ADOLESCENTS' RISK FACTORS AND LIVED EXPERIENCES OF BULLYING VICTIMISATION, DEPRESSION AND SUICIDALITY: EFFECT OF A TEACHER-LED ANTI-BULLYING PSYCHOEDUCATION PROGRAM IN NAIROBI COUNTY

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Adolescents' Risk Factors and Lived Experiences of Bullying Victimisation, Depression and Suicidality: Effect of a Teacher-led Anti-Bullying Psychoeducation Program in Nairobi County

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

This thesis is dedicated to my loving wife, Lyflone Nyanchama for her care and support throughout the process of my studies.

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ACRONYMS AND ABBREVIATIONS

aPR	Adjusted Prevalence Ratio
APR	Adolescent Peer Relations Instrument
CDC	Centre for Disease Control and prevention
CI	Confidence Interval
IDI	In-depth Interview
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KEMRI	Kenya Medical Research Institute
MOE	Ministry of Education
MOH	Ministry of Health
NACOSTI	National Council for Science Technology and Innovation
PHQ-A	Patient Health Questionnaire-Adolescent
SBQ-R	Suicide Behaviour Questionnaire-Revised
SRGBV	School-related Gender Based Violence
uPR	Unadjusted Prevalence Ratio
WHO	World Health Organization

DEFINITION OF OPERATIONAL TERMS

Bullying Victimisation Bullying victimisation refers to the experience of being repeatedly subjected to aggressive and harmful behaviour by one or more individuals (bullies) within a social environment. This behaviour may manifest in various forms, such as physical, verbal, relational, or cyberbullying. Victims of bullying often endure intentional harm, harassment, or humiliation, and the mistreatment is typically characterized by an imbalance of power between the bully and the victim.

Depression Depression, also known as major depressive disorder (MDD), is a mental health condition characterized by persistent feelings of sadness, hopelessness, and a loss of interest or pleasure in activities that were once enjoyable. People with depression may experience changes in appetite, sleep patterns, and energy levels. It can significantly impact daily functioning, relationships, and overall well-being. Depression is a prevalent mental health disorder and can vary in severity, with some cases requiring professional intervention and treatment.

Lived Experiences Subjective accounts and personal perceptions of adolescents regarding their encounters with bullying victimisation. This encompasses their firsthand emotional, psychological, and social responses to bullying incidents, including the nuanced ways these experiences intersect with their mental health outcomes such as depression and suicidality.

Psychoeducation Psychoeducation is an approach used in mental health and educational settings to provide individuals and

groups with knowledge and information about psychological issues, mental health conditions, coping strategies, and treatment options. The goal of psychoeducation is to enhance understanding and awareness, empower individuals to manage their mental health more effectively, and reduce stigma surrounding mental health challenges. Psychoeducation can be delivered through various formats, such as workshops, group sessions, written materials, or online resources.

Suicidal Behaviour: Suicidal behaviour encompasses a range of actions and thoughts related to self-harm and suicide. It includes suicidal ideation (thoughts about or preoccupation with suicide), suicide attempts (engaging in self-injurious behaviours with an intent to die but not resulting in death) and completed suicide (the act of intentionally causing one's death). Suicidal behaviour is often considered a complex and multifaceted issue with various underlying risk factors, including mental health conditions, interpersonal struggles, and other stressors.

ABSTRACT

Many adolescents at some point in their lives experience bullying victimisation at school. This has been amplified by its co-occurrence with depression and suicide that has also been linked to bullying. In recent years the need for empirically proven effective programs targeted at bullying and has increased significantly globally and locally. The study investigated psychosocial dynamics impacting the mental health of adolescents in public secondary schools in Nairobi County, Kenya, focusing on bullying victimisation, depression, and suicidal behaviour. It also assessed the impact of a Teacher-led anti-bullying psychoeducation program on these dynamics within the educational context. A concurrent parallel mixed methods design incorporating a two group post-test only control group design in the quantitative arm was used. A total of 539 students across 5 schools formed the sample for the study. The study population comprised form 1 students who had attended the selected secondary schools for at least one month. The study instruments included a questionnaire and guides for in-depth interviews and focus group discussions. For quantitative data, predictors of depression were assessed using a generalized linear model (GLM), using a backward stepwise Poisson distribution with a log-link function, was used to estimate both the unadjusted prevalence ratios (uPR) and the adjusted prevalence ratios (aPR). Variables were included into the multivariable model based on a relaxed p-value of 0.2 in the univariable analysis. The qualitative data was transcribed and analysed thematically. The prevalence of depression was 14.5% among adolescents joining secondary school students in Nairobi County, with a mean PHQ-A score of 6.16 (SD=3.16). Among males, the prevalence of depression was 15.9% (n=34) compared to females who had a prevalence of 13.5% (n=44). Suicide risk among adolescents was found to be 20.0% (n=108) with a mean SBQ-R score of 4.88(SD=2.90). Majority (85.7%) of the students had experienced bullying victimisation. Depression was the only statistically significant predictor of bullying victimisation in multivariable analysis (aPR=1.33; 95%CI=1.05-1.68, p=.026). In the depression multivariable model, the risk of suicidal behaviour [aPR=3.07, CI (1.94-4.88); p<.001] and lifetime alcohol use [aPR=2.24, CI (1.36-3.68); p=.001] remained as statistically significant predictors. Bullying victimisation was retained in the multivariable model, but it was not statistically significant [aPR=2.88, CI (0.90-9.24); p=.075]. From the qualitative findings, students had experienced bullying victimisation and depression and witnessed suicidal attempts. Additionally, school-related gender-based violence was an emergent form of bullying victimisation in mixed secondary schools. Ultimately, the psychoeducation program was not effective in reducing bullying victimisation, depression, and suicide risk. It is possible that these issues are deep-seated and perhaps needful of a longer-term continuing intervention. It is recommended that interventions targeting adolescent alcohol use should be commenced early in the secondary school period given a likelihood of earlier age of onset. School-based cognitive behavioural therapy is an emerging intervention that needs to be explored further to reduce and prevent bullying victimisation, depression, and suicidality in secondary schools. The National School Health Policy should be reviewed to create a framework for reporting and addressing adolescent bullying, depression, and suicidal behaviour in the school setting.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

1.1.1 Bullying Victimisation

Laith and Vaillancourt (2022) define bullying victimisation as a significant concern that possesses negative impacts on school-aged children globally. It not only affects the children's educational performance but also has a significant impact on their mental health. The World Health Organization (WHO) defines bullying as an unwanted form of aggressive behaviour directed towards an individual or group who has no romantic relationship or is not siblings with the victim. It is characterized by repeated forms of physical, social, and psychological harm that usually take place within the school institutions and other settings that young teenagers gather or engage in such as online platforms. There are various forms of bullying which include physical, cyberbullying, emotional and verbal (WHO, 2022).

In the United States, at least 21% of children between the ages of 12-17 years experienced various forms of bullying victimisation. The prevalence varied between 16% to over 30% in other areas. For example, the prevalence in New York is 16.5% while other states such as Kentucky, North Dakota, Wyoming, and Arkansas all recorded levels higher than 30% for bullying victimisation (Lebrun-Harris *et al.*, 2020). Another study conducted by Jackson *et al.* (2019) also revealed that children with chronic health conditions or disabilities have a higher likelihood of bullying victimisation (50%). A study by Li *et al.*, (2020) also captured a prevalence of 19.04%-20.19% for traditional bullying victimisation and 14.77% for cyber victimisation both of which had significant mental health impacts on the victims.

In Africa, Aboagye *et al.*, (2021) investigated the prevalence of bullying victimisation in various sub-Saharan countries such Benin, Ghana, Mauritania, Seychelles, Tanzania, Sierra Leone, Eswatini, Liberia, Mozambique, Namibia and Mauritius. The overall prevalence for bullying victimisation was 38.8% with it being higher Sierra

Leone (54.6%) and lower in in Mauritius (38.8%). Biswas *et al.* (2020) also notes that higher levels of bullying victimisation are recorded in Eastern Mediterranean and African regions. Africa records prevalence levels that range between 43.0%-44.3% and commonly associated with male gender, younger age, socio-economic status of the parents and social or parental support. In Mozambique, Peltzer and Pengpid (2020) captured a prevalence level of 45.5% for infrequent (1-2 days/month) and 13.4% frequent (3-30 days/month).

There are few studies that have been conducted on the prevalence of bullying victimisation and its associated factors and effects in Kenya. A study by Mathew *et al.*, (2019) further shows that the prevalence of cyber victimisation in Kenyan schools to be 23% thus indicating the need to implement appropriate measure to reverse this worrying trend. The National Education Sector Strategic Plan (NESP) stipulates that school institutions should endeavour to protect students from the common types of bullying (MoE, 2018). In reality, the majority of the responsibility is placed on teachers who provide limited attention or interventions that mitigate against such concerns (Mucherah *et al.*, 2018).

1.1.2 Depression

According to WHO (2021) depression is a common mental health disorder that is characterized by symptoms such feelings of excessive guilt and low self-worth, hopelessness, loss in appetite, poor concentration, feeling tired, disrupted or thoughts of committing suicide. At least 280 million people around the world suffer from depression despite the availability of effective treatment to reverse its impact and association with suicidality. Shorey *et al.*, (2022) notes that at least 34% of adolescents between the ages of 10-19 years have a higher likelihood of developing clinical depression which is a higher rate compared to the estimates of individuals between the ages of 18-25 years globally. Additionally, female adolescents and those from Asia, Middle East and Africa are at higher risk compared to other continents. In the US, the prevalence level for untreated depression increased from 8.6% in 2015 to 9.2% in 2020 among the youth (Li *et al.*, 2020). Higher prevalence rates were recorded in China for depressive symptoms which ranged between 6.2% to 64.8%. The prevalence also

increased based on the grades of the students which was lower in junior secondary (17.8%-32.8%) and higher in senior secondary students (29.4%-51.9%) (Tang *et al.*, 2019).

Studies conducted in Africa also report high levels of depression among adolescents. For example in Uganda, Nabunya *et al.*, (2020) captured a prevalence level of 16.35% for adolescents experiencing severe depression. The study also revealed that symptoms of depression were more prevalence among individuals who were 16 years and older. Another study that was conducted in 16 sub-Saharan countries revealed prevalence rates that ranged between 18%-29% for depression (Jörns-Presentati *et al.*, 2021).

In Kenya, Nzagi *et al.*, (2022) found a prevalence level of 32.2% for participants aged between 16-17 years and 18.3% for participants aged 18-19 years. The study also revealed that the extent of depression was higher among females (33.8%) compared to males (25.1%), those in form two (23.3%) compared to those in form one (18.7%) and day scholars (35.9%) compared to school boarders (22.9%). Further, a study by Osborn *et al.*, (2020) also found out that Kenyan adolescents have high levels of depression symptoms with a prevalence rate of 45.9%. This trend was commonly reported among older participants as well as those with lower social support.

The Kenya Mental Health Policy (2015-2030) was introduced as an intervention to deal with the ever-increasing rate of mental health concerns in the country. The policy is guided by the 2010 constitution in article 43(1)(a) which states that every individual has the right to acquire quality health services at the highest attainable standards (MOH, 2015). However, the policy is silent on the introduction or implementation of strategies to help control depression among students.

