with other Kenyan findings of Koin *et al*., (2018) in Kajiado County in which the adolescents reported that phone usage did not affect their academic performance but the teachers and the key informants reported contrary findings (Koin *et al*., 2018).

Texting and sexting may also some of the reasons adolescents who had access to internet were likely to be depressed. A school-based study done in Texas shows that teens who engage in this activity were more likely to be depressed. The findings show that teens involvement in sexting was strongly linked to significantly enhanced odds of depression as well as anxiety symptoms (Chaudhary *et al*., 2017). A systematic review by Doyle *et al*., (2021) shows that sexting is a risky behaviour linked to depression (Doyle *et al*., 2021). In a qualitative study by Wahid's *et al*., (2021), it was noted that: -

> *"Adolescents are exposed to so much on social media where a lot is related to 'likes,' or other metrics associated with popularity – things like that. Some toxic group dynamics [are present in social*

> *media], so that's also a factor. And the amount of time that is spent on [social media] are contributing to worsening outcomes. Compared to traditional adolescent experiences nowadays they are exposed to so much in the world, prospects for life satisfaction, employment etc. these affect them more than before. They are almost being expected to think as adults, and think of themselves as adults, and as such there are challenges to cope."*

However, there is a fact that social media may be used to create awareness on depression signs, and as well a measure social connectivity which is a protective factor for depression (Osborn *et al*., 2020). Parents and teachers should routinely know what adolescents' access on phones. Future studies may be relevant to delve deeply into this matter. From the qualitative data analysis done in this study, the psycho-social risk factors are difficult to identify as they required the respondents to recall and at times referred us to interact with the parents. This finding concurs with a study done by Wahid *et al*., (2021) using the Delphi method. One of the panelists noted that: -

> *"Psychological risk factors are not well understood – how these develop. A lot of these risk factors co-exist, and it is difficult to determine which one is more critical, or more central. And the capacity to separate them as a result is also quite difficult...This is too broad a category – it contains a lot – lot of things are subsumed in this".*

5.3.2 Biomedical Risk Factors

The results showed that alcoholism, being HIV positive, and Anxiety, were significant predictors of depression among adolescents. The findings on HIV/AIDS were supported by a systematic review by Ayano *et al*., (2021). Precisely, the higher prevalence of depression was reported among female adolescents (32.15%) than males (25.07%). The older HIV positive adolescents of 15-19 years (37.09%) were more depressed than the 10–14-year-olds (Ayano *et al*., 2021). An earlier cross-sectional study done in Ethiopia further supported the fact that there exists a higher

prevalence of depression among the HIV-positive adolescents (Gemechu *et al*., 2018). A study in the neighbouring Uganda among a similar population (15-19 years) further supports the findings of this study. For the study in Uganda, there were higher odds of having depression among the 15–19 years old HIV positive adolescents (Kemingisha *et al*., 2019).

A study done by Larsen *et al*., (2020) among adolescent girls and young women in Western Kenya, show positive relations between depression and HIV/AIDS. The findings of depression levels were determined by the Center for Epidemiologic Studies Depression Scale (CESD-10) score ≥10. The results showed that 34% of respondents had moderate to severe depression as a result of being HIV positive (Larsen *et al*., 2020). The positive correlation being HIV positive and depression in this study may be associated with struggles of storing medications while in schools, school's personnel and friends who may spread the information, and concealing the HIV status even to closest friends.

Furthermore, the key informants indicated sometimes they faced hospitalizations over opportunistic infections. The hospital admissions and retests conducted at every visit, with the increased number of hospital workers aware of their status may make them depressed. Moreover, these findings reinforced the possibility of future studies to looking into whether the Well Being Therapy for managing depression among adolescents may have a significant positive effect on adolescents who are HIV positive. Consequently, HIV positive adolescents presenting in hospital for treatment may also be routinely screened for depression.

Adolescents who had anxiety had three times likelihood of suffering from depression than those who were not. The reason for the findings may be as a result

of similarity of the items in the tools used to measure depression and anxiety. The other reason for the comorbidity in this study could be attributed to similar etiological factors as well as negative processing of information in both disorders. This study finding was supported by a finding of Osborn *et al*., (2020) conducted among adolescents in secondary schools in Nairobi City County using a Patient Health Questionnaire-9.

Osborn *et al*., study showed that there were high levels of depression symptoms (45.9%) and anxiety symptoms (37.9%) among Kenyan students. This finding showed that when dealing with adolescents with depression in schools, school personnel should screen for anxiety symptoms, as it may be a significant risk factor. Furthermore, these findings strengthen the need for future studies that may examine whether the Well Being Therapy may have a subsequent constructive effect on adolescents with anxiety.

Findings of the study showed that having type I&II diabetes among adolescents is not a predictor of depression. This finding contrasted the finding by Kanner *et al*., (2003) which measured the association between young person's suffering from depression and diabetes on glycemic control, quality of life, among other factors. The study concluded that someone with type 1 Diabetes had significantly higher levels of depression more than the broad population (Kanner *et al*., 2003). This could be attributed to the fact that adolescents with diabetes learnt healthy activities such as exercising which may improve mood and PWB. These are protective factors for adolescent depression. Exercising also encouraged social interactions which are good for one mental health.

Findings of alcoholism showed a statistical significance as adolescents who consumed alcohol were six times likely to suffer from depression as compared to those who did not. This finding was in agreement with a study by Schick *et al*., (2022) which revealed that there was a little, but a statistically significant positive relationship was found between depression and alcoholism (Schick *et al*.,2022). These findings show that, when dealing with adolescents with the problem of alcohol use, depressive symptoms should be assessed. Conversely, adolescents with depression should be tested for alcohol use taking into consideration that depression may add to the risk of alcohol consumption. Moreover, these findings suggested the need for future studies to look into whether the WBT may be used for managing adolescents with alcoholism.

5.3.3 School-Related Risk Factors for Depression

Results of this study showed that adolescents who had trouble with the school rules and regulations were close to two times likely to suffer from depression unlike to who did not. This is because adolescents who broke schools' rules may face punishments such as caning, manual work as others are in class, and name calling on the assembly. All these would lead to embarrassment which could lead to low self-esteem which could likely cause depression. Sometimes the failure to adhere to school rules would lead to exclusion through suspension and even at times expulsion.

When the adolescents are suspended, they are likely to lose friends which could lead to loneliness that when prolonged could lead to depression. Study done in Britain among school children supports this finding (Ford *et al*., 2017). School exclusion may also increase the likelihood of school drop-out. This finding was supported by a

study done in Nakuru county. In the Nakuru study, it was found that suspensions had great negative effect on students' PWB in which the lower PWB which could lead to depression (Omulema *et al*., 2015).

Another significant risk factor for depression for adolescents in this study was having trouble in concentrating in school. Other studies have shown that depression decreases an individual's level of strength, increases chances of being fatigued and the prolonging of it could lead to depression. Depression could also reduce the capability of one's overall reasoning. All of these could influence ones' motivation in life and thus a poor school achievement (Thapar, Collishaw, Pine & Thapar, 2012). Difficulty in concentration would lead to poor academic performance which may lead in to depression.

In this study though, poor academic performance was not a predictor of depression in this study. This may be because of the timing of the study which took place during Covid-19, where the students had been away from school for some time and thus no recent examination had been done. Although statistical significance may not be causal in nature, the finding of this study contradicts other studies. For example, a study conducted among 126 learners in high schools in Homa Bay county showed a significant relationship between depression and academic performance (Nyayieka *et al*., 2020b).

A longitudinal study, although carried out in a university in the United Arabs Emirates by Awadalla *et al*., (2020) is but an example. The study showed that depression results into poor academic performance, as well as negatively impacts on facets of well-being (Awadalla *et al*., 2020). Similarly, another longitudinal study by Fransesca (2013) among school children identifies lower levels of academic

participation, poorer academic efficacy and lower grade attainment among depressed children (Fransesca, 2013). This may be so because depression may reduce one's concentration levels, lead to absenteeism and the time taken for managing depression also eats into study time (Klein *et al*., 2013).

Though not a significant predictor, the researcher was informed by an increasing number of suicide cases have also been reported after release of national examinations in Kenya, pointing to mental issues related to academic performance. Media reports in Kenya have shown a positive relation between depression and academic performance. A number of suicide cases have also been reported after release of national examinations in Kenya (Ngugi, 2020). One such case was of a form one student who committed suicide for having her geography marks displayed and mockery made out of it (Ngugi, 2020). Findings of the qualitative data from this study supported the fact that poor academic performance may lead to depression among adolescents. Another study is thus needed to confirm if indeed poor academic performance is not a predictor of depression in Kakamega County.

Bullying was not a predictor of depression in this study. The reason for the decreased bullying in secondary schools are also supported by qualitative data from this study reported that bullying has significantly reduced in secondary schools. This could be attributed to the increased punitive efforts in secondary schools for the bullies. These findings contradict other findings (Baker *et al*., 2020; Ndiege *et al*., 2020) that bullying is significantly related to depression. A qualitative study by Wahid *et al*., (2021) also notes that bullying is indeed a risk factor for depression (Wahid *et al*., 2021). Because of the contradiction of findings, more studies are needed on the same subject matter.

5.4 Strategies for identifying Depression among Adolescents

Findings show that majority of the adolescents and G&C teachers reported the use of observation of depression symptoms, as well as referrals by peers and teachers. This supports the direction given in the theoretical and conceptual framework on the key signs to check out for depression. Although the schools were keen on checking out the signs by observation, low mood, irritability, feeling worthless and hopeless and feeling anxious, having trouble concentrating and suicidal thoughts were the key indicators for depression. G&CTs, peers and school health professionals therefore need to be trained on these signs of depression and as well be trained on the psychometric tools. These tools may give a true reflection on the situation in schools.

The study findings are supported by a certain a study done in Germany. The study found that the special duty of individuals working with teenagers is to be a close observer, and to help refer the affected young person for adequate services. The study also recommends the use of screening tools for psychiatric disorders in general population. Furthermore, the study recommends attention to group-specific target areas together with direct interaction between therapists and their patients (Pfennig & Klosterkötter, 2014).

Schools are perfect environments for depression screening among adolescents especially for adolescents with raised depression symptoms. Schools should therefore embrace depression screening because they are less stigmatizing unlike the community screening. The schools also give chance to identify problems before the diagnostic criteria is met. Although schools may have knowledge barriers towards screening, the impediments to execution of depression screening in learning

institutions can be managed through policy (Sekhar *et al*., 2021). The policy method may also be customized to suit the specific needs and circumstances of the different levels of learning institutions as well as the counties. Customized policies will ensure school readiness to carry out adolescent depression screening. This may enable schools to generate a customized implementation plan. Improving access to adolescent depression screening for all students may have a positive impact on management of the condition.

From the thematic analysis of the key informant interviews, it was evident that one of the methods of identifying depression was observation specific signs such as decline in withdrawal, poor hygiene, poor academic performance, social isolation, low energy level, moods swings and suicidal attempts or even suicide. This finding is supported by a study by the Delphi technique by Wahid *et al*., (2021) showing signs manifesting depression. Although the Delphi method has no right or wrong answer, the findings help in decision making (Wahid *et al*., 2021).

Despite the fact that schools' adolescents spend much time in schools, it is worth noting that detection requires to be extended far above simple observation. Most of the students demonstrated a lack of awareness on depression measurement tools like the Patient Health Questionnaire, Generalized Anxiety Disorder Questionnaire, Hamilton Depression Rating Scale, Beck Depression Inventory, Children Depression Inventory and the Center for Epidemiological Studies Depression Scale. Few G&C teachers reported knowledge of some of the tools. Adolescents and G&C teachers need to be trained on the psychometric screening, particularly the self-reporting tools so as to improve diagnosis and management. Key informants were of the idea that there be a system initiated by teacher, then meeting with a counselor for

classification and assessment, and consequently a referral to mental health services. The lack of knowledge of the depression measuring tools in Kakamega County contrast those of a systematic review done by Das *et al*., *(*2016) which revealed that a number of the schools in the developed countries adopted several screening tools to identify mental disorders among adolescents (Das *et al*., 2016).

5.5 Strategies for Managing Depression among Adolescents

Findings showed that majority of the adolescents reported on availability of guidance and counselling sessions and availability of life skills as depression interventions in schools. Despite the usage of guidance and counseling in schools, the study found gaps as similar to those of previous studies. The challenges in the G&C ranged from ethical issues (Nyutu & Gysbers, 2007), age-gap of adolescents and teachers, in some cases the gender differences. Only 1% of the adolescents reported on availability of anti-depressant medications within the schools.

The G&CTs also reported that few schools stocked antidepressants. This is because of the use of antidepressants among minors is still an issue of debate due to indications, efficacy, the severe side effects. Questions still arise on the proper choice of drugs to be administered (Linde *et al*., 2015). An earlier meta-analysis supported that antidepressant of different kinds showed limited effectiveness in addressing adolescent depression (Tsapakis *et al*., 2008). Furthermore, legal issues in Kenya use of antidepressants still limits usage in school settings. Kessler *et al*., (2007) advises against the use of paroxetine among the youth because of their potency and safety concerns (Kessler *et al*., 2007). This could be the reasons for the limited use of antidepressants in secondary schools.

Findings also revealed that only 4% of the adolescents reported the use of IPT. PDT, CBT and WBT among other therapies were not being used in the management of depression among secondary schools in Kakamega County, Kenya. This finding is contrasted by the findings of a systematic review done by Das *et al*., (2016) which showed that quiet a number of psychotherapies are in use in various parts of the world especially in High income countries (Das *et al*., 2016). This meant that there was need for inexpensive interventions for adolescent mental health issues such as depression. WBT having been found to be self-driven, effective, and long-term may be recommended for adoption into policy since it is largely self-driven.

In Kenya, few therapies have been used. For example, an RCT conducted in Nairobi using a group intervention administered by laypersons (Osborn *et al*., 2020) focused on both depression and anxiety. The group intervention administered by lay people produced greater reductions in adolescent anxiety symptoms from baseline to 4-week follow-up, and greater improvements in academic performance. The group intervention taught the 13–18-year-old adolescents on a growth mindset, an attitude of gratitude, and value affirmation (Osborn *et al*., 2020).

This therapy was administered by lay persons unlike the current study that was administered by counseling psychologists. Another study in Kenya on school interventions was conducted for using a one-day single digit intervention by lay persons and the results proved to be effective (Venturo-Conerly *et al.*, 2022). Although there was attrition after two weeks. The gaps in these studies on the narrow scope of the interventions is a gap filled by this study. The WBT implemented in this study is broader, long-term and not focusing on the problem but on promoting the well-being of the people (Fava, 2016).

The study found limited use of other psychotherapies. CBT is one of the psychotherapies that are in limited use in Kenya. The reason for the limited usage of CBT may be linked to its short-liveliness, its focus of on the problem and need for combination with other therapies to be effective (David-Ferdon, 2008). PDT is also scarcely in use for its unstructured nature, making it difficult for therapist to establish its effectiveness. PDT takes a longer time to realize wellness thus making it expensive in the long run (Bastos *et al*., 2015).

5.6 Effectiveness of the Well Being Therapy

The purpose of this study was to determine the effectiveness of the WBT in management of depression among adolescents in secondary schools in Kakamega County-Kenya. The experimental group received the WBT while the control group received the G&C. Adolescents receiving the WBT presented significantly lower depression scores and higher psychological wellbeing scores at post-test in comparison to those in the G&C group. Findings of a *t*-test showed that WBT was more effective as attributed to the reduction of depression scores and increment in the PWB scores. The results showed a high depression score at the pretest and low depression scores at post-test in the WBT group.

This led to a conclusion that the use of WBT may increase PWB which in turn may reduce the depression scores. This is supported by Xu's *et al*., (2019) RCT using WBT among first year students of medicine in China. The study found out that scholars in the intervention group indicated greater and significant relief from depression at pretest, post-test, up-to 3-month follow up (Xu *et al*., 2019). Although this study conducted a post-test, and confirmed that the students still scored lesser for depression, a follow-up may be needed in the case of this study.

Findings of this study also showed that the PWB scores of the adolescents in the WBT group were greatly improved greatly at post-test unlike those in the G&C group. This finding is supported by that of Fava (2016), which showed that there were significant advantages WBT observed in terms of symptom reduction and PWB improvement as measured by the CID and the PWB and supported comparison to other therapies. Fava (2016) findings showed that WBT was broader, decreasing the risk of relapse in the residual phase of mood and anxiety disorders (Fava, 2016).

In addition, as reported by Ryff *et al*., (2014), PWB may serve a fundamental protective function in preventing people from prolonged and intense life stresses (Ryff *et al*., 2014). Consequently, encouraging PWB in school set ups could be expected to have essential positive impacts on increasing the adolescents' resiliency, coping mechanisms as well as their overall development. Although WBT was already found to be effective in the different setting, WBT has scarcely been used in Africa for managing depression and particularly among adolescents. This study fills this knowledge gap.

These findings are supported by those of Ruini *et al*., (2009) who compared the WBT to an attention placebo intervention among 227 high school students with an average age of 14.4 years. The two groups had six sessions of two hours each. This is unlike our study this had a 60 minutes session for 8 sessions. The implication is that WBT may work as a stand-alone in managing depression if implemented for more sessions. The findings showed that the WBT had a remarkable effect in enhancing PWB and decreasing distress in contrast to the attention-placebo group (Ruini *et al*., 2009).

Effectiveness of the WBT in this study is also supported by a pilot study by Ruini *et al*., (2006) in a school environment on 111 middle-school learners. The students were randomly placed CBT and others to the WBT. The findings of the two interventions led to a comparable transformation in the symptoms of depression and promotion of PWB. The study concluded that WBT is as good as CBT (Ruini *et al.*, 2006). Although conducted among adolescents in different setting, the WBT group proved effective. More studies in different learning settings support our finding.

The results of a study among university students showed that learners in WBT group had significant reduction of the depressive symptoms than those in the CBT group (Moeenizadeh & Salagame, 2010). Although the study uses a small sample of 40 students in a university, the findings informed the need to try out WBT in secondary schools in different settings such as the LMICs, a gap this study fills.