1.1.3 Suicidality

According to WHO (2021b) suicidal behaviour also known as suicidality is commonly categorized into three types of symptoms which are inclusive of suicide ideation, suicide and suicide attempt. In relation to the recent statistics, at least 800,000 people commit suicide which is also the second leading cause of death among individuals aged between 15-29 years. CDC (2023) also reports that suicide is the leading cause

of death in the US with at least 45,979 committed in 2020 alone translating to one death every 11 minutes and the number are higher among individual thinking about committing suicide. Biswas *et al.*, (2020) notes that the prevalence of suicidal ideation to be 14% globally with a higher prevalence in African region (21%) compared the Eastern Mediterranean Region (17%), European Region (4%) and Asia Regions (8%). In Germany, the rates for suicidal ideation, suicidal plans and suicidal attempts were estimated at 10.7%, 5% and 3.4 % respectively.

In Africa, a study conducted by Nyundo *et al.,* (2020) captured a prevalence level of suicidal behaviour that ranged between 1.2% -12.4% for suicidal behaviour over the last 12 months in Nigeria, Ethiopia and Tanzania. In Liberia, Quarshie *et al.*, (2020) captured prevalence levels of 26.8%, 36.5% and 33.7% for suicidal ideation, suicidal plans and suicidal attempts over the 12 months that preceded the study. Another study conducted by Uddin *et al.*, (2019) captured 59 low and middle income countries around the world. The prevalence levels for suicidal behaviour were estimated 16.9%, 17% and 17% for suicidal ideation, suicide planning and suicide attempts. The study also revealed that the African region had higher prevalence for suicidal ideation which ranged between 17.3%-23.6%.

In Kenya, Ndetei *et al.*, (2022) captured a prevalence of 22.6% for suicidal ideation which was associated with female gender, major depression and being in high school. Similarly, Mokaya *et al.*, (2022b) captured a prevalence of 20.04% for suicidal behaviour which was highly associated with lifetime alcohol use and depression among the students. Another study conducted by Mugambi (2020) also captured a prevalence level of 21.5% for suicidal behaviour which showed a positive correlation with factors such as Post Traumatic Stress disorder (PTSD) and depression.

Recently, Kenya launched the National Suicide Prevention Strategy and Program (2021-2026) to address the mental health issues such as suicidal behaviour by ensuring constant coordination between the state and non-state bodies. The strategy only notes the illegality of suicide but there is a need for more interventions in reducing suicidal behaviours especially in school institutions (MOH, 2021).

1.2 Statement of the Problem

In Kenyan institutions, the pervasive nature of bullying victimisation, with prevalence rates surpassing 80%, is a distressing reality (Lebrun-Harris *et al.*, 2020; Limbana *et al.*, 2020; Mokaya *et al.*, 2022a; WHO, 2021a). This phenomenon not only poses an immediate threat but serves as a precursor to severe mental health challenges, notably depression and suicidal behaviour, which are escalating among adolescents globally (Lebrun-Harris *et al.*, 2020; Limbana *et al.*, 2020; Mokaya *et al.*, 2022a; WHO, 2021a). The repercussions extend beyond the academic realm, influencing students' mental well-being, academic performance, and overall psychosocial functioning.

Adding to the complexity, the advent of cyber victimisation through the widespread use of the internet has heightened the magnitude of this issue. Despite the clear association between bullying victimisation and subsequent mental health struggles, interventions within the educational landscape remain inadequate, often dismissing such occurrences as mere rites of passage. Furthermore, existing policy frameworks, including the National Education Sector Strategic Plan (NESP), the Mental Health Policy 2015-2030, and the National Suicide Prevention Strategy and Program (2021-2026), exhibit notable gaps in addressing the comprehensive prevention and mitigation of bullying victimisation and its associated mental health ramifications, especially among adolescents in school institutions.

Recognizing this urgent gap in understanding and intervention, this study aims to unravel the intricate relationship and risk factors of bullying victimisation, depression and suicidality. Moreover, it endeavours to assess the effect of a teacher-led anti-bullying psychoeducation program in mitigating bullying victimisation, depression, and suicidality among adolescents enrolling in public secondary schools in Nairobi County, Kenya. The selection of a teacher-led psychoeducation program arises from its potential to equip educators with the necessary tools to proactively address bullying and its mental health consequences within the school environment, aligning with established evidence on the effectiveness of such programs in creating supportive and preventive atmospheres (El Fatah *et al.*, 2022). This research aspires not only to unveil critical insights into the multifaceted nature of these challenges but also to inform the

development of robust policies and targeted interventions aimed at safeguarding the mental well-being of adolescents within the educational landscape.

1.3 Justification of the Study

The vulnerability of adolescents to the intertwined challenges of bullying, depression, and suicidal behaviour underscored the critical need for a comprehensive study in this area. Teenagers often navigated social hierarchies, and the pursuit of societal acceptance could lead to heightened susceptibility to mental health issues, particularly among those who felt marginalized. The paucity of data on the link between bullying, depression, and suicidal behaviour in the Kenyan context emphasized the urgency of the study in contributing to the existing body of knowledge.

This research was positioned to illuminate the complex relationship between bullying and depression, with a specific focus on suicidal behaviour among Kenyan adolescents in secondary schools. By addressing this gap in the literature, the study aimed to provide a nuanced understanding of the factors contributing to these challenges. Moreover, the investigation into the lived experiences of adolescents offered a unique lens into the personal narratives surrounding these issues, allowing for a more empathetic and contextually rich analysis.

The evaluation of a teacher-led anti-bullying psychoeducation program as an intervention factor was a crucial facet of this study. Understanding how such programs impacted the psychosocial dynamics of adolescents not only added practical value but also contributed insights that could inform policy and legislation. By elucidating the potential effectiveness of psychoeducation, this study aimed to guide the development of evidence-based interventions, offering teachers and educational policymakers' actionable strategies to mitigate the negative impacts of bullying and depression.

The overarching goal was to empower teachers to play a proactive role in creating a safe and healthy learning environment. The study's findings were expected to serve as a catalyst for the formulation of relevant policies and legislation at both national and local levels. Ultimately, this research aimed to contribute substantively to the well-being of Kenyan adolescents, fostering a supportive educational landscape that

prioritized mental health and addressed the challenges posed by bullying and depression.

1.4 Study Hypothesis

The main hypothesis of the study was:

Null hypothesis H_0: There is no significant difference in the prevalence ratio of bullying victimisation, depression, and suicidality between adolescents who undergo the psychoeducation program and those who do not.

Alternative hypothesis H_1: Adolescents who undergo the psychoeducation program will show a significantly lower prevalence ratio in bullying victimisation, depression, and suicidality compared to those who do not undergo the program.

1.5 Broad Objective

To investigate the psychosocial dynamics affecting the mental health of adolescents in public secondary schools in Nairobi County, Kenya, with a focus on bullying victimisation, depression, and suicidal behaviour and assess the Effect of a Teacher-led anti-bullying psychoeducation program on the psychosocial dynamics among adolescents in the educational context.

1.5.1 Specific Objectives

1. To determine the risk factors associated with bullying victimisation among adolescents joining public secondary schools in Nairobi County, Kenya.
2. To identify the risk factors associated with depression among adolescents joining public secondary schools in Nairobi County, Kenya.
3. To investigate the factors associated with the risk of suicidal behaviour among adolescents joining public secondary schools in Nairobi County, Kenya.
4. To explore the lived experiences of bullying victimisation, depression and suicidality among adolescents joining public secondary schools in Nairobi County, Kenya.

5. To evaluate the effect of a teacher-led psychoeducation program on bullying victimisation, depression and suicidality among adolescents joining public secondary schools in Nairobi County, Kenya.

1.6 Significance of the Study

The significance of this study lies in its potential to contribute valuable insights into the psychosocial factors affecting the mental health of adolescents in public secondary schools in Nairobi County, Kenya. Adolescence is a critical developmental stage, and understanding the nuances of bullying victimisation, depression, and suicidal behaviour is imperative for the formulation of targeted interventions. The investigation of these psychosocial dynamics within the educational context is particularly relevant, as schools play a central role in adolescents' social and emotional well-being. Furthermore, the assessment of the Teacher-led anti-bullying psychoeducation program adds a practical dimension to the study's significance. Evaluating the effectiveness of such interventions is essential for informing educational policies and practices, and providing evidence-based strategies to address mental health challenges among adolescents.

By shedding light on the intricacies of these psychosocial dynamics and the potential impact of preventative measures, this study contributes to the broader fields of public health and education. The findings have the potential to guide the development of targeted interventions, ultimately fostering a healthier and more supportive environment for adolescents in public secondary schools in Nairobi County and potentially serving as a model for similar settings globally.

1.7 Conceptual Framework

The conceptual framework for this study centres around the complex dynamics influencing adolescents' mental health, with a specific focus on bullying victimisation, depression, and the risk of suicide and adolescents' lived experiences with them. At the core are the dependent variables: bullying victimisation, depression, and the risk of suicide. Acknowledging bidirectional relationships, the framework underscores the nuanced interconnectedness of these outcomes.

Sociodemographic factors, including gender, religion, socioeconomic status, age, residence, nationality, number of siblings, and caregivers, act as independent variables shaping the social context of adolescents' experiences. Additionally, other risk factors such as engagement in romantic relationships, sexual activity, and substance use (alcohol, drugs, tobacco) contribute to understanding the broader influences on mental health outcomes.

Situated between these variables is a pivotal intervention—the teacher-led antibullying psychoeducation program. It is essential to note that this program exclusively addresses bullying victimisation, with the assumption that by intervening to halt bullying, there may be a knock-on effect on depression and suicide. The hypothesis is that reducing bullying experiences may contribute to positive mental health outcomes.

Depression is envisioned to be influenced by bullying victimisation, sociodemographic factors, and other risk factors. While the psychoeducation program directly targets bullying, the assumption is that mitigating this experience may indirectly impact depression. The risk of suicide is seen to have bidirectional relationships with both bullying victimisation and depression, influenced by sociodemographic and other risk factors. The intervention aims to decrease these risk factors and enhance protective factors, indirectly affecting suicide risk through its impact on bullying experiences.

The mechanisms of action for the psychoeducation program include increasing awareness of bullying consequences, fostering positive social relationships, and providing tools for recognizing and addressing risk factors associated with depression and suicide. It's essential to clarify that the program's primary focus is on curbing bullying, with the expectation that this may have positive repercussions on mental health outcomes.

In the broader context, the conceptual framework anticipates a potential reduction in depression and suicide by intervening to stop bullying. It underscores the need for a comprehensive and holistic approach, recognizing the interconnected nature of mental health outcomes and the potential for positive cascading effects through targeted interventions, as shown in Figure 1.1.