The WBT showed a larger effect size of 0.87 than the G&C that had a medium effect. The interpretation of the finding was guided by the golden rule of Cohen (1988) that when an intervention has an effect size of 0.2, then the effect is small, 0.4 is medium and when its beyond 0.8, it is larger, leading to the conclusion that the WBT was effective (Cohen, 1969). From previous studies conducted and this study, the researcher rejected the null hypotheses. Similarly, in a study by Fava *et al*., (1998) who examined the efficacy of WBT in patients suffering from recurrent major depression. Their outcomes recommended that the level and severity of depressive symptoms in their patients greatly decreased after treatment with WBT. After a 6-year follow-up, the findings still proved the results of the post-test analyses (Fava *et al*., 1998). This implied that WBT reduces depression and increases PWB thus may be adopted into policy documents as a management strategy for depression.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

On the socio-demographic characteristics, the study concluded that the mean age for adolescents in secondary schools 17 years. Adolescents below 17 years were more likely to be depressed than those above 17 years. Adolescents in form one and two were more likely to be depressed than those in form three. Younger adolescents may therefore be targeted with the WBT which improves optimal functioning. Although gender was not a significant risk factor, adolescents in boys' schools had a higher likelihood of depression than those in mixed and in girls' schools. Programs may therefore target adolescent in boy schools as they were found to be more at risk.

Religion was not predictors of depression in this study. Despite this, schools with sponsors had lower levels of depression. Religious leaders may also be targeted with management strategies so that they may impart them to the adolescents.

The first objective on prevalence of depression established a high prevalence rate of depression among adolescents at 44.8%. This was considered high as compared to other studies done in other counties in Kenya. The difference in prevalence rates of depression may be as a result of the variations in sample sizes utilized, the different tools in depression screening, the differences in the psycho-social, geographical as well as the environmental conditions. The study used the KADS-11 to establish the prevalence. The key signs that were identified with the highest scores as per the KADS-11 were: - low mood, irritability, feeling anxious, feeling worthless, feeling tired, all time worry and trouble concentrating in school. These may need to be considered as key signs for major depression among adolescents.

The second objective focused on the risk factors for depression among adolescents. The study concluded that psychological risk factors to look out for were orphanhood, poverty, and coming from single parent families. Socio-economic empowerment programs may be targeted for such families. Parents and guardians may also need to be educated on the risk factors for depression among adolescents since some are parent-related. Accession to phones predicted depression as it was linked to unhealthy comparisons, repeated checking for messages, likes and approvals, gaming and betting that could lead to depression. Parents and guardians may need to provide guidance on internet usage to adolescents. Internet may also be adopted in created awareness on depression signs and even create avenues for management through social support groups.

Biomedical risk factors identified by this study were having HIV and Anxiety disorder. Special attention may also be given to such adolescents with these medical conditions. Alcohol consumption was significant and thus need to screen for depression among on alcoholic adolescents and depressed ones. School related risk factors identified in this study were trouble with school rules which could lead to suspension and even expulsion. Teachers and guardians may need awareness on appropriate punitive measures for adolescents. Adolescents who had trouble concentrating in schools were likely to be depressed. Bullying was not a predictor of depression in this study.

The third objective was on the strategies for depression detection and management among adolescents in secondary schools in Kakamega County. The study noted that observation of depression signs by peers and teachers as well as referrals were being used. This study thus concludes that there is a need for screening using psychometric

tests. Students, teachers, school sponsors and guardians may also need to be trained depression signs. On depression management, the study concluded that most schools do not stock antidepressants and rely on guidance and counseling as well as life skills as the methods for depression management. Most teachers are unaware on the psychotherapies thus the need to train them on them.

On the last objective, the WBT and G&C all reduced the depression levels but WBT reduced depression to a greater extent and with a larger effect. WBT and G&C all increased the PWB of the adolescent but the effect of WBT was greater. The study therefore rejected the two null hypotheses. With the increasing number of students with depression in secondary schools, there is a need for cost-effective ways of detection, and management of adolescent depression in certain environments and in LMICS such as Kenya. This is because of the scarcity of resources and inadequate budgetary allocation for mental health issues in these countries. It is therefore very essential that we focus on shaping the optimal use of Well Being Therapy, enhancing the identification and detection of adolescent depressive disorders. This may help reduce depressive symptoms, better the academic results as well as the psycho-social outcomes in adolescents.

6.2 Recommendations

6.2.1 Recommendations for Action

From the first objective, the findings show that the prevalence of depression is high among adolescents in secondary schools. This calls for training of parents and guardians of depression symptoms and use of screening tools for accuracy of diagnosis. Depression screening may also be targeted for adolescents within communities and in other counties.

From the second objective on the risk factors, having HIV, anxiety and alcohol consumption were significant. Special programs may therefore target these groups. The researcher recommends frequent screening of depression among adolescents with the diabetes, respiratory diseases for detection and action despite them being insignificant.

The researcher also recommends that social support programs may target orphans, adolescents from lower social classes and those from single parents. Students and school social support groups may be trained on social support for each other. From the third objective, the current study proposes that adolescent health workers and policy makers may recognize the crucial function school personnel such as the G&CTs, play in adolescent depression detection and management. This is because they spend much time with the adolescents and serve a course in their lives. The study found that most adolescents and G&C teachers are not aware of the depression signs and screening tools available. The study therefore recommends that the Ministry of Education may include standardized depression measuring tools such as the KADS-11 into routine care testing of students.

It was also evident that most schools are not using psychotherapies to manage depression among adolescents in secondary schools because they are not aware of them. The study therefore recommends that the Ministry of Education should include a policy statement on the use of psychotherapies such as WBT in depression management among adolescents. G&C teachers and adolescent may be trained self-driven therapies such as the WBT so as to reduce on the time they take on managing adolescents.

6.2.2 Recommendations for Further Research

From the findings of the study, the following recommendations for research are made:

i. From the first objective of the study, prevalence of depression was high depending of timing of the study, and the methodology. There is need for a longitudinal study to determine changes in the prevalence of depression among adolescents in secondary schools. There is need for studies on prevalence of depression in schools in other counties for comparisons and conclusions.

ii. Majority of findings on biomedical risk factors were insignificant predictors for depression. A longitudinal study on the causal linkages between biomedical risk factors and depression among adolescents may be conducted.

iii. Since the findings revealed that the guidance and counseling is the main strategy for managing depression, the study found WBT was more effective within schools than G&C. There is need for research on effectiveness of WBT in schools, other counties, and other adolescent age brackets so as to support its inclusion into relevant policies as an effective strategy.

iv. Since WBT was found to be effective in managing depression among adolescents, there is need for a study on the cost effectiveness of the WBT among adolescents in secondary schools

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APPENDICES

Appendix I: Informed Consent for Pretest

Title: Effectiveness of Well Being Therapy for Depression among Adolescents in Secondary Schools in Kakamega County, Kenya.

My name is Grace Buluma Bakesia. I am a student of Doctor of Philosophy in Public Health at the Masinde Muliro University of Science and Technology. I am carrying out a study on Effectiveness of the Well Being Therapy in management of depression among adolescents in secondary schools in Kakamega County. If you agree to participate in this study by signing in the blank space provided below, you will be required to fill KADS-11 and Socio-demographic questionnaires. Filling the questionnaires will take you one hour.

Risks: No samples will be drawn from you for any tests.

Confidentiality: You have the absolute right to confidentiality. The researcher will always act so as to protect your privacy even if you allowed me in writing to share information about you. You may direct the researcher to share information with whomever you chose, and you can change your mind and revoke that permission at any time. I will also insure the confidentiality of all electronic transmission of information about you.

Complaints: If any of your concerns will not be addressed, you can complain to 0704539207.

I voluntarily agree to my student's participation in this research study:

	Yes	**No**
I agree to have my child undergo depression testing:	Yes	No
I agree to provide contact information for follow-up:	Yes	No

Parent/Guardian signature /Thumb stamp: **Date**

Researcher's Statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given his/her consent.

Printed Name: _____ **Date**_____ **Signature**: _____
Role in the study: _____
(i.e., study staff who explained informed consent form.)

Signature: _____ **Date:** _____

Appendix II: Assent for Pretest

Adolescent Assent Form (15-17years)

Title: Effectiveness of Well Being Therapy for Depression among Adolescents in Secondary Schools in Kakamega County, Kenya.

My name is Grace Buluma Bakesia. I am a student of Doctor of Philosophy in Public Health at the Masinde Muliro University of Science and Technology. I am carrying out a study on Effectiveness of the Well Being Therapy in management of depression among adolescents in secondary schools in Kakamega County. Ethical permission has been granted to undertake this study by the Masinde Muliro University of Science and Technology (MMU/IERC/192/2021). This research study is a way to learn more about people. At least 448 children will be participating in this research study with you.

If you decide that you want to be part of this study, you will be asked to sign in the blank space provided below, be required to fill KADS-11 and Socio-demographic questionnaires. Filling the questionnaires will take you one hour.

There are some things about this study you should know. You will fill two online questionnaires provided by the researcher and the scores recorded. The researcher will be with you to ask questions for the one hour. Some information asked of you may be sensitive but will be kept confidential by the researcher.

Not everyone who takes part in this study will benefit. When we are finished with this study, we will write a report about what was learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin,

that's okay too. Your teachers know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____ _____

(Signature/Thumb stamp) (Date)

Appendix III Informed Consent for Therapies

Title: Effectiveness of Well Being Therapy for Depression among Adolescents in Secondary Schools in Kakamega County, Kenya.