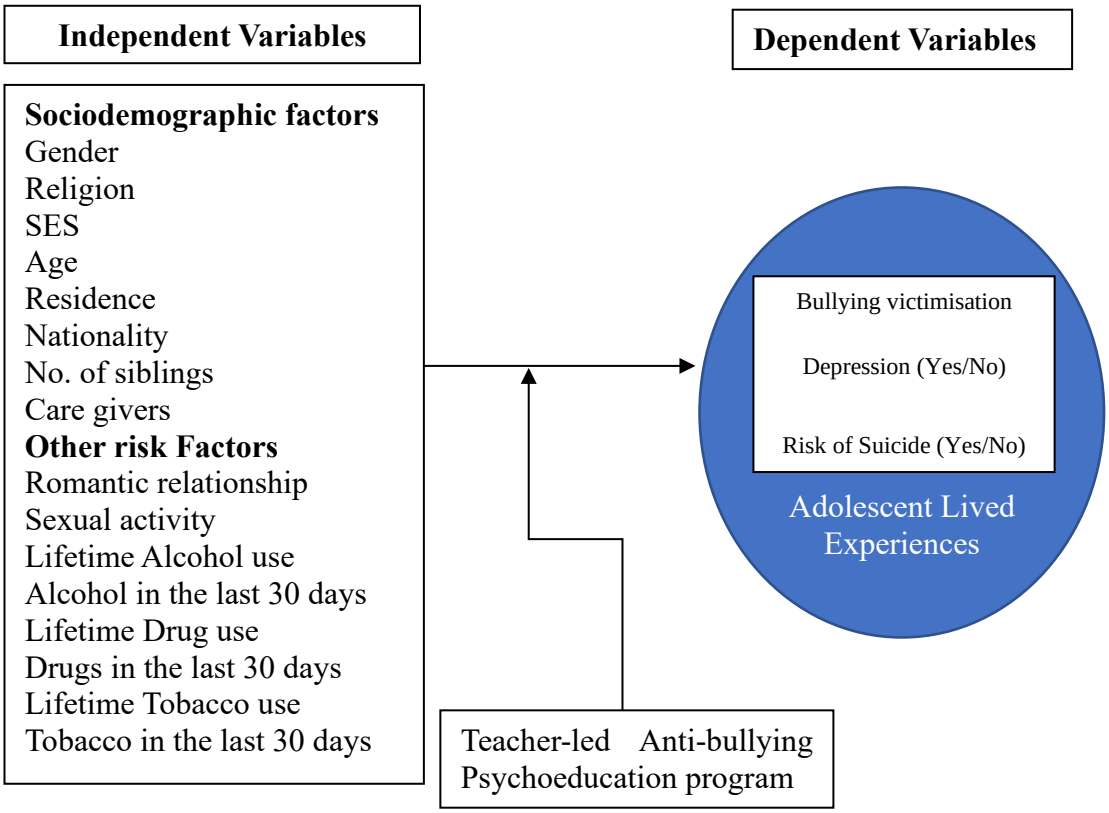

Figure 1.1: Conceptual Framework

CHAPTER TWO

LITERATURE REVIEW

2.1 Adolescent Depression and Risk Factors

According to WHO (2017), the state of health of teenagers has increasingly been ignored despite issues like isolation, discrimination and depression affecting at least 10-20% of the world population. This coupled with the lack of health facilities to cater for these concerns is a violation of the human rights of all teenagers in the world. CDC (2018) also points out that extreme depression can lead adolescents to commit or plan for suicide due to their inability to talk about their helplessness and hopelessness thoughts.

Depression is increasingly becoming a major contributor to suicide, especially among teenagers as it affects at least 7.6% of individuals aged 12 years and above over 2 weeks. Additionally, it has resulted in at least 44,193 recorded deaths worldwide translating to at least 13.7 deaths in 100,000 (CDC, 2016). In sub-Saharan Africa, there is very little information concerning the occurrence of depression although the existing study findings portray variations in its prevalence across countries i.e. 10.7%-21.1% in Tanzania, 41% in S. Africa and Uganda 8.6% among individuals aged 5 to 17 years (Kutcher *et al.*, 2017). A recent study conducted in South Africa revealed that 90.9% of the study population deemed depression to be an illness which was associated with irritable behaviour, poor sleeping and eating patterns, sad mood and other health risk behaviours. The study also pointed out that increasing mental health literacy would be significant in the management of depression (Aggarwal *et al.*, 2016).

The prevalence rate of depression among students in Kenya has been on a rampant rise, especially among those in secondary schools with the prevalence rate being estimated at 43.7% among those in Public schools in Nairobi County (Khasakhala *et al.*, 2012). Several concerns have been noted as being the major contributors to depression e.g. poor maternal parenting behaviour and maternal depressive disorders among adolescents within the age bracket of 13 and above (Khasakala *et al.*, 2013). Another study conducted among pregnant adolescents revealed that depression

majorly occurs among urban resource-deprived individuals. Other risk factors captured include younger age and being HIV positive (Osok *et al.,* 2018).

Concerning depression, Chodzen *et al.,* (2019) note that Major Depressive Disorder (MDD) is linked to a variety of factors such as gender identity, internalized transphobia and community connectedness. Mokaya *et al.,* (2023) also sought to determine the predictors of depression among adolescents in Nairobi. The study captured a prevalence of 14.5% for depression among adolescents. The factors associated with depression included suicide risk and lifetime alcohol use. Lindberg *et al.,* (2020) also conducted a study that focused on the extent of depression and anxiety among adolescents. Findings from the study revealed that adolescents who were obese (both male and female) have a higher risk of being depressed compared to their counterparts.

Insecure attachments between adolescents and their primary caregivers have also been associated with an increased risk for the development of depression. This has been captured in studies focusing on attachment and depression. For example, one study that explored this phenomenon noted that an insecure attachment was highly associated with depression among adolescents (Spruit *et al.,* 2020). A study by Osborn *et al.,* (2020) also noted that the extent of depression (45%) was relatively high among Kenyan youth. The study also noted that older adolescents were highly likely to report higher levels of depression. However, females were more likely to be depressed compared to male adolescents.

A systematic review conducted by Pozuelo *et al.* (2022) captured a total of 31,148 studies focusing on depression that focused on low and middle-income countries (LMICs) from Africa, Latin America and Asia. Findings from the study showed that adolescents with depression often engaged in risky sexual behaviour and substance use compared to their non-depressed counterparts. The depressed adolescents also expressed patterns of higher delinquency, suicidal behaviour and self-harm. Another study conducted in Greece captured 2771 adolescents. The objective of the study was to explore the prevalence of depression and anxiety among young Greeks. The results showed that depression was highly associated younger age, female sex, mental health history, substance use, dyslexia, social seclusion and a lower quality of life. Depression

had no relationship with unemployment and low-income levels of the parents of the adolescents (Basta *et al.*, 2022).

According to Mei *et al.* (2021) junior high school students undergo various experiences mostly physical and psychological which are associated with puberty. These issues are highly likely to result to an increased risk in the occurrence depression. The researchers also note that bullying victimisation only exacerbates the risk in the occurrence of depression symptoms. This relates to a study conducted by Chou *et al.* (2020) who revealed that victims of bullying were highly likely to express severe levels of depression and anxiety. Additionally, these victims were highly likely to encounter other menta health issues such low self-esteem and suicidal behaviour.

Chen *et al.* (2021) focused on capturing the factors associated with depression and anxiety among Chinese adolescents in 2020. The study captured a total of 9554 which revealed a prevalence of 36.6% for depression among the adolescents. Factors that were associated with depression included female gender, concerns associated with entering a higher grade and enrolment to senior secondary school. According to a study conducted by da Silva *et al.* (2020) also stipulates that bullying posed a significant impact on the health and development of adolescents especially those transitioning to middle school. The study also noted that bully victims were 9 times more likely to present with depressive symptoms compared to their non-bullied counterparts. Additionally, girls' depression was mostly associated physical, relational and verbal bullying victimisation while among boys it was only associated with relational and verbal victimisation.

These results coincide with a study conducted by Lutrick *et al.* (2020) which captured a significant association between bullying and depression among adolescents. Boers *et al.* (2019) sought to measure the association of depression and screentime in a study that captured 3826 adolescents. The study revealed that the depression symptoms increased on a yearly basis among the research participants. The study also revealed that with every increased hour spent in the usage of social media, the adolescents had 0.64-unit increase of portraying depressive symptoms. Similarly, every increased hour in the usage of computers had 0.69-unit increase of portraying depressive symptoms.

2.2 Suicidal Behaviour and Risk Factors among Adolescents

Suicidal behaviour is major concern among young people as it basically means to the productiveness that an individuals can produce and the death of a loved one. Suicide has multiple determinants which can be biological, psychological, and family related or culturally related. However, it is critical to note that only individuals factors have a high association with suicidal behaviour (Breton *et al.*, 2015). According to Turecki and Brent, (2016), there are variations to suicidal behaviour in relation to sexes, age groups, geographic area and the socio-political settings all which have varied risk factors. Suicide accounts for at least 800,000 worldwide with many potential explanations to their occurrence (O'Connor and Kirtley, 2018).

According to the criteria set out by the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5), a person is considered to have Suicidal Behaviour Disorder if they meet 5 key criteria as shown in Table 2.1 (APA, 2013).

Table 2.1: DSM-5 Criteria for Suicidal Behaviour Disorder

Criteria
A. Within the last 24 months, the individual has made a suicide attempt. Note: A suicide attempt is a self-initiated sequence of behaviours by an individual who, at the time of initiation, expected that the set of actions would lead to his or her own death. The "time of initiation" is the time when a behaviour took place that involved applying the method.)
B. The act does not meet criteria for non-suicidal self-injury—that is, it does not involve self-injury directed to the surface of the body undertaken to induce relief from a negative feeling/cognitive state or to achieve a positive mood state.
C. The diagnosis is not applied to suicidal ideation or to preparatory acts.
D. The act was not initiated during a state of delirium or confusion.
E. The act was not undertaken solely for a political or religious objective.

Note. Criteria for Suicidal Behaviour Disorder. Adapted from *Diagnostic and Statistical Manual of Mental Disorders* (p. 801), by American Psychiatric Association, 2013, Arlington, VA: American Psychiatric Association. Copyright © 2013 by the American Psychiatric Association. Adapted with permission.

The criteria given in Table 2.1 introduce two important concepts: non-suicidal self-injury and suicidal ideation. Non-suicidal self-injury is defined as "self-harm without

the intention of suicide," while suicidal ideation refers to thoughts of or preoccupation with suicide.

2.2.1 Suicidal Ideation

These are suicidal thoughts developed in an individual to end their life and to relieve themselves of overwhelming pressures, pain or because of a severe mental disorder. It is therefore a major concern among adolescents especially those who have been admitted with psychiatric disorders and they disorders persist when they are finally discharged. Chronic suicidal ideation is associated with the highest number of suicidal attempts (Wolff *et al.,* 2018). Another study connects suicidal ideation to a number of risk factors like alcohol consumption, risky sexual behaviour, self-injury, prescription drug misuse, maladaptive dieting, interpersonal violence and marijuana use (Thullen *et al.,* 2016).

2.2.2 Suicidal Intent/Plans

This an actual plan that a particular individual has about committing suicide which is characterised by warning signs like an individual talking about killing oneself, looking for ways to kill themselves and individuals who show feelings of hopelessness and unbearable pain. Suicidal intent has been shown to increase with increase in Age and is mostly prevalent among males with the most common form of self-harm being poisoning (carbon monoxide gas) (Haw *et al.,* 2015). Another study found out that the major risk factors of self-harm and suicidal intent include an individual's socioeconomic positioning, parental self-harm, lower IQ, and physical abuse among children (Mars *et al.*, 2014).

2.2.3 Suicide Attempts

This is the act of committing suicide which can in turn result into death or fatal injury or health conditions. Suicide attempts are among the fixed risk factors for suicide with other factors including depression, sexual orientation, family history of suicide, parental and individual mental health problems (Shain, 2016). According to Ougrin *et*

al., (2015*)*, reducing these attempts has proved to be elusive in the last 60 years due to an elevated psychopathy among adolescents.

2.2.4 Factors Associated with Risk of Suicidal Behaviour

Suicide is an increasingly disturbing concern globally especially given the fact that that it is the second leading cause of death for individuals between the ages of 15-29 years. There are variety of factors that are associated with suicidal behaviour among adolescents such as insufficient sleep, having a history of bullying, feeling sad or hopeless, being overweight, substance use, cyberbullying victimisation, female gender and being among the sexual minority (Baiden, Tadeo, *et al.*, 2020). Campisi *et al.* (2020) conducted a study in 90 countries that sought to provide a better understanding on the burden and determinants associated with suicides among adolescence. A total of 397,299 adolescents between the age of 13-17 years. Girls had a higher risk of suicidal ideation compared boys whereas the extent of suicidal attempts had no variations in terms gender and age. Bullying victimisation and no close friends were relatively higher among girls. Among boys, engagement in physical fights and having no close friends was highly associated with suicidal ideation which was often associated with serious injury especially among boys aged 13- 15 years.