My name is Grace Buluma Bakesia. I am a student of Doctor of Philosophy in Public Health at the Masinde Muliro University of Science and Technology. I am carrying out a study on Effectiveness of the Well Being Therapy in management of depression among adolescents in secondary schools in Kakamega County. If you agree to participate in this study by signing in the blank space provided below, the therapist will take you through therapy for 8-weeks and you will be filling in the diary as you will be instructed. The therapist is a qualified counselling psychologist with professional experience. The therapy will take up-to one hour and at the end, your will fill the PWB tool and KADS-11. There will be no costs for you to incur in the study. The findings of the study will be used for academic purposes only.

Confidentiality: You have the absolute right to confidentiality. The researcher will always act so as to protect your privacy even if you allowed me in writing to share information about you. You may direct the researcher to share information with whomever you chose, and you can change your mind and revoke that permission at any time. The therapy session will be between you and the therapist alone, who alone will also have access to your diary. I will also ensure the confidentiality of all electronic transmission of information about you.

Complaints: If you're unhappy with what will be happening in the therapy, you may talk about it with the researcher so that they can respond to your concerns. Such criticism will be taken seriously. If any of your concerns will not be addressed, you can complain to 0704539207.

Statement of Consent for Adolescents Above 18-Years

I, _____, want to be in this research study.

_____ _____

(Signature/Thumb stamp) (Date)

Appendix IV: Assent for Therapies (15-17 years)

Title: Effectiveness of Well Being Therapy for Depression among Adolescents in Secondary Schools in Kakamega County, Kenya.

My name is Grace Buluma Bakesia. I am a student of Doctor of Philosophy in Public Health at the Masinde Muliro University of Science and Technology. I am carrying out a study on Effectiveness of the Well Being Therapy in management of depression among adolescents in secondary schools in Kakamega County. If you agree to participate in this study by signing in the blank space provided below, the therapist will take you through therapy for 8-weeks and you will be filling in the diary as you will be instructed.
The therapist is a qualified counselling psychologist with professional experience. The therapy will take up-to one hour and at the end, your will fill the PWB tool and KADS-11. There will be no costs for you to incur in the study. The findings of the study will be used for academic purposes only.

Confidentiality: You have the absolute right to confidentiality. The researcher will always act so as to protect your privacy even if you allowed me in writing to share information about you. You may direct the researcher to share information with whomever you chose, and you can change your mind and revoke that permission at any time. The therapy session will be between you and the therapist alone, who alone will also have access to your diary. I will also ensure the confidentiality of all electronic transmission of information about you.

Complaints: If you're unhappy with what will be happening in the therapy, you may talk about it with the researcher so that they can respond to your concerns. Such criticism will be taken seriously. If any of your concerns will not be addressed, you can complain to 0704539207.
If you do not want to be in this therapy, we will tell you what other kinds of treatments there are for you.
I, _____, want to participate in this therapy.

_____ _____

(Signature/Thumb stamp) (Date)

Appendix V: Kutcher Adolescent Depression Scale: KADS-11

NAME: _____

OVERVIEW

The Kutcher Adolescent Depression Scale (KADS) is a **self-report** scale specifically designed to diagnosis and assesses the severity of adolescent depression. This study adopted the 11-items scale.

SCORING INTERPRETATION

There are no validated diagnostic categories associated with particular ranges of scores. Higher scores indicating worsening depression, lower scores suggesting possible improvement.

Please indicate by using a tick **(√)** inside one of the boxes your response on a scale. Over the Last Week, How Have You Been "On Average" Or "Usually" Regarding the Following Items:

No	**Item**	**Hardly Ever=1**	**Much of the Time=2**	**Most of the Time=3**	**All of the Time=4**
1	Low mood, sadness, feeling blah or down, depressed, just can't be bothered.				
2	Irritable, losing your temper easily, feeling pissed off, losing it.				
3	Sleep Difficulties - different from your usual (over the years before you got sick): trouble Falling asleep, lying awake in bed.				
4	Feeling Decreased Interest In: hanging out with friends; being with your best friend; being with your partner / boyfriend / girlfriend; going out of the house; doing school work or work; doing hobbies or sports or recreation.				
5	Feelings of worthlessness, hopelessness, letting people down, not being a good person.				
6	Feeling tired, feeling fatigued, low in energy, hard to get motivated, have to push to get things done, want to rest or lie down a lot.				
7	Trouble concentrating, can't keep your mind on school work or work, daydreaming when you should be working, hard to focus when reading, getting "bored" with work or school.				
8	Feeling that life is not very much fun, not feeling good when usually (before getting sick) would feel good, not getting as much pleasure from fun things as usual (before getting sick).				
9	Feeling worried, nervous, panicky, tense, keyed up, anxious.				
10	Physical feelings of worry like: headaches, butterflies, nausea, tingling, restlessness, Diarrhoea, shakes or tremors.				
11	Thoughts, plans or actions about suicide or self-harm.				
Total score					**44**

Appendix VI: Socio-Demographic Questionnaire

Instructions

Please indicate your answers in the blank spaces by ticking (√) in the bracket and fill the spaces as required.

Pseudo-Name …… Date./……/……

Name of school ……

What day, month and year were you born? day **()** month **( )** Year **( )**

How old were you at your last birthday? (Check with the above)

The gender of the respondent Male ( ) Female ( )

Form 1 ( ) Form 2 ( ) Form 3 ( )

Is the school you attend a? government ( ) private institution ( )

Is it run by a particular religion or religious group? Yes ( ) No ( )

Is the school you are attending a? Boys boarding ( ) girls boarding ( ) Mixed day and boarding ( ) Mixed Day ( ) Girls day and boarding ( ) Boys Day and Boarding ( )

What is your Religion? Christian ( ) Muslim ( ) Hindu ( ) Budhi ( ) Jew ( ) Other ( )

How often do you usually attend religious services? Every day ( ) once a week ( ) once a month ( ) once a year ( ) less than once a year ( ) never ( )

. **Where is your Residence** Urban ( ) Rural ( )

. **Do you have Parents?** Both mother & Father ( ) only a Mother ( ) only a father( ) Don't know ( )

. **Do you stay in the same household with them**? Yes ( ) No ( )

. **Do you find it difficult or easy to talk with your parents about things that are important to you?** Very easy ( ) Easy ( ) Average ( ) Difficult ( ) Very difficult ( )

. **Parental marital status single** Never married ( ) married( ) Single ( ) Separated ( )

. **Perceived parental socio-economic status** poor ( ) Moderate ( ) Rich ( )

. **Do you have siblings?** yes ( ) no ( )

. **Any friendship problems?** No ( ) Yes ( )

. **Do you at times feel loneliness?** No ( ) Yes ( )

. **Do you have challenges sharing in the family's social activities** No ( ) Yes ( )

. **Would you say you experience family support** No ( ) Yes ( )

. **Have you been diagnosed with any of form of depression in the past?** No ( )Yes ( )

SECTION B: Depression Risk Factors

22. (a) **Have you ever been diagnosed with any other psychological illness?**

    Yes ( ) No ( )

    (b) If yes, which of the following?

    Oppositional defiant disorder (ODD) ( )
    Obsessive Compulsive Disorder ( )
    Attention deficit hyperactivity disorder ( )
    Anxiety ( )
    Bipolar disorder ( )
    Psychosis ( )
    Eating disorders ( )

23. **A person with depression may have other medical conditions as well. Have ever been treated any of these medical conditions? (Tick all that apply.)**

    Heart Disease ( )
    Alcoholism ( )
    Diabetes Type 1 ( )
    Diabetes Type 2 ( )
    Kidney disease ( )
    HIV positive ( )
    Respiratory disease ( )
    Eating disorders ( )

24. **Are you having difficulty in concentrating in school?** Yes ( ) No ( )

25. **Have you been in trouble with the school laws and regulations in the last** 12 months? Yes ( ) No ( )

26. **Have you scored low grades in exams recently**? Yes ( ) No ( )

27. **How do you evaluate your past school life Good** ( ) Bad ( ) Average ( )

28. **Have any of these stressful events happened to you during the last 12 months? (Tick all that apply.)**

    Loss of a girl/boyfriend ( )
    Family member/ loved one ( )
    Separation from girl/boyfriend ( )
    A serious illness or surgery ( )

29. **How often have you been bullied at school in the past couple of months?**

    I haven't been bullied at school in the past couple of months ( )
    It has only happened once or twice ( )
    2 or 3 times a month ( )
    About once a week ( )
    Several times a week ( )

30. **What form of bullying have you experienced in school in the past couple of months in one or more of the following ways? Please tick all that apply**
    I was called mean names, was made fun of, or teased in a hurtful way ( )
    Other students left me out of things on purpose, excluded me from their group of friends, or completely ignored me ( )
    I was hit, kicked, pushed, shoved around, or locked indoors ( )
    Other students spread false rumors about me and tried to make others dislike me ( )
    I had money or other things taken away from me or damaged ( )
    I was threatened or forced to do things I didn't want to do ( )
    I was bullied with mean names, comments, or gestures with a sexual meaning ( )

SECTION C: STRATEGIES TO IDENTIFY DEPRESSION

31. Which of the following is your school implementing to screen for depression among students? Tick all that apply
    Observation by nurses ( )
    Referrals by peers & teachers ( )
    Patient Health Questionnaire ( )
    Generalized Anxiety Disorder questionnaire ( )
    Hamilton Depression Rating Scale( )
    Beck Depression Inventory ( )
    Children depression inventory ( )
    Center for Epidemiological Studies Depression Scale ( )
    Kutcher adolescents depression scale ( )

SECTION D: STRATEGIES TO MANAGE DEPRESSION

32. **Which of the following is your school implementing to manage depression among students? Tick all that apply**
    Guidance and Counselling ( )
    Life skills ( )
    Antidepressant medications ( )
    Supportive Counselling ( )
    Interpersonal therapy ( )
    Psychodynamic therapy ( )
    Cognitive behavioral therapy ( )
    Wellbeing Therapy ( )

THANK YOU FOR YOUR RESPONSES

Appendix VII: Psychological Well Being Questionnaire (18 items)

Instructions

Please indicate your answers in the blank spaces by ticking (√) in the space provided as required. Psychological Well-being Answer Format**:** 1 = strongly agree; 2 = somewhat agree; 3 = a little agree; 4 = neither agree or disagree; 5 = a little disagree; 6 = somewhat disagree; 7 = strongly disagree.

Scoring:

The Autonomy sub-scale items are question 15, 17, and 18.

The Environmental Mastery sub-scale items are question 4, 8, and 9.

The Personal Growth sub-scale items are question 11, 12, and 14.

The Positive Relations with sub-scale items are question 6, 13, and 16.

The Purpose in Life sub-scale items are question 3, 7, and 10.

The Self-Acceptance sub-scale items are question 1, 2, and 5.

Questions 1, 2, 3, 8, 9, 11, 12, 13, 17, and 18 should be reverse-scored.

Reverse-scored items are worded in the opposite direction of what the scale is measuring. The formula for reverse-scoring an item is:

((Number of scale points) + 1) - (Respondent's answer)

For example, question 1 is a 7-point scale. If a respondent answered *3* on question 1, you would re-code their answer as: (7 + 1) - 3 = 5.

In other words, you would enter a 5 for this respondents' answer to question 1.

To calculate sub-scale scores for each participant, sum respondents' answers to each sub scale's items. Higher scores mean higher levels of psychological well-being.

Instructions: tick one response below each statement to indicate how much you agree or disagree in the box.

Item	1	2	3	4	5	6	7
1. “I like most parts of my personality.”							
2. “When I look at the story of my life, I am pleased with how things have turned out so							
far.”							
3. “Some people wander aimlessly through life, but I am not one of them.”							
4. “The demands of everyday life often get me down.”							
5. “In many ways I feel disappointed about my achievements in life.”							
6. “Maintaining close relationships has been difficult and frustrating for me.”							
7. “I live life one day at a time and don't really think about the future.”							
8. “In general, I feel I am in charge of the situation in which I live.”							
9. “I am good at managing the responsibilities of daily life.”							
10. “I sometimes feel as if I've done all there is to do in life.”							
11. “For me, life has been a continuous process of learning, changing, and growth.”							
12. “I think it is important to have new experiences that challenge how I think about myself and the world.”							
13. “People would describe me as a giving person, willing to share my time with others.”							
14. “I gave up trying to make big improvements or changes in my life a long time ago”							
15. “I tend to be influenced by people with strong opinions”							
16. “I have not experienced many warm and trusting relationships with others.”							
17. “I have confidence in my own opinions, even if they are different from the way most							
other people think.”							
18. “I judge myself by what I think is important, not by the values of what others think is							
important.”							

Thank You for Your Responses

Appendix VIII: Questionnaire for G&C Teachers

Instructions.

Please tick (√) and fill your opinion in the spaces on statements below.

Pseudo-Name …… Date: …..... /……/……

Name of school

……

Section A: Socio-demographic characteristics

1. **Age** 25 -30 years ( ) 31 -35years ( ) 37- 40years ( ) 41-45 years Above years ( )
2.Gender Male ( ) Female ( )
3.Religion Christian ( ) Muslim ( ) Hindu ( ) Budhi ( ) Other ( )
4.Residence Urban ( ) Peri-urban ( ) Rural ( )

5.What is you highest Level of schooling you completed? Diploma ( ) Degree ( ) technical training ( ) teaching training college ( ) Postgraduate diploma ( ) Masters ( ) PhD ( )

Section B: Depression Risk Factors

6. Indicate by placing a tick (√) in the boxes the likelihood of the following factors triggering depression

Risk factor	All of the time	Not at all
Age		
Sex		
Medical conditions		
Drug and Substance Abuse		
Parental marital status		
Adverse childhood experiences		
Poverty		
Bullying and cyber-bullying		
Poor academic performance		

Section C: Strategies to Identify Depression among Adolescents

7. Which of the following is your school likely implementing to screen for depression among students? Tick **(√)** all that apply

	All of the Time	Not at all
Observation by teachers, nurses, teachers		
Referral by peers		
Patient Health Questionnaire		
Generalized Anxiety Disorder questionnaire		
Hamilton Depression Rating Scale		
Beck Depression Inventory		
Children depression Inventory		
Strengths and Difficulties Questionnaire		
Center for Epidemiological Studies Depression Scale		
Kutcher Adolescents' depression scale		

Section D: Strategies to Manage Depression among Adolescents

8. Is your school likely implementing the following strategies to manage depression among students?

	All of the Time	Not at all
Guidance and Counselling		
Life skills		
Anti-depressant medications		
Interpersonal therapy		
Psychodynamic therapy		
Cognitive behavior Therapy		
Well Being therapy		
None		

Thank You For Your Responses

Appendix IX: Key Informant Interview Guide for SMOs and SDEs

Instructions.

Please record the interview sessions for transcription.

1) What is your understanding of the term depression (probe for how it manifests signs & symptoms)?

2) What are the risk factors of depression among adolescents in secondary schools (probe for specific risks within the county)?

3) What measures are in place to identify depression (probe for among students)?

4) What other measures do you think should be put in place to identify depression among school-going adolescents? (Probe for observation, referrals from fellow students, identification by school health-worker and specifically within the county)

5) Which measures have been put in place to manage depression among school-going adolescents? (Probe for G&C, life-skills, Medications & Psychotherapies such as WBT)

6) What other measures do you think should be put in place to manage depression among school-going adolescents?

Thank you for your Responses

Appendix X: Well-being Therapy Protocol (adopted)

Week	Session Topic	Session Objective	Techniques used
1.	Psychological factors	- PWB and its dimensions -Importance of self-monitoring well-being	-Report in a structured diary the circumstances surrounding periods of experiencing well-being, rated on a 0–100 scale
2.	Optimal experiences	-Identifying and engaging in optimal experiences and pleasant activities to promote well-being -Identifying thoughts/beliefs impeding well-being	-Identify 'well-being moments' and report them in diary, -Identify activities or situations that promoted PWB and share with the therapist, -Identify thoughts and beliefs leading to premature interruption of well-being -Identify and note irrational or automatic thoughts related to dimensions of PWB
3.	Environmental mastery	-help adolescents acquire: - - mastery and competence -effective use of opportunities - ability to create personal contexts suitable to personal needs and values	-Checking the obstacles -Evaluating and learning
4.	Personal growth	--help adolescents acquire: - feeling of continued development -growing and expanding - improvement in self and behavior over time	-Identify, record, and report to the therapist the inconvenient events and failures of your life that made you grow and made you stronger -During the following week, think about the positive changes that have occurred and report in the diary and share at the next session
5.	Purpose in life	-help adolescents develop: -Goals -Hope -Passion	-Use optimistic explanatory style and replace pessimistic thoughts with optimistic thoughts
6.	Autonomy	--Meant to help adolescents develop: - ability to resist to social pressures -self-determination - evaluation of self by personal standards	Locus of control technique for daily life: -During the next week, report on one good thing that has occurred because of personal efforts as opposed to chance or luck -Prepare a statement illustrating how your behaviours are within your control, not chance or external factors
7.	Self-acceptance	Meant to help adolescents develop: - positive attitude toward self - acceptance of good and bad qualities - positive feelings about past life	-Self-esteem technique for daily life: -Choosing self-compassion instead of self-criticism in challenging situations in daily life - Practice mindfulness to recognize thoughts about inferiority due to complications of depression and learn to challenge these thoughts
8.	Positive relations	Help adolescents to develop: - warm and trusting relationships -strong Empathy - understanding of give and take of human relationships	-Gratitude technique for daily life: Record 3–5 things for which you are grateful. -Complete a gratitude letter to your therapist for their care of you and deliver it to them or read it for them

Instruction for the Counseling Psychologist for the sessions of the second session of WBT

Stage 1. How to help the adolescent in Identifying Automatic Negative Thoughts (ANTS)?

The types of automatic thoughts we have may impact how we feel, as well as our mental well-being. Automatic Negative Thoughts, or ANTS, can guide our behaviour without our realizing, and can be hard to control. Becoming aware of your ANTS and replacing them with more adaptive, rational thoughts is an effective way to enhance your mood, health, and overall quality of life.