A study conducted in the U.S sought to determine whether there was a significant relationship between racial ethnic subgroups and suicidal behaviour. The survey was conducted between 1991-2017 that captured 198540 adolescents in high school. The results suggested that black youth had higher risk of reporting suicide attempts which was highly concerning as it was a risk factor for suicide death. Additionally, black boys resorted to self-injury which suggested that they engage in lethal means while attempting suicides (Lindsey *et al.*, 2019).

A similar study conducted by Baiden, *et al.* (2020) revealed that at least 18% and 7.7% of the adolescents reported suicidal ideation and attempted suicide respectively 12 months before the study was conducted. Findings from the study revealed that the non-white sexual minority adolescents were less likely to experience suicidal ideation yet more likely to report suicide attempts. Another study also sought to examine the relationship between sleep, physical, school environment factors associated with self-

reported suicidal ideation among adolescents. A total of 18324 respondents reported factors such meeting physical activity guidelines, school environment factors such as bringing weapons to school, hours of sleep, perceived school safety, bullying victimisation and purchasing illegal drugs in school were considered risks of suicidal ideation among adolescents (Pfledderer *et al.*, 2019).

Nyundo *et al.* (2020) sought to investigate the burden associated with depression and suicidal behaviour among adolescents in 6 sub-Saharan African countries that includes Tanzania, Ethiopia, Uganda, Burkina Faso, Ghana and Nigeria. The study captured 7662 adolescents between the ages of 10-19 years. Results revealed a prevalence of 1.2-12.4% for suicidal behaviour between the countries. Findings from the study revealed that suicidal behaviour was associated with factors such as female gender, poor access to healthcare, food insecurity, substance use and older age.

Pandey *et al.* (2019) conducted a study with 6531 students from 74 schools between grade 7 and 11. The results revealed that 13.59% of the participants had considered committing suicide while 10.33% had attempted suicide. Factors associated with suicidal behaviour included food insecurity, anxiety, gender and loneliness which were associated with suicidal ideation. Suicidal attempts were mostly associated with anxiety, truancy, having three or more friends, cigarette usage and gender which were positively associated with suicidal attempts.

Gili *et al.* (2019) employed a systematic review approach to conduct a study on the risk of factors associated with suicidal behaviour. The systematic review with 25354 participants reported mental disorders as a risk factor for suicide attempt and death. Only affective disorders were significantly associated with suicidal attempts. Longobardi *et al.* (2020) conducted a similar study during the COVID-19 pandemic that revealed that the pandemic was associated with a decrease in psychological well-being associated with emotional disorders such as post-traumatic symptoms, anxiety, depression and insomnia. The uncertainty of information, quarantine duration, fear of infection or the infection of loved were associated with increased distress which in turn was associated with depression among the adolescents which in turn resulted to the risk of suicidal ideation among the adolescents.

2.3 Bullying Victimisation and Risk Factors among Adolescents

Bullying can be described as a type of violence which poses a significant amount of risk to a particular individual. These behaviours not only affect the victims but also individuals around in school and around their neighbourhood (Hymel and Swearer, 2015). This leaves people powerless, intimidated and humiliated by their aggressive bullies. It is characterised by intentional aggressive behaviour, repetition and power imbalance. The school is one major environment where bullying mostly occurs and this has in turn has resulted into bullying becoming a major concern in the society (Narayanan and Betts, 2014).

Harassments are part of schools however; bullying is a serious concern and a threat to youth development. The recurrent behaviours cause imbalance among the survivors and this may result into depression or even lead to the development of suicidal behaviours. Bullying is mainly associated with continuous exposure to mistreatment which can be physical, emotional, cyberbullying and verbal (Kelly *et al.,* 2015).

According to a study conducted by Gan *et al.,* (2014), the prevalence of bullying and cyberbullying was estimated at 55% and 18% respectively with the victims mostly being teased, threatened with harm kicked and hit mostly among boys. Most of the victims were also reluctant to report their ordeals and among those who reported being bullied on 50% were taken seriously. A similar study revealed that the traditional form of bullying was twice more as common as cyberbullying highlighting increased interventions to reduce the occurrence of bullying (Modecki *et al.,* 2014). Studies in Kenyan schools report a prevalence of bullying as high as 81.8% (Itegi, 2017; Ndetei *et al.,* 2007).

2.3.1 Types of Bullying

There are different types of bullying which are experienced by adolescents, and they can be categorised into verbal, social, physical and cyberbullying as discussed.

2.3.1.1 Verbal Bullying

This is the most common type of bullying, and it accounts for at least 70% of all reported cases. It is characterised by name calling, teasing and verbal threats which are made by a perpetrator. Unlike physical bullying, verbal bullying destroys an individual's self-image and self-esteem which is associated with the causation of depression and anxiety (Naidoo *et al.,* 2016). It also aggravates the problems that a particular victim may already be experiencing either at home or in other places. Additionally, this type of bullying is very hard to detect however, extreme cases of verbal bullying can lead to suicide (Azeredo *et al.,* 2015).

2.3.1.2 Social Bullying

This type of bullying mainly involves subjecting a victim to psychological harm though manipulation of the social system. In such instances, a perpetrator spreads rumours about the victim, backbites and deliberately excludes them from the social group through intimidation. The main objective in this type of bullying is to belittle, tease and ridicule an unpopular individual in their physical appearance, race, culture, the way they speak, academic achievements etc. The victims in such instances not only commit suicide but they can also commit homicide as due to extreme mental and social pressure (Weiss *et al.,* 2015).

2.3.1.3 Physical Bullying

This is a more direct form of bullying that involves hitting, slapping or punching a victim to take or damage their property. This type of bullying is easily recognizable as it is visible but these forms of bullying accounts for way less incidents. This form of bullying gets more attention from teachers and school personnel compared to other forms of bullying (Antiri, 2016).

2.3.1.4 Emotional

This form of bullying is characterised by psychological harm by emotionally making them uncomfortable, disturbed through emotional attacks. The victims are also intimidated and stalked by individuals of the same cohort or by their cliques who

gossip and talk about them. This type of bullying is often overlooked by parents and teachers and the victims mostly experience depression, loneliness, social dissatisfaction and low self-esteem (Antiri, 2016).

2.3.1.5 Cyberbullying

This is intentional aggression and power imbalance from perpetrators which occurs on the internet and through digital communication. These include platforms like Facebook, twitter, YouTube and other platforms. It is associated with harassment and sending of defamatory messages which are sent to victims (Antiri, 2016). Teenagers are increasingly being exposed to various online social sites that exposes them to various individuals, some being members of their social group who savagely abuse, harass, stalk and impersonate them. These platforms limit the control and authority of parents and such bullying incidents are bound to increase thus leading to depression or even result into suicide (George *et al.*, 2017).

2.3.2 Risk Factors Associated with Bullying Victimisation

There are a variety of risk factors that are associated with bullying victimisation in relation to various scientific studies. For example, a study conducted by Meng *et al.* (2023) revealed that physical bullying victimisation was associated with the parenting style while verbal, sexual and relational bullying victimisation were attached to individuals, family and school related factors. Aboagye *et al.* (2021) conducted a study in sub-Saharan Africa that showed a prevalence of 38% for bullying victimisation. The study also revealed that risk factors such as lack of peer support, truants and current users of marijuana had a higher likelihood of being victims of bullying. Neupane *et al.* (2020) notes that bullied adolescents are more likely to report a variety of mental health problems such as loneliness, anxiety, suicide attempts, school absenteeism because of fear and school truancy. Additionally, victims of bullying also have negative health behaviours and are constantly involved in physical altercations with their oppressors or other peers.

Body weight also acts as major risk factor for bullying victimisation among adolescents. According to Waasdorp *et al.*, (2018), adolescents who are normal weight

are least likely to be subjected to bullying victimisation. Overweight and obese adolescents had higher risks of being subjected to verbal, cyber and relational bullying victimisation. Additionally, the odds of cyber victimisation were likely to be higher compared to the other forms of bullying victimisation. On the other hand, a study conducted by Smith *et al.*, (2019) also pointed out that male adolescents have a higher likelihood of being victims of bullying compared to females. However, the likelihood of males being victims decreases as they approach mid adolescence. Female adolescents are more likely to be online victim's contrary to being offline victims. Katsaras *et al.*, (2018) also posit that both perpetrators and victims of bullying express suicidal ideation and have a higher likelihood of attempting suicides compared to non-involved adolescents. They also note that victims of bullying were more likely to attempt suicides that often-required medical treatment which cyberbullying victims were more likely to present suicidal ideation and attempting suicide.

Biswas *et al.* (2020) found out that factors such as male gender, parents' average socio-economic status, younger age were highly associated with bullying victimisation. Peer support, parental support and parents who understood the importance of spending more time with their children was likely to be associated with reduced risk of bullying victimisation.

Wang *et al.* (2019) conducted a study in Taiwan that captured 43 middle schools in Taipei city revealed that students in grade 7, students encountering conduct problems, community problems and the school environment (teacher/staff punishment) were all associated with bullying victimisation. Baiden and Tadeo (2019) conducted a study that captured a total of 9974 adolescents between the ages of 14-18 years. Findings from the study revealed that 1 in 10 adolescents were victims of bullying. The study also revealed that cyberbullying victims were highly likely to be prescription drug misusers. Other factors such as sexual orientation (Gay, lesbian or bisexual), cigarette smoking, cannabis usage, binge drinking, and illicit drug were also linked with prescription drug misuses which was in turn linked with bullying victimisation.

Tan *et al.* (2019) focused on assessing the prevalence and factors linked with bullying victimisation in a study that captured adolescents aged between 13-17 years. The

results showed that at least 16.2% of the respondents had been bullied over the last 30 days before the study. Factors that were strongly associated with bullying victimisation included physical attacks, illicit drug usage, engagement in physical fights, younger age and previous suicide attempts. Other significant factors included loneliness, truancy, symptoms of depression and anxiety, stress and making suicidal plans.

In the United States, Lebrun-Harris *et al.*, (2019) found out that the rate of bullying victimisation was highly associated with age and was linked with several health conditions linked with the victims such as trouble internalizing problems speech or language disorders, special healthcare needs, autism and victims with unmet needs for mental health treatment. Another study sought to investigate the factors associated with bullying victimisation among Lebanese adolescents. This study captured 1810 adolescents between the age of 14-17 years who were assessed from January to May 2019. The results showed that bullying victimisation was associated with factors such as child abuse, internet addition, social fear and avoidance. The study also noted the need to explore other factors such environmental and domestic concerns and adolescents with psychological disorders which might be positively associated with bullying victimisation (Malaeb *et al.*, 2020).

2.4 Lived Experiences of Bullying Victimisation, Depression and Suicidality among Adolescents

According to Víllora *et al.*, (2020) the establishment of social and psychological wellbeing of adolescents are critical in the development of relationships between adolescents and their peers which in turn influences their adulthood. In most instances, individuals who experience bullying victimisation end-up experiencing negative impacts mostly related to their physical and mental health. Under such circumstances, the adolescents become even more susceptible to bullying victimisation associated with changes in social relationships, biological changes and the eventual development of intense emotions. Halliday *et al.*, (2021) notes that victims of bullying are highly likely to experience negative psychosocial and academic outcomes. Bullying victims experience issues such as anxiety, depression, peer rejection, poor school performance and school connectedness over a short period of time 12 months to 8 years.

Additionally female victimized females suffered the worst in terms of anxiety, depression and suicidal ideation compared to victimized males.

In relation to a study conducted in China, Huang (2022) noted that bullying victims had poor performance when it comes to sciences, mathematics and reading tasks. The bullying climate and bullying victimisation influenced the academic performance and their sense of belonging. According to Galán *et al.*, (2021) identity based bullying victims experienced issues linked with their mental health, poor adjustment and violence outcomes. Shahrour *et al.* (2020) also notes that most victims of bullying were subjected to verbal bullying with girls being exposed to such forms of attacks contrary to boys. Additionally, adolescents from low socioeconomic status or with illiterate fathers were more likely to be exposed to further victimisation experience. Victims of bullying also reported poor attitudes from their teachers, parents and bystanders in terms of intervening. Similarly, Lee *et al.*, (2021) notes that Non-Suicidal Self-Injury (NSSI) was largely common among participants who experienced bullying. This was largely linked with psychotic like experiences, higher levels of depression and low academic achievement.

According to Li and Hesketh (2021), a majority of bullying victims reported lack of education on bullying within school institutions, limited management on bullying activities within the classroom and dormitory, failure from the teacher to recognize and punish the bullying perpetrators. Additionally, adolescents who were considered as low achieving or unattractive had a higher likelihood of being bullied. The victims also had minimal support from teachers and parents which in turn resulted to poor psychosocial wellbeing, poor academic performance and difficulties in socialization. Uludasdemir and Kucuk (2019) also notes that most of the adolescents between 12-17 years had experienced cyberbullying experiences which was also intertwined with their parents socio-demographic characteristics. Weinstein *et al.* (2021) also captured positive and negative experiences associated social media usage among suicidal adolescents. In essence, limited social media usage was mostly associated was mostly associated with positive adjustment towards suicidal behaviour. According Yang *et al.*, (2021), adolescents who experience cyberbullying victimisation were more likely

to attempt to commit suicide or commit self-harm. The female adolescents mostly experienced relational bullying compared to their counterparts.

2.5 Psychoeducation and Other Anti-Bullying Strategies

2.5.1 Psychoeducation

Within the context of anti-bullying efforts, psychoeducation takes the form of an educational strategy tailored for diverse stakeholders, encompassing students, educators, and parents. Its primary objective is to furnish these individuals with comprehensive knowledge, skills, and strategies essential for the prevention, recognition, and effective response to instances of bullying. The emphasis lies in elevating awareness, deepening understanding, and fostering competencies pertinent to the multifaceted nature of bullying (Guimond *et al.*, 2015; O'Moore & Minton, 2004).

This educational approach incorporates several key elements. Firstly, it endeavours to cultivate an awareness of the various manifestations of bullying, spanning physical, verbal, social, and cyberbullying (El Fatah *et al.*, 2022; Hensums *et al.*, 2022). Concurrently, it elucidates the detrimental consequences of bullying on both individuals and the broader school community. The approach delves into the dynamics underpinning bullying behaviours, unravelling the power imbalances, social intricacies, and the pivotal role of bystanders (Doumas *et al.*, 2019; Midgett & Doumas, 2020). This knowledge is instrumental in enabling individuals to comprehend the origins of bullying and strategize effective interventions.

Moreover, psychoeducation strives to instil an acute awareness of the warning signs associated with bullying. This awareness extends to both potential targets of bullying and those who may be exhibiting such behaviours (Hensums *et al.*, 2022; O'Moore & Minton, 2004). The goal is early detection and timely intervention. The approach extends beyond mere knowledge dissemination; it seeks to nurture empathy among students, fostering a culture of support and inclusivity. Students are encouraged to consider the emotions and perspectives of others, discouraging judgmental attitudes and promoting positive interpersonal relationships.

Additionally, psychoeducation encompasses the teaching of practical coping strategies tailored to various roles within the school community (Iuso *et al.*, 2022). This includes assertiveness training, conflict resolution skills, and techniques for emotional regulation (Avivar-Cáceres *et al.*, 2022; Gaffney *et al.*, 2021). Furthermore, the approach underscores the importance of proactive bystander intervention. Individuals are encouraged to play an active role in preventing and addressing bullying by safely and effectively intervening as bystanders. This involves supporting those who are targeted and reporting incidents to appropriate authorities.

In the broader landscape of anti-bullying initiatives, psychoeducation assumes a foundational role, contributing to the cultivation of a school culture characterized by respect, empathy, and a proactive stance against bullying behaviours (Avivar-Cáceres *et al.*, 2022; Gaffney *et al.*, 2021; Iuso *et al.*, 2022). This multifaceted educational strategy is integral to the creation of an environment conducive to the well-being and flourishing of all individuals within educational settings.

2.5.2 Other Anti-bullying Strategies

There are a variety of studies that have sought to determine the effectiveness of anti-bullying strategies in school institutions. For example, a study conducted in the US sought to evaluate the effectiveness of the Social and Emotional Learning strategy. The study revealed that this approach was significant in improving the extent of school engagement, school climate, interpersonal relationships with peers, and improving the well-being and academic capabilities of the students (Divecha and Brackett, 2020). In the United Kingdom, the KiVa anti-bullying strategy had significant results in reducing the extent of victimisation after a year of implementation. Findings from the study also revealed that the program required the exploration of various factors such as the role of educators and policies that would be instrumental in the prevention of bullying especially when incorporated into the anti-bullying strategy. According to Karyotaki *et al.* (2021) the CBT approach is effective in helping students to deal with depression but there is a need for optimization of the treatment based on the environment that it is implemented.

Few studies have been conducted in relation to the effectiveness of anti-bullying strategies in Africa. A study conducted in Mauritius and Sierra Leone revealed that bullying was associated with a variety of factors such as suicidal behaviour, loneliness, and marijuana usage. In light of these issues, there was the need to implement school-wide preventive interventions such as face-to-face counselling, substance use cessation therapy, positive behavioural strategies, and rational emotive behavioural education (Aboagye *et al.* 2021). In relation to a systematic review conducted by Sivaraman *et al.*, (2019) anti-bullying strategies are highly effective when conducted in high income countries as opposed to low and middle income countries. This points to a need for the implementation of strategies that are suited to deal with bullying in low- and middle-income countries.

In Kenya, Ombasa (2021) revealed that strategies for the management of bullying were relatively non-existent or poor. There is also the need for increased vigilance from teachers to help in the management of bullying. Another study conducted in Uasin Gishu also notes that there is a need for better interventions to help restrict bullying in high school through easy detection and reporting of such activities and students should be equipped with the needed abilities to handle bullying victimisation (Lugulu & Katwa, 2020).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Design

This study employed a concurrent parallel mixed methods design to comprehensively investigate the psychosocial dynamics affecting the mental health of adolescents in public secondary schools in Nairobi County, Kenya (Almeida, 2018; Halcomb & Hickman, 2015; Leech & Onwuegbuzie, 2009). The quantitative side of the study was addressed through a two-group post-test only quantitative design, focusing on objectives 1, 2, 3, and 5. Quantitative data collection involved identifying risk factors associated with bullying victimization, depression, and suicidal behavior, as well as assessing the impact of a teacher-led psychoeducation program on these psychosocial dynamics. The design facilitated rigorous evaluation, incorporating random assignment to intervention and control groups to minimize confounding variables. Simultaneously, a qualitative component addressed Objective 4 by exploring the lived experiences of adolescents through in-depth interviews, providing a nuanced understanding independent of the quantitative strand.

Data were collected at a single time point, 2 months post-intervention for the intervention arm and concurrently for the control arm. This design choice allowed for a focused examination of the intervention effect while ensuring cost-effectiveness and preventing autocorrelation in the measurement of outcomes. The qualitative and quantitative components operated independently, aligning with the distinct objectives they addressed. This comprehensive research design enhances the study's depth, providing a holistic understanding of the psychosocial dynamics impacting adolescents in the educational context, while offering valuable insights for future interventions and policy considerations.

3.2 Study Site

The study was carried out at 5 selected public secondary schools in Nairobi County. Nairobi County houses the capital city of Kenya, Nairobi, and at the time had a total

of 17 national, 19 extra county and 35 sub-county public secondary schools. More info about Nairobi County – population-wise, administrative divisions and the main socio-economic activities therein.

3.3 Study Population

The study population comprised secondary school students attending public secondary schools in Nairobi County.

3.3.1 Inclusion Criteria

The inclusion criteria for the study population were as follows:

1. Respondents whose parent/ guardian provided informed consent.
2. Respondents who provided assent to participate in the study.
3. Respondents who were in Form 1.

3.3.2 Exclusion Criteria

Eligible respondents were excluded based on the following criteria:

1. Respondents who had attended the selected secondary school for less than 1 month at the time of data collection.

3.4 Sample Size Determination

3.4.1 Quantitative

The sample size was calculated using GPower 3.1.9.4 software (Faul *et al.*, 2007, 2009) based on Fisher's exact test for comparing proportions between two independent groups, and a prevalence of bullying victimisation among Kenyan public secondary school students of 81.8% (Ndetei *et al.*, 2007) at 80% power, and an estimated difference in the proportion of 11.5%. This resulted in a sample size of 213 per group for a total sample size of 426. A nonresponse rate of 20% was applied resulting in a final minimum sample size of 534, to prevent underestimation (Bujang, 2021). The formula is shown below (Chow, 2017):

$$n = \frac{\left(Z_{\propto/2} + Z_{\beta}\right)^2 \times \left(p_1(1-p_1) + p_2(1-p_2)\right)}{(p_1 - p_2)^2}$$

Where,

n= the minimum required sample size per group (213)

$Z_{\propto/2}$=normal distribution critical value for alpha at the 95% confidence level (1.96)

Z_{β}=critical value for beta at 80% power (0.84)

p_1=expected proportion of bullying victimisation (0.818)

p_2=estimated proportion of bullying victimisation in the intervention group (0.703)

3.4.2 Qualitative

Each Focus Group Discussion comprised 8 to 12 students. In each school, in-depth interviews were done for at least 2 individuals: the head teacher and the person in charge of guidance and counselling at the school.

3.5 Anti-Bullying Teacher-Led Psychoeducation Intervention

3.5.1 Implementation Approach

An anti-bullying psychoeducation program was carried out in the intervention schools by means of psychoeducation for teachers. This psychoeducation comprised two presentations adapted from the resource: *Dealing with Bullying in Schools: A Training Manual for Teachers, Parents and other Professionals* (O'Moore and Minton, 2004). The presentations covered 3 main topics covered under Appendices A, B and D of the resource i.e., bullying, aggressive behaviour and harassment amongst young people in schools; what school management staff need to know; what classroom staff need to know and what students need to know.

A pragmatic approach to the intervention implementation was used, which meant that the psychoeducation intervention was applied to the Kenyan setting without alteration. The decision not to contextualize the intervention within the study was influenced by practical considerations, specifically speed and resource constraints – so as not to interfere with the running school program. This strategic choice aligns with the principles of efficiency and expediency in research, acknowledging the need to balance methodological rigor with real-world limitations. While acknowledging the potential limitation in external validity due to the lack of contextualization, the chosen approach allowed for a timely and resource-efficient exploration of the intervention's impact within the specified study population.