Challenging ANTS

ANTS are rarely based in fact, so questioning them can be a useful way to deal with them when you notice them popping up.

Use these Challenge Questions on the adolescents on that particular component to confront their ANTS as they occur, so that you can take control and begin replacing them with healthier thoughts.

1. Is there another possible way to view this situation or person?
2. Are there any facts to back up an alternative explanation?
3. If my ANT is in fact true, what would be the worst that could happen?
4. How might I deal with things if that happened?

STAGE 2. How to help the adolescent develop Positive Replacement Thoughts?

Taking back control of our thoughts allows us to change how we feel, so that we can improve our mood. Becoming more aware of our self-critical or negative thoughts is the first step in building that self-awareness. The worksheet below is designed to help you identify the positive on any of the components of the WBT in events and people, then make a habit out of doing so.

Instructions: Assist the adolescent do the following.

Write any Automatic Negative Thoughts that you can think of in the left column.

Next, consider each in turn and see if you can challenge it with a Positive Replacement Thought in the right-hand column. This exercise has no time limit. To get better at finding the positive in situations and people, you may want to set aside

some quiet time each day or week to turn some ANTS into Positive Replacement Thoughts.

Automatic Negative Thought	Positive Replacement Thought

Questions for Challenging Thoughts for the adolescents

Instructions

Keep this list in your diary journal.

At the bottom of the page, there is a space for writing down any of your own questions.

Challenging Thoughts

1. What facts support this thought?
2. What existing evidence contradicts it?
3. What would the worst possible outcome be, if this thought were true?
4. Am I using a past experience to over-generalize?
5. Is there any way I might view this in a positive way?
6. What are some ways I've dealt with this scenario before?
7. What advice would my therapist give about this situation?
8. What am I ready to accept about this event or person?
9. Are my thoughts helping me deal with this scenario? Or are they aggravating the situation?
10. Can I genuinely control this?
11. Besides Me, what else might be affecting this situation?
12. Am I using "I must," "I have to," or "I should" thinking here? Is it truly necessary?
13. What advice would I give a friend in this scenario?

Your Questions

1. ……

2. ……

3. ……

Stage 3. How to help the adolescents in Cognitive Restructuring?

This section aims to help the adolescents to challenge irrational or illogical thoughts on the various component of the well-being therapy.

The worksheet below aims to help us capture one or two of these thoughts and analyze them.

1. The first bubble to be filled out is "**What I'm Thinking.**" This is where adolescents write down a specific thought; usually one they suspect is destructive or irrational.

2. Next, **write down the supporting facts for and against this thought**. What proof is there that this thought is accurate?

3. They can then **make a judgement on this thought**, specifically whether it is based on evidence or opinion. Once adolescents have explored the objective support, they will fill the mind map as shown in the next page

4. Another bubble invites adolescents to consider whether they could be misinterpreting the evidence or making any unverified assumptions.

5. Then, whether other people might have different perspectives on the same situation, and what those perspectives might be.

4. Next, ask yourself whether you are looking at all the relevant facts or just those that back up the belief you already hold. Try to be as objective as possible.

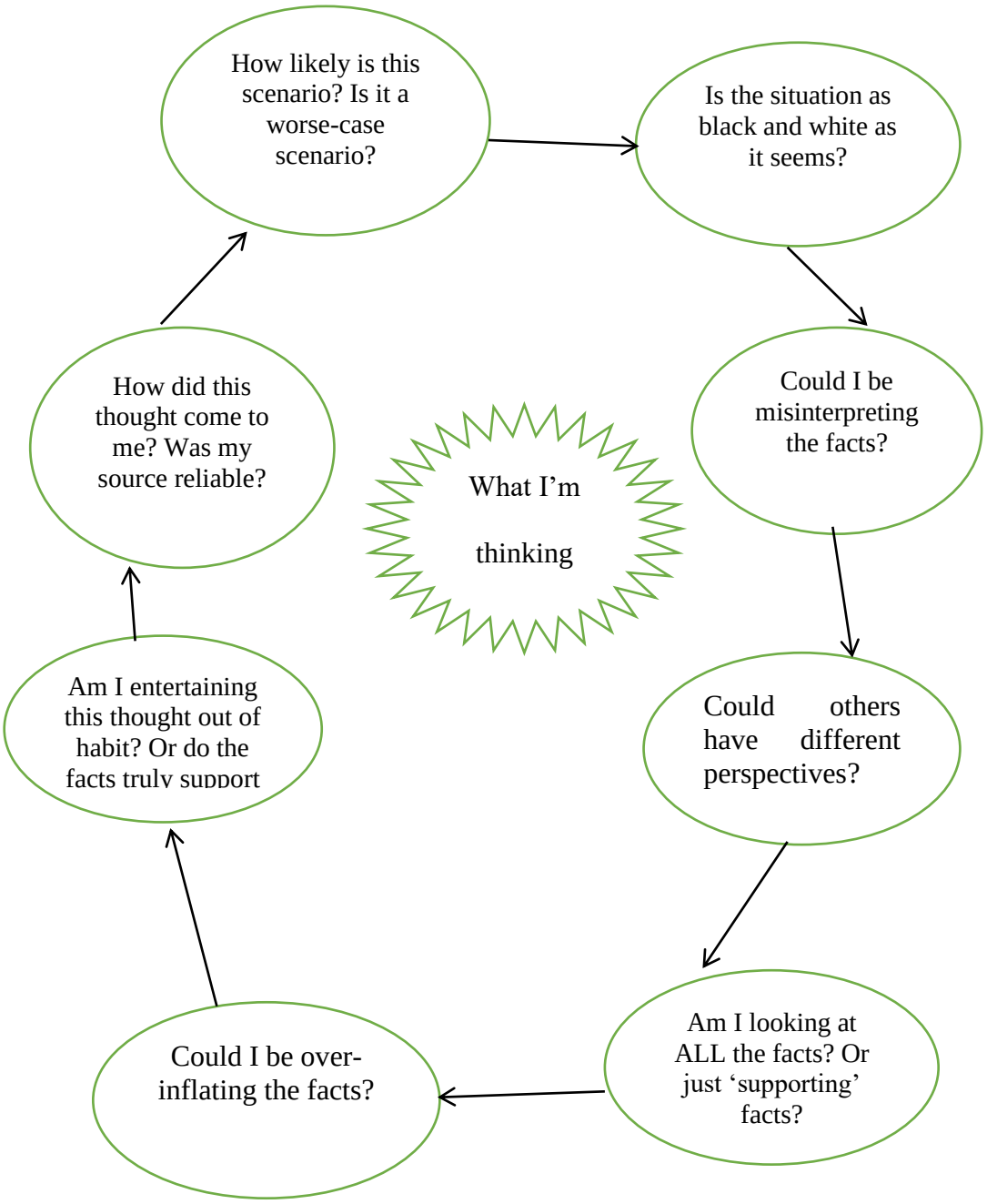
5. The next bubble asks you whether your thought may an over-inflating the reality. Some negative thoughts are based in truth but extended past their logical boundaries.

6. Next, you are instructed to consider whether you are entertaining this negative thought out of habit or because the facts truly support it.

7. Once you have decided whether the facts support this thought, you are encouraged to think about how this thought came to you. Was it passed on from someone else? If so, are they a reliable source for truth?

8. Finally, complete the worksheet by identifying how likely the scenario you're thought brings up actually is, and whether it is the worst-case scenario.

Cognitive Restructuring continuation on the negative thought



Disputing Irrational Beliefs

Beliefs and Thoughts have an impact on how you feel and how you feel influences what you choose to do.

If the thoughts are irrational, they can trigger, amplify and maintain uncomfortable emotions.

Beliefs → Thoughts → Feelings → Experiences

Rational beliefs distinguish between "wants" and "needs". They are based on facts, help protect us from probably harm, help us achieve short term and long-term goals, help us avoid significant conflict with other people and help us feel the emotions we want to feel. It is not the event, but rather it is our **interpretation** of the event that causes our emotional reaction.

Help the adolescents in Disputing Irrational Beliefs (DIBs) by asking the following questions:

1. Can I rationally support this belief?
2. Who supports this idea and what is their authority?
3. What evidence exists of the falseness of this belief?
4. Are there exceptions?
5. What are the worst things that could actually happen if I don't get what I think I want?
6. What good things could I make happen if I don't get what I think I want?

Challenging Questions

The following are a list irrational beliefs and challenging questions. These beliefs will lead to thoughts that support feeling mad, sad, angry, and hopeless, etc. The challenging questions will help in stopping these irrational beliefs in their tracks.

Common irrational beliefs:

1. I am only as good as what I achieve.
2. If he/she doesn't love me then I'm worthless.
3. Other people should follow the rules I know to be right.
4. It's not okay to have this feeling. I should just be happy.
5. The problems in this relationship are my entire fault/their fault.
6. This situation is hopeless; nothing will ever improve.
7. If this person doesn't like me then other people must feel the same way.

8. I must be able to do it all; if I can't then there's something wrong with me.

9. My life is too hard. Life shouldn't be this difficult and frustrating.

10. Anger is not safe; I must not let myself get angry about this.

Challenging Questions:

1. What is the evidence for or against this idea?

2. Am I confusing habit with a fact?

3. Are my interpretations of the situation too far removed from reality to be accurate?

4. Am I thinking in all or nothing terms?

5. Am I using words or phrases that are extreme or exaggerated like always, forever, never, need,

Should, must, can't and every time?