3.5.2 Implementation Procedure

Teachers were trained first by the research team, they then trained students in Form 2, 3 and 4 through the presentation about what students need to know about bullying. This was done as a single presentation and lasted between 1 and a half and 2 hours and was done 2 weeks before the Form 1 students joined the schools in January 2020. Post-training evaluations showed all trained students scored over 60%, which is an acceptable cutoff for evaluating the effectiveness of Training Interventions (Grohmann and Kauffeld, 2013), as shown in Table 3.1.

Table 3.1: Post Training Evaluation for Students on Anti-Bullying Training

Training Sections	Average Post-Training Scores
Knowledge about Bullying	78%
Things to do when bullied	68 %
Bullying Prevention in Secondary Schools	63%

3.6 Sampling Procedure

3.6.1 Quantitative

Schools in Nairobi County were stratified based on the characteristics of attendees, i.e., mixed schools, boys' schools and girls' schools which will form the 3 strata for the study. Computer generated random numbers were used to select the 6 schools for inclusion in the study as shown in Table 3.2.

Table 3.2: Schools Sampling Frame

Type of School	Population	Sample
Mixed	43	2
Boys' School	14	2
Girls' School	14	2
Total	71	6

In each school, a list of all eligible students was drawn up, stratified by Sex (for mixed schools). Each student was assigned a serial number. In each school the calculated sample size was adjusted using population proportional to size (PPS) method, to ensure that the study sample resembled the study population as closely as possible.

3.6.2 Qualitative

Focus group discussions (FGDs) were carried out in all the 5 schools (2 mixed, 1 boys' school and 2 girls' schools). Each FGD comprised 8 to 12 students selected purposively from amongst the students who did not fill the questionnaire. In each mixed school, separate FGDs were carried out for boys and girls, due to the sensitivity of some of the issues being discussed – after joint FGDs failed to yield sufficient data. In each of the single schools (boys only or girls only) a minimum of 2 FGDs proved sufficient in arriving at data saturation. Studies show that 2 to 3 FGDs are often sufficient to achieve saturation (Guest *et al.*, 2017; Hennink *et al.*, 2019). In these cases, the students were drawn from different streams to get good representation in the FGDs. In total 10 FGDs were carried out, 2 per school.

3.7 Data Collection Tools

3.7.1 Quantitative Data Collection Tools

A self-administered questionnaire was used to collect quantitative data (see Appendix II). This questionnaire contained a socio-demographic section as well as questions collecting data on the study objectives as follows:

i. **Socio-Demographic Section:** This section assessed the characteristics of the students and antecedent households. Data on the sociodemographic features of

students, including their age, gender, primary caregiver, sexual activity, romantic involvement, and their use of alcohol, tobacco, and drugs within the past 30 days and throughout their lifetime. The students' socioeconomic status was also evaluated by assessing the presence or ownership of specific items in their household. Items with higher values were given more weight than those with lower values, and the socioeconomic status index was rated on a scale of 0 to 30. The index was divided into three categories: low (0-10), middle (11-20), and high (21+). This approach of utilizing household assets to measure pragmatic socioeconomic status has been employed in other research studies (Kabudula *et al.*, 2017; Mokaya *et al.*, 2016; Tajik and Majdzadeh, 2014).

ii. **Adolescent Peer Relations Instrument (APR):** the 18-item bullying victimisation scale of the APR assessed bullying victimisation among adolescents in this study (Mucherah *et al.*, 2018; Parada, 2000). A score of 19 or higher classified a respondent as having experienced bullying victimisation. The APR has previously used and validated among Kenyan secondary school students (Mucherah *et al.*, 2018). The scale is made up of 3 subscales assessing: physical, social and verbal victimisation.

iii. **Suicidal Behaviour Questionnaire-revised (SBQ-R):** This assessed four aspects of suicidality (Osman *et al.*, 2001). A respondent in the study was adjudged to be at risk of suicide based on a score of 7 or higher in the SBQ-R (Adjorlolo *et al.*, 2020; Mugambi *et al.*, 2020).

iv. **Patient Health Questionnaire modified for Adolescents (PHQ-A):** This scale assessed the prevalence and severity of depression among adolescents (Richardson *et al.*, 2010). The categorization of a respondent as likely depressed or not was based upon a cut off score of 10 or more (Adachi *et al.*, 2020; Johnson *et al.*, 2005; Levis *et al.*, 2019; Osborn *et al.*, 2020), which is the recommended cut-off for adolescents and has also been previously used in Kenya (Johnson *et al.*, 2002; Kumar *et al.*, 2021; Osborn *et al.*, 2020).

3.7.2 Qualitative Data Collection Tools

An in-depth interview guide (for teachers, Appendix III) and focus group discussion guide (for students, Appendix IV) were used to assist in the gathering of qualitative

data. The guides addressed the issues around the lived experiences of the students around bullying victimisation, depression, and suicidal behaviour as well as strategies to address them.

3.7.3 Reliability and Validity

Before data collection, the questionnaire was pre-tested among selected form two students (30 in number – based on the central limit theorem) in the control schools to ensure the validity of the study tool. This was aimed at ensuring that the study questions were clear, easily understood and that they can yield responses for the variables under study. Additionally, the data collection tools being used are validated for use with adolescent populations to measure the variables of interest in this study and have previously been used in Kenya (Mucherah *et al.*, 2018; Osborn *et al.*, 2020). The reliability (internal consistency) of the scales used in data collection was assessed using Cronbach's alpha coefficient. The results of the analysis are shown in Table 3.3.

Table 3.3: Reliability Analysis

Scale	Cronbach's α	Comments
Adolescent Peer Relations Instrument (APR)	.88	Good
Suicidal Behaviour Questionnaire-revised (SBQ-R)	.84	Good
Patient Health Questionnaire-Adolescent (PHQ-A)	.74	Acceptable

3.8 Data Collection

3.8.1 Quantitative Data Collection

A semi-structured questionnaire was used to collect data among the students. Once selected to participate in the study, the students were ushered into a classroom and provided with questionnaires that they filled in on their own. The filling of the questionnaire is lasted an average of 20 to 30 minutes.

3.8.2 Qualitative Data Collection

As the questionnaire was being filled, 8-12 students were selected purposively to participate in the focus group discussions. In each school, two focus group discussions

proved sufficient to achieve data saturation. In the mixed schools four focus groups were held, 2 for boys and 2 for girls to achieve saturation. This resulted in a total of 14 FGDs across the five schools. Each FGD lasted approximately 30 to 45 minutes. In each focus group discussion, the researcher moderated discussions, audio recorded, and a research assistant took notes to aid in the capture of all the data pertinent to the study. In-depth interviews (IDIs) were carried out among teachers before the training, for about 30-45 minutes each. In each school 2 IDIs were conducted, yielding a total of 10 IDIs.

3.9 Data Management

3.9.1 Data Quality Control

Each questionnaire was checked for completeness at the study sites and serialized using a unique alphanumeric code. The questionnaire was double-entered into Microsoft Access using the unique serial number, and thereafter cross-validation was performed to ensure that the entry is clean and accurate. This data was then exported to the STATA 14 for analysis. The audio recordings of the FGDs and IDIs were transcribed verbatim. As a qualitative data quality control measure, the transcripts were checked and rechecked by both the researcher and a data analyst and compared against the audio recordings several times. This ensured that the transcripts captured every aspect of the recordings. NVivo version 10 software was used for the analysis of qualitative data. The notes were also used to supplement this.

3.9.2 Data Analysis

3.9.2.1 Quantitative Data Analysis

The data was analysed using STATA version 14. To describe the variables of interest in the study, frequency distributions as well as means and standard deviations were computed as appropriate for data type. Given that the dependent variables were common (>10%), prevalence ratios were used as a measure of risk instead of odd ratios, as recommended by McNutt *et al.* (2003). A generalized linear model (GLM) with a backward stepwise Poisson distribution and a log-link function was used to

assess the risk factors of bullying victimisation, depression and suicidality giving both unadjusted prevalence ratios (uPR) and adjusted prevalence ratios (aPR). Variables were selected for inclusion in the multivariable model based on a relaxed p-value of 0.2 in the univariable analysis, as recommended by Chowdhury and Turin (2020) and Grant *et al.*, (2019) to avoid accidentally excluding important adjustment variables due to stochastic variability. The effect of the teacher-led psychoeducation program was assessed using the Pearson's Chi-square test. Statistical significance in the multivariable analysis was determined based on a p-value of less than 0.05.

3.9.2.2 Qualitative Data Analysis

In addressing Objective 4, which aimed to explore the lived experiences of bullying victimisation, depression, and suicidality among adolescents in public secondary schools in Nairobi County, Kenya, a rigorous qualitative data analysis approach was employed. The data, gathered through focus group discussions and in-depth interviews, underwent a thorough thematic analysis to derive meaningful insights. NVivo 10 was used for qualitative analysis.

The first step in this qualitative data analysis involved a meticulous examination of the transcripts and notes obtained from the focus group discussions and in-depth interviews. This process began with a comprehensive re-reading of the qualitative data to identify patterns, recurring themes, and emergent insights related to the lived experiences of the participants.

Subsequently, the identified patterns and themes were systematically coded or labelled. This coding process involved categorizing segments of the data into groups based on similar words, recurring phrases, or shared concepts. The codes served to distil and organize the rich qualitative information into manageable and analysable units. Following the coding phase, the codes were utilized to identify overarching patterns within the dataset. These patterns, in turn, led to the initial formation of themes that encapsulated the essence of the lived experiences described by the participants. The iterative nature of this process involved multiple rounds of reviewing, refining, and renaming themes to ensure their accuracy, relevance, and coherence.

To enhance the robustness and credibility of the analysis, the final report underwent several iterations. Themes were clearly defined, and supporting quotations from the participants were carefully selected and incorporated into the analysis. This inclusion of participant quotations not only served to bolster the credibility of the themes but also provided a direct link to the voices and perspectives of the individuals whose experiences were being explored. In summary, the qualitative data analysis for Objective 4 employed a thematic analysis approach, involving careful coding, pattern identification, and theme development. The iterative nature of the process, coupled with the inclusion of participant quotations, contributed to a nuanced and comprehensive exploration of the lived experiences of bullying victimisation, depression, and suicidality among adolescents in public secondary schools in Nairobi County, Kenya.

3.10 Ethical Considerations

Before commencement of the study, scientific and ethical approval was sought from the University of Eastern Africa Baraton Research and Ethics Committee (B132019 and renewed as UEAB/REC/02/03/2020 – Appendix V) and the National Council for Science Technology and Innovation (NACOSTI) research License (A23752 – Appendix VI). This was to ensure that the study followed the principles of respect, beneficence, and justice and to protect and prevent unnecessary risk to respondents.

Additionally, authorization letters were also received from the Principal Secretary State Department for Basic Education and Early Learning, the Nairobi County Regional Commissioner, the Nairobi County Education Office and Subcounty Education Offices (Appendix VII) as well as permission from the administration of the schools selected to participate in the study. Informed consent was sought from the parents or guardians of the students by giving their consent in an informed consent form (Appendix I). Additionally, students were requested to read through and sign an assent form to demonstrate their acquiescence to participate in the study (Appendix I).

Access to the study data was limited to protect the privacy of respondents and ensure the confidentiality of the data. No personal identifiers were collected or shown on the data set, instead, a unique alphanumeric code was used. The participation of students

in the study was on a voluntary basis, and their rights to withdraw at any time for any reason whatsoever was upheld. For the interviews, no personal identifiers were collected while carrying out the interviews and the identities of the participants were hidden.

3.11 Study Limitations and Delimitations

The study encountered certain limitations that warrant acknowledgment. Firstly, the utilization of a two-group post-test only design, while not considered the gold standard in experimental research, was deemed the most pragmatic choice within the confines of contextual constraints and budgetary limitations. Although the pre-test phase is typically preferred for experimental designs, its omission in this study was intentional and justified. The two-group post-test design facilitated randomized allocation to control or intervention arms, effectively averting the potential confounding influence that a pre-test might have exerted on the variables under investigation.

Moreover, the selection of a post-test only control group design was intentional, leveraging its advantages over a pretest-post-test group design regarding internal validity. This design choice enhances the study's ability to establish a more robust causal association between the teacher-led psychoeducation program and its impact on bullying victimisation, depression, and suicidality among adolescents in public secondary schools.

However, it is crucial to acknowledge the limitation stemming from the lack of adaptation or contextualization of the study intervention. The generalizability of the findings may be influenced by the cultural and contextual specificity of the teacher-led psychoeducation program, as it was not tailored to specific nuances within the study population. This aspect introduces a potential limitation in the external validity of the intervention, emphasizing the need for cautious interpretation of results beyond the study context. In sum, while the study design and analytical choices were made deliberately to address specific practical and methodological considerations, the limitations, including the absence of intervention adaptation, should be duly considered in the interpretation and generalization of the study findings.

CHAPTER FOUR

RESULTS

4.1 Response Rate

Nonresponse during data collection resulted in a study sample of 539 compared to the estimated minimum sample size of 526 at 80% power. Based on the achieved sample the study was sufficiently powered to detect a 6.5% difference in proportion at 86% power. This means that the study was sufficiently powered to answer the research questions. There was a total of 248 respondents in the intervention arm and 291 in the control arm of the study.

4.2 Socio-demographic Characteristics of Respondents

Majority of the respondents were female (n=325, 60.3%) and aged between 11 and 14 years (n=292, 54.2%). The mean age was 14.6 years (SD=1.25). The breakdown of socio-demographic characteristics for respondents in this study is shown in Table 4.1.

Table 4.1: Socio-demographic Characteristics of the Respondents

Variable	Category	Combined		Control		Intervention	
		n	%	n	%	n	%
Sex	Male	214	39.7	106	42.7	108	37.1
	Female	325	60.3	142	57.3	183	62.9
School Tier	National	200	37.1	0	0.0	168	57.7
	County	168	31.2	145	58.5	26	8.9
	Extra county	171	31.7	103	41.5	97	33.3
Type of	Single	368	68.3	103	41.5	265	91.1
School	Mixed	171	31.7	145	58.5	26	8.9
Religion	Christian	420	77.9	193	77.8	227	78.0
	Muslim	119	22.1	55	22.2	64	22.0
Social	Low	149	27.6	93	37.5	56	19.2
economic	Middle	216	40.1	107	43.1	109	37.5
status	High	174	32.3	48	19.4	126	43.3
Age	>=14	292	54.2	95	38.3	197	67.7
category	15+	247	45.8	153	61.7	94	32.3

4.2.1 Descriptive Statistics of Dependent Variables

Based on the psychometric scale cut-off scores respondents were categorized as either depressed (n=78, 14.5%), at risk of suicide (n=108, 20.0%) or having experienced bullying victimisation (n=462, 85.7%). For the victimisation subscales, verbal victimisation was highest (n=421, 78.1%). This is shown in Table 4.2.

Table 4.2: Frequency Distribution of the Study Dependent Variables

Variable	Category	Combined		Control		Intervention	
		n	%	n	%	n	%
Depression (PHQ-A)	No	461	85.5	213	85.9	248	85.2
	Yes	78	14.5	35	14.1	43	14.8
Bullying victimisation	No	77	14.3	45	18.1	32	11.0
(APR)	Yes	462	85.7	203	81.9	259	89.0
Social victimisation	No	188	34.9	98	39.5	90	30.9
	Yes	351	65.1	150	60.5	201	69.1
Physical victimisation	No	204	37.8	98	39.5	106	36.4
	Yes	335	62.2	150	60.5	185	63.6
Verbal Victimisation	No	118	21.9	66	26.6	52	17.9
	Yes	421	78.1	182	73.4	239	82.1
Suicide risk (SBQ-R)	No	431	80.0	199	80.2	232	79.7
	Yes	108	20.0	49	19.8	59	20.3

4.2.2 Descriptive Statistics of Risk Factors

Almost one-fifth (n=95, 17.6%) of the study respondents reported that they were involved in romantic relationships, and 12.8% were sexually active (n=69). Lifetime alcohol use stood at 12.2% (n=66) with 2.4% of respondents reporting that they had used alcohol in the previous 30 days (n=13), as shown in Table 4.3.

Table 4.3: Distribution of Risk Factors among Respondents

Variable	Category	Combined		Control		Intervention	
		n	%	n	%	n	%
Romantic relationship	No	444	82.4	212	85.5	232	79.7
	Yes	95	17.6	23	14.5	59	20.3
Sexually active	No	470	87.2	221	89.1	249	85.6
	Yes	69	12.8	27	10.9	42	14.4
Lifetime alcohol use	No	473	87.8	219	88.3	254	87.3
	Yes	66	12.2	29	11.7	37	12.7
Past 30-day alcohol use	No	526	97.6	240	96.8	286	98.3
	Yes	13	2.4	8	3.2	5	1.7
Lifetime drug use	No	489	90.7	219	88.3	270	92.8
	Yes	50	9.3	21	11.7	21	7.2
Past 30-day drug use	No	527	97.8	241	97.2	286	98.3
	Yes	12	2.2	7	2.8	5	1.7
Lifetime tobacco use	No	522	96.8	238	96.0	284	97.6
	Yes	17	3.2	10	4.0	7	2.4
Past 30-day tobacco use	No	533	98.9	243	98.0	290	99.7
	Yes	6	1.1	5	2.0	1	0.3
Caregiver	Both	358	66.4	167	67.3	191	65.6
	Father	13	2.4	7	2.8	6	2.1
	Mother	114	21.2	51	20.6	63	21.6
	Guardian	54	10.0	23	9.3	31	10.7

4.3 Factors associated with bullying victimisation among adolescents joining public secondary schools

4.3.1 Cross-tabulation with Socio-demographic and Risk Factor Variables

A cross-tabulation of the bullying victimisation variables with the socio-demographic and risk factor variables was carried out. Almost all students who were depressed (92.4%) or at risk of suicide (93.5%) had experienced some form bullying victimisation. The results are shown in Table 4.4.

Table 4.4: Crosstabulation of Victimisation, Socio-demographic, and Risk Factor Variables

Variable	Category	Any Bullying Victimisation				Verbal Victimisation				Social Victimisation				Physical Victimisation			
		No		Yes		No		Yes		No		Yes		No		Yes	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Depression	No	51	26.0	145	74.0	68	34.7	128	65.3	97	49.5	99	50.5	98	50.0	98	50.0
	Yes	26	7.6	317	92.4	50	14.6	293	85.4	91	26.5	252	73.5	106	30.9	237	69.1
Sex	Male	14	6.5	200	93.5	27	12.6	187	87.4	62	29.0	152	71.0	58	27.1	156	72.9
	Female	63	19.4	262	80.6	91	28.0	234	72.0	126	38.8	199	61.2	146	44.9	179	55.1
Type of School	Single	51	13.9	317	86.1	84	22.8	284	77.2	126	34.2	242	65.8	146	39.7	222	60.3
	Mixed	26	15.2	145	84.8	34	19.9	137	80.1	62	36.3	109	63.7	58	33.9	113	66.1
Religious affiliation	Christian	51	12.1	369	87.9	78	18.6	342	81.4	141	33.6	279	66.4	150	35.7	270	64.3
	Muslim	26	21.8	93	78.2	40	33.6	79	66.4	47	39.5	72	60.5	54	45.4	65	54.6
Social economic status	Low	33	22.1	116	77.9	39	26.2	110	73.8	68	45.6	81	54.4	71	47.7	78	52.3
	Middle	28	13.0	188	87.0	53	24.5	163	75.5	68	31.5	148	68.5	79	36.6	137	63.4
	High	16	9.2	158	90.8	26	14.9	148	85.1	52	29.9	122	70.1	54	31.0	120	69.0
Age category	>=14	40	13.7	252	86.3	68	23.3	224	76.7	97	33.2	195	66.8	106	36.3	186	63.7
	15 to 18	37	15.0	210	85.0	50	20.2	197	79.8	91	36.8	156	63.2	98	39.7	149	60.3
Suicide Risk	No	70	16.2	361	83.8	106	24.6	325	75.4	166	38.5	265	61.5	171	39.7	260	60.3
	Yes	7	6.5	101	93.5	12	11.1	96	88.9	22	20.4	86	79.6	33	30.6	75	69.4
Romantic relationship	No	75	16.9	369	83.1	114	25.7	330	74.3	170	38.3	274	61.7	182	41.0	262	59.0
	Yes	2	2.1	93	97.9	4	4.2	91	95.8	18	18.9	77	81.1	22	23.2	73	76.8
Sexually active	No	71	15.1	399	84.9	111	23.6	359	76.4	168	35.7	302	64.3	183	38.9	287	61.1
	Yes	6	8.7	63	91.3	7	10.1	62	89.9	20	29.0	49	71.0	21	30.4	48	69.6
Lifetime alcohol use	No	75	15.9	398	84.1	113	23.9	360	76.1	177	37.4	296	62.6	193	40.8	280	59.2
	Yes	2	3.0	64	97.0	5	7.6	61	92.4	11	16.7	55	83.3	11	16.7	55	83.3
Past 30-day alcohol use	No	77	14.6	449	85.4	118	22.4	408	77.6	186	35.4	340	64.6	203	38.6	323	61.4
	Yes	0	0.0	13	100	0	0.0	13	100	2	15.4	11	84.6	1	7.7	12	92.3
Lifetime drug use	No	74	15.1	415	84.9	115	23.5	374	76.5	176	36.0	313	64.0	194	39.7	295	60.3
	Yes	3	6.0	47	94.0	3	6.0	47	94.0	12	24.0	38	76.0	10	20.0	40	80.0

Variable	Category	Any Bullying Victimisation				Verbal Victimisation				Social Victimisation				Physical Victimisation			
		No		Yes		No		Yes		No		Yes		No		Yes	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Past 30-day drug use	No	76	14.4	451	85.6	117	22.2	410	77.8	185	35.1	342	64.9	202	38.3	325	61.7
	Yes	1	8.3	11	91.7	1	8.3	11	91.7	3	25.0	9	75.0	2	16.7	10	83.3
Lifetime tobacco use	No	76	14.6	446	85.4	117	22.4	405	77.6	181	34.7	341	65.3	199	38.1	323	61.9
	Yes	1	5.9	16	94.1	1	5.9	16	94.1	7	41.2	10	58.8	5	29.4	12	70.6
Past 30-day tobacco use	No	77	14.4	456	85.6	118	22.1	415	77.9	187	35.1	346	64.9	201	37.7	332	62.3
	Yes	0	0.0	6	100	0	0.0	6	100	1	16.7	5	83.3	3	50.0	3	50.0
Caregiver	Parents	51	14.2	307	85.8	76	21.2	282	78.8	125	34.9	233	65.1	139	38.8	219	61.2
	Father	1	7.7	12	92.3	2	15.4	11	84.6	4	30.8	9	69.2	1	7.7	12	92.3
	Mother	17	14.9	97	85.1	24	21.1	90	78.9	41	36.0	73	64.0	43	37.7	71	62.3
	Guardian	8	14.8	46	85.2	16	29.6	38	70.4	18	33.3	36	66.7	21	38.9	33	61.1

4.3.2 Univariable Poisson Regression Analysis of Factors Associated with Bullying Victimisation

Univariable Poisson regression of factors associated with the bullying victimisation variables was carried out and unadjusted prevalence ratios (uPR) provided. The results of the regression analysis showed that depression was associated with any bullying victimisation (uPR=1.25, CI: 1.03-1.52; p=.026), verbal victimisation (uPR=1.31, CI: 1.06-1.61; p=.011), social victimisation (uPR=1.45, CI: 1.15-1.83; p=.002) and physical victimisation (uPR=1.38, CI: 1.09-1.75; p=.007). Male respondents were more likely to experience verbal (uPR=1.21, CI: 1.01-1.47; p=.048) and physical victimisation (uPR=1.32, CI: 1.07-1.64; p=.010). However, there was no statistically significant gender difference in the composite bullying victimisation (uPR=1.16, CI: 0.96-1.39; p=.115) and social victimisation (uPR=1.16, CI: 0.94-1.43; p=.168). Those at risk of suicide were more likely to have experienced social victimisation (uPR=1.30, CI:1.01-1.65; p=0.037). Being in a romantic relationship was associated with a higher likelihood of verbal (uPR=1.29, CI: 1.02-1.63; p=.032), social (uPR=1.31, CI: 1.02-1.69; p=.035) and physical victimisation (uPR=1.30, CI: 1.00-1.69; p=.046). Lifetime use of alcohol was associated with physical victimisation (uPR=1.41, CI:1.05-1.88, p=.020). The results if the univariable Poisson regression analyses are shown in Table 4.5.