6. Am I taking selected examples out of context?

7. Am I making excuses? I'm not afraid; I just don't want to go out. The other people expect me to be perfect. I don't want to make the call because I don't have time.

8. Is the source of information reliable?

9. Am I thinking in terms of certainties instead of probabilities?

10. Am I confusing a low probability with a high probability?

11. Are my judgement based on feelings rather than facts?

12. Am I focusing on irrelevant factors?

Automatic Thought Record

If you have noticed some distorted thinking in yourself, you know that it can be distressing and difficult to address. The good news is that it is absolutely possible to identify, understand, and correct our faulty ways of thinking, and that's exactly what this worksheet will help you do.

Instructions:

1. Write down the date and time of the situation.

2. Describe the situation. Ask yourself what led to this event, and what caused the unpleasant feelings you are experiencing.

3. Write down the automatic negative thoughts that came up. Note the thoughts and images that arose and note how much you believed these thoughts on a scale from 1 (did not believe at all) to 10 (believed completely).

4. Identify the emotions that were running through your mind along with the thoughts and images. Thoughts have a more structured feel (e.g., “I’m a failure”) while emotions are generally wordless (e.g., feeling inadequate or ashamed). Rate each emotion’s intensity on a scale from 1 (barely felt it) to 10 (completely overwhelming).

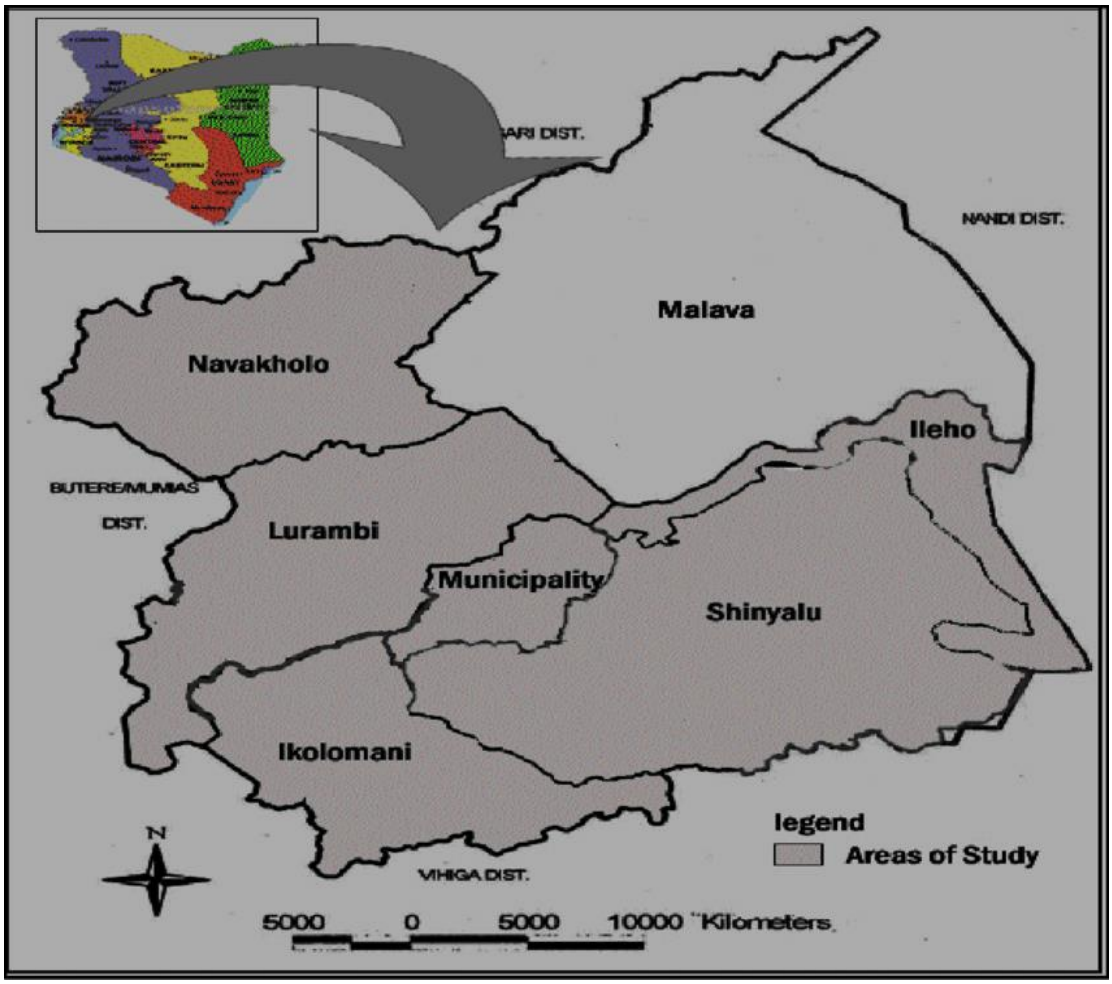
5. Describe your response. Note which cognitive distortions or faulty thinking styles you were employing at the time. Think about what your worst-case scenario is in this situation. Rate how likely you think the worst-case scenario is on a scale from 1 (not at all likely) to 10 (extremely likely).

6. Come up with a more adaptive response. Note the evidence that your automatic thoughts are correct, and consider the possibility of other outcomes. Write down the best-case scenario to counter the worst-case scenario, then come up with a “most realistic” scenario. Rate the likelihood of the most realistic scenario on a scale from 1 (not at all likely) to 10 (extremely likely).

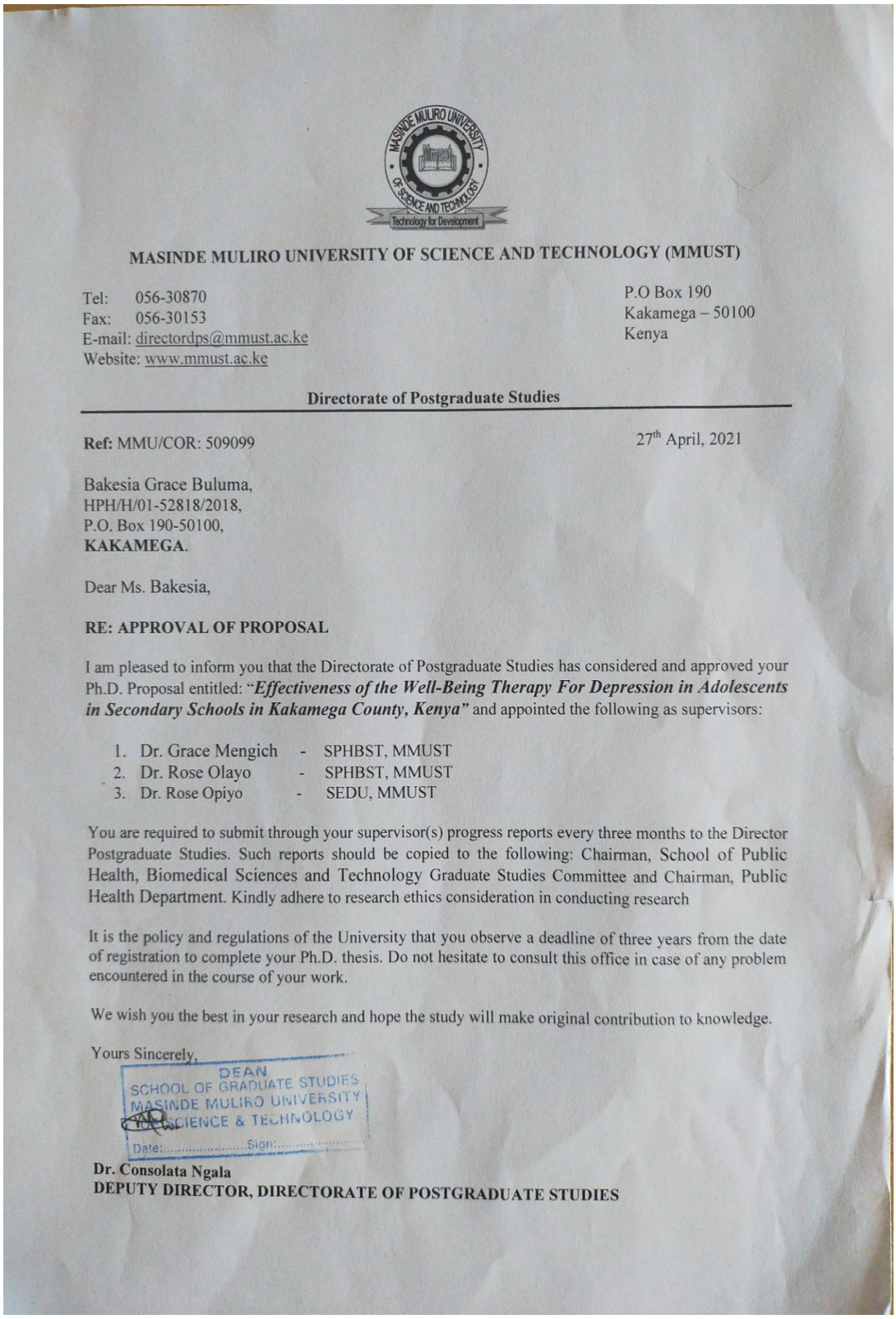
7. Afterwards, think about the outcome of the event. Do you feel the same as before you challenged your automatic thought? Do you still believe your automatic thought(s) just as much, or are you considering the more positive or more likely scenarios? Think about how you felt before and how you feel now. Rate the intensity of the automatic thoughts now.

Date and time	**Activity**	**Behavior**	**Consequence**
Automatic thought(s) that occurred			
Emotion(s) you felt			
Your response			
A More Adaptive Response			
Intensity of Automatic Thought(s)			

Appendix XI: Map of Kakamega County



Appendix XII: Approval from Directorate of Postgraduate Studies



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
Fax: 056-30153
E-mail: directordps@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 509099

27th April, 2021

Bakesia Grace Buluma,
HPH/H/01-52818/2018,
P.O. Box 190-50100,
KAKAMEGA.

Dear Ms. Bakesia,

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your Ph.D. Proposal entitled: "***Effectiveness of the Well-Being Therapy For Depression in Adolescents in Secondary Schools in Kakamega County, Kenya"*** and appointed the following as supervisors:

1. Dr. Grace Mengich - SPHBST, MMUST
2. Dr. Rose Olayo - SPHBST, MMUST
3. Dr. Rose Opiyo - SEDU, MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Director Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Public Health, Biomedical Sciences and Technology Graduate Studies Committee and Chairman, Public Health Department. Kindly adhere to research ethics consideration in conducting research

It is the policy and regulations of the University that you observe a deadline of three years from the date of registration to complete your Ph.D. thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

DEAN
SCHOOL OF GRADUATE STUDIES
MASINDE MULIRO UNIVERSITY
OF SCIENCE & TECHNOLOGY
Date:..... Sign:.....

Dr. Consolata Ngala
DEPUTY DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES

Appendix XIII: Approval from Institutional Ethics Review Committee (IERC)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
Tel: 056-31375
Fax: 056-30153
E-mail: ierc@mmust.ac.ke
Website: www.mmust.ac.ke
P. O. Box 190-50100
Kakamega, Kenya

Institutional Ethics Review Committee (IERC)

Ref: MMU/COR: 403012 Vol 3 (01) **Date:** 04th May, 2021

Grace Buluma Bakesia
Masinde Muliro University of Science and Technology,
P.O. Box 190-50100,
Kakamega.

Dear Ms. Buluma,

RE: Effectiveness of Well Being Therapy for Depression in Adolescents in Secondary Schools in Kakamega County, Kenya. - MMUST/IERC/192/2021

Thank you for submitting your proposal entitled as above for initial review. This is to inform you that the committee conducted the initial review and approved (with no further revisions) the above Referenced application for one year.
This approval is valid from **04th May, 2021** through to **04th May, 2022**. Please note that authorization to conduct this study will automatically expire on by **04th May, 2022.** If you plan to continue with data collection or analysis beyond this date please submit an application for continuing approval to the MMUST IERC by **04th April, 2022.**

Approval for continuation of the study will be subject to submission and review of an annual report that must reach the MMUST IERC Secretariat by **04th April, 2022.** You are required to submit any amendments to this protocol and any other information pertinent to human participation in this study to MMUST IERC prior to implementation.

Please note that any unanticipated problems or adverse effects/event resulting from the conduct of this study must be reported to MMUST IERC. Also note that you are required to seek for research permit from NACOSTI prior to the initiation of the study.

Yours faithfully,

Dr. Gordon Nguka (PhD)
Chairman, Institutional Ethics Review Committee

Copy to:
- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)

Appendix XIV: Approval from the NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **890080**

Date of Issue: **17/June/2021**

RESEARCH LICENSE

This is to Certify that Ms.. GRACE BAKESIA of Masinde Muliro University of Science and Technology, has been licensed to conduct research in Kakamega on the topic: EFFECTIVENESS OF THE WELL-BEING THERAPY FOR DEPRESSION AMONG ADOLESCENTS IN SECONDARY SCHOOLS IN KAKAMEGA COUNTY, KENYA for the period ending : 17/June/2022.

License No: **NACOSTI/P/21/11072**

890080

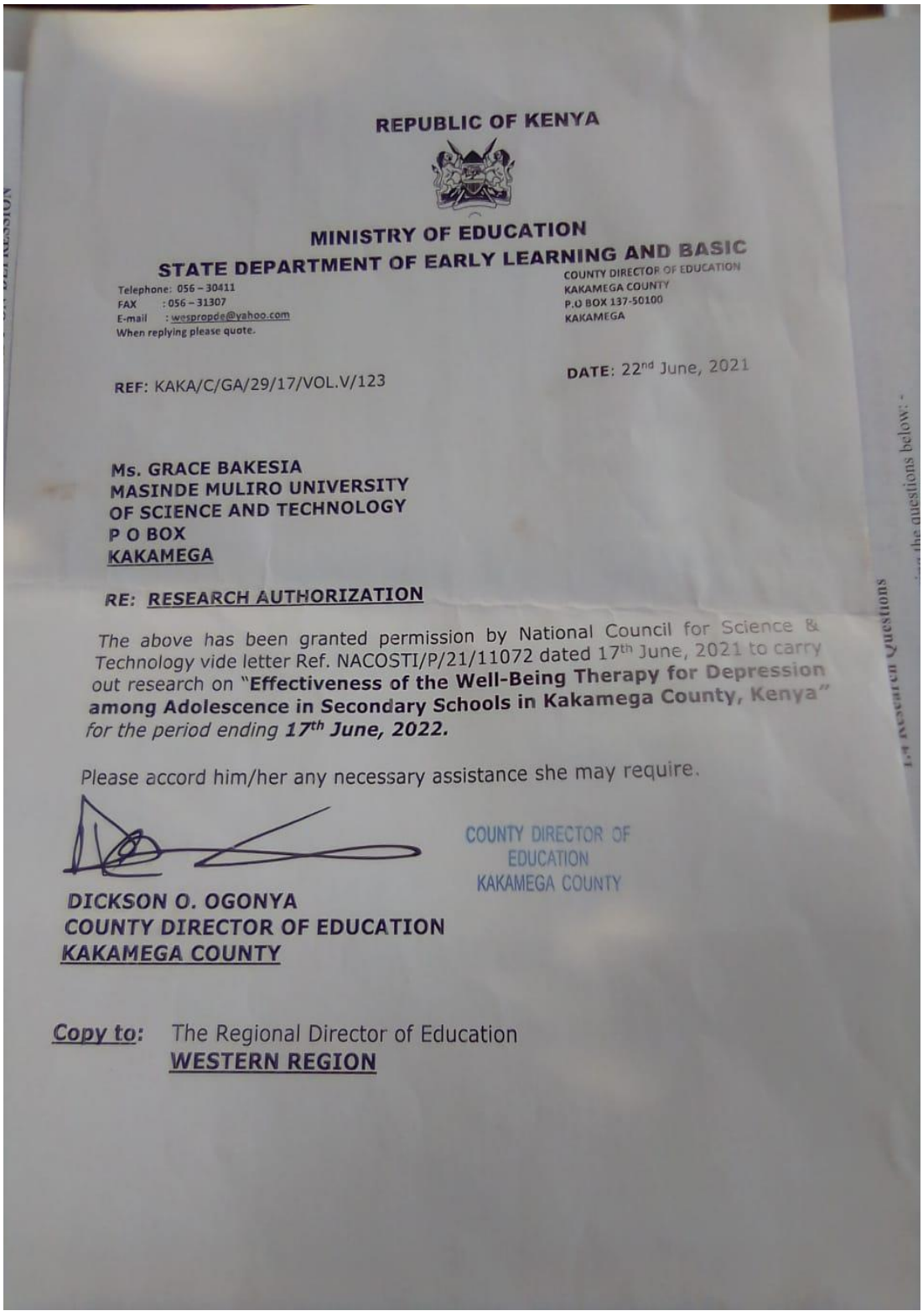
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix XV: Approval from the County Director of Education



REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC

Telephone: 056 – 30411
FAX : 056 – 31307
E-mail : wespropde@yahoo.com
When replying please quote.

COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY
P.O BOX 137-50100
KAKAMEGA

REF: KAKA/C/GA/29/17/VOL.V/123

DATE: 22nd June, 2021

Ms. GRACE BAKESIA
MASINDE MULIRO UNIVERSITY
OF SCIENCE AND TECHNOLOGY
P O BOX
KAKAMEGA

RE: RESEARCH AUTHORIZATION

The above has been granted permission by National Council for Science & Technology vide letter Ref. NACOSTI/P/21/11072 dated 17th June, 2021 to carry out research on "**Effectiveness of the Well-Being Therapy for Depression among Adolescence in Secondary Schools in Kakamega County, Kenya**" for the period ending ***17th June, 2022.***

Please accord him/her any necessary assistance she may require.

COUNTY DIRECTOR OF
EDUCATION
KAKAMEGA COUNTY

DICKSON O. OGONYA
COUNTY DIRECTOR OF EDUCATION
KAKAMEGA COUNTY

Copy to: The Regional Director of Education
WESTERN REGION