Table 4.5: Factors Associated with Bullying Victimisation among Adolescents Joining Public Secondary Schools (Unadjusted Prevalence Ratios)

Variable	Category	Any Bullying Victimisation		Verbal victimisation		Social Victimisation		Physical victimisation	
		uPR (95% CI)	p-value	uPR (95% CI)	p-value	uPR (95% CI)	p-value	uPR (95% CI)	p-value
Depression	No	REF		REF		REF		REF	
	Yes	1.25 (1.03-1.52)	**0.026**	1.31(1.06-1.61)	**0.011**	1.45(1.15-1.83)	**0.002**	1.38(1.09-1.75)	**0.007**
Sex	Male	1.16(0.96-1.39)	0.115	1.21(1.01-1.47)	**0.048**	1.16(0.94-1.43)	0.168	1.32(1.07-1.64)	**0.010**
	Female	REF		REF		REF		REF	
Type of School	Single	1.02(0.83-1.24)	0.875	REF		1.03(0.82-1.29)	0.787	REF	
	Mixed	REF		1.04(0.85-1.27)	0.719	REF		1.10(0.87-1.37)	0.430
Religious affiliation	Christian	1.12(0.89-1.41)	0.313	1.23(0.96-1.57)	0.102	1.10(0.85-1.42)	0.480	1.18(0.90-1.54)	0.238
	Muslim	REF		REF		REF		REF	
Social economic status	Low	REF		REF		REF		REF	
	Middle	1.12(0.89-1.41)	0.345	1.02(0.80-1.30)	0.859	1.26(0.96-1.65)	0.094	1.21(0.92-1.60)	0.176
	High	1.17(0.92-1.48)	0.208	1.15(0.90-1.47)	0.26**1**	1.29(0.97-1.70)	0.076	1.32(0.99-1.75)	0.058
Age category	>=14	1.02(0.85-1.22)	0.973	REF		1.06(0.87-1.31)	0.604	1.06(0.85-1.31)	0.621
	15 to 18	REF		1.04(0.86-1.26)	0.690	REF		REF	
Suicide Risk	No	REF		REF		REF		REF	
	Yes	1.12(0.89-1.39)	0.328	1.18(0.94-1.48)	0.157	1.30(1.01-1.65)	**0.037**	1.15(0.89-1.49)	0.283
Romantic relationship	No	REF		REF		REF		REF	
	Yes	1.18(0.93-1.48)	0.158	1.29(1.02-1.63)	**0.032**	1.31(1.02-1.69)	**0.035**	1.30(1.00-1.69)	**0.046**
Sexually active	No	REF		REF		REF		REF	
	Yes	1.08(0.82-1.40)	0.591	1.18(0.90-1.54)	0.238	1.11(0.82-1.49)	0.516	1.14(0.84-1.55)	0.403
Lifetime alcohol use	No	REF		REF		REF		REF	
	Yes	1.15(10.89-1.50)	0.292	1.21(0.93-1.59)	0.161	1.33(1.00-1.78)	0.051	1.41(1.05-1.88)	**0.020**
Past 30-day alcohol use	No	REF		REF		REF		REF	
	Yes	1.17(0.67-2.03)	0.574	1.29(0.74-2.24)	0.367	1.31(0.72-2.39)	0.379	1.50(0.84-2.67)	0.166
Lifetime drug use	No	REF		REF		REF		REF	
	Yes	1.11(0.82-1.50)	0.507	1.22(0.90-1.66)	0.183	1.19(0.85-1.66)	0.317	1.32(0.95-1.85)	0.094
Past 30-day drug use	No	REF		REF		REF		REF	

Variable	Category	Any Bullying Victimisation		Verbal victimisation		Social Victimisation		Physical victimisation	
		uPR (95% CI)	p-value	uPR (95% CI)	p-value	uPR (95% CI)	p-value	uPR (95% CI)	p-value
	Yes	1.07(0.59-1.95)	0.822	1.18(0.65-2.14)	0.591	1.16(0.60-2.24)	0.668	1.35(0.72-2.53)	0.348
Lifetime tobacco use	No	REF		REF		REF		REF	
	Yes	1.10(0.67-1.81)	0.704	1.21(0.74-2.00)	0.449	0.90(0.48-1.69)	0.744	1.14(0.64-2.03)	0.654
Past 30-day tobacco use	No	REF		REF		REF		REF	
	Yes	1.17(0.52-2.61)	0.704	1.28(0.57-2.88)	0.543	1.28(0.53-3.10)	0.579	0.80(0.26-2.50)	0.705
Caregiver	Parents	1.01(0.74-1.37)	0.966	1.12(0.80-1.57)	0.514	0.98(0.69-1.39)	0.893	1.00(0.69-1.44)	0.996
	Father	1.08(0.57-2.05)	0.804	1.20(0.61-2.35)	0.590	1.04(0.50-2.16)	0.919	1.51(0.78-2.92)	0.221
	Mother	1.00(0.70-1.42)	0.995	1.12(0.77-1.64)	0.552	0.96(0.64-1.43)	0.843	1.02(0.67-1.54)	0.928
	Guardian	REF		REF		REF		REF	

4.3.3 Multivariable Poisson Regression Analysis of Factors Associated with Bullying Victimisation

Factors that were associated with bullying victimisation at univariable level were considered together using backward-stepwise Poisson regression as shown in Table 4.6. The results of the regression analysis show that depression remained as the only statistically significant factor associated with any bullying victimisation (aPR=1.24, CI: 1.02-1.51; p=.033), verbal victimisation (aPR=1.28, CI: 1.04-1.58; p=.020) and social victimisation (aPR=1.42, CI: 1.13-1.80; p=.003). For physical victimisation, two factors remained statically significant in the multivariable model: depression (aPR=1.33, CI: 1.05-1.68; p=.019) and sex (aPR=1.27, CI: 1.02-1.58; p=.031) with males 1.27 times more likely to experience physical victimisation compared to females

Table 4.6: Factors Associated with Bullying Victimisation among Adolescents Joining Public Secondary Schools (Adjusted Prevalence Ratios)

Variable	Category	Any Bullying Victimisation		Verbal victimisation		Social Victimisation		Physical victimisation	
		aPR (95% CI)	p-value	aPR (95% CI)	p-value	aPR (95% CI)	p-value	aPR (95% CI)	p-value
Depression	No	REF		REF		REF		REF	
	Yes	1.24(1.02-1.51)	**0.033**	1.28 (1.04-1.58)	**0.020**	1.42(1.13-1.80)	**0.003**	1.33(1.05-1.68)	**0.019**
Sex	Male	1.14(0.95-1.38)	0.150	1.19(0.98-1.44)	0.078			1.27(1.02-1.58)	**0.031**
	Female	REF		REF				REF	
Religious affiliation	Christian			1.19(0.93-1.52)	0.169				
	Muslim			REF					
Lifetime alcohol use	No					REF		REF	
	Yes					1.25(0.94-1.67)	0.129	1.27(0.95-1.71)	0.106

4.5 Factors associated with depression among adolescents joining public secondary schools

Univariable and multivariable Poisson regression was used to assess the factors associated with depression among adolescents joining public secondary schools in Nairobi County, Kenya.

4.5.1 Univariable Poisson Regression Analysis of Factors Associated with Depression among Adolescents Joining Public Secondary Schools

The study found several factors associated with depression in univariable analysis, including bullying victimisation, risk of suicidal behaviour, romantic relationships, sexual activity, lifetime alcohol use, lifetime drug use, past 30-day drug use, and lifetime tobacco use. This is seen in Table 4.7.

Table 4.7: Factors Associated with Depression among Adolescents Joining Public Secondary Schools (Unadjusted Prevalence Ratios)

Variable	Category	Depression (PHQ-A >=10)				Univariable analysis		
		No		Yes		uPR	(95% CI)	p-value
		n	%	n	%			
Bullying victimisation	No	74	96.1	3	3.9	REF		
	Yes	387	83.77	75	16.23	4.17	1.31-13.21	**0.015**
Sex	Male	180	84.11	34	15.89	1.17	0.75-1.84	0.483
	Female	281	86.46	44	13.54	REF		
School tier	National	172	86	28	14	REF		
	Extra-county	144	85.71	24	14.29	1.02	0.59-1.76	0.942
	County	145	84.8	26	15.2	1.09	0.64-1.85	0.762
Type of School	Single	145	84.8	26	15.2	REF		
	Mixed	352	83.81	68	16.19	1.08	0.67-1.72	0.760
Religious affiliation	Christian	109	91.6	10	8.4	1.93	0.99-3.74	0.053
	Muslim	130	87.25	19	12.75	REF		
Social economic status	Low	183	84.72	33	15.28	REF		
	Middle	148	85.06	26	14.94	1.2	0.68-2.11	0.530
	High	248	84.93	44	15.07	1.17	0.65-2.12	0.599
Age category	>=14	213	86.23	34	13.77	1.09	0.7-1.71	0.692
	15 to 18	391	90.72	40	9.28	REF		
Suicide Risk	No	70	64.81	38	35.19	REF		
	Yes	389	87.61	55	12.39	3.79	2.43-5.91	**<0.001**
Romantic relationship	No	72	75.79	23	24.21	REF		
	Yes	409	87.02	61	12.98	1.95	1.2-3.18	**0.007**
Sexually active	No	52	75.36	17	24.64	REF		
	Yes	419	88.58	54	11.42	1.9	1.11-3.25	**0.019**
Lifetime alcohol use	No	42	63.64	24	36.36	REF		
	Yes	450	85.55	76	14.45	3.19	1.97-5.15	**<0.001**
Past 30-day alcohol use	No	11	84.62	2	15.38	REF		
	Yes	427	87.32	62	12.68	1.06	0.26-4.34	0.930
Lifetime drug use	No	34	68	16	32	REF		
	Yes	454	86.15	73	13.85	2.52	1.46-4.37	**0.001**
Past 30-day drug use	No	7	58.33	5	41.67	REF		
	Yes	450	86.21	72	13.79	3.01	1.22-7.44	**0.017**
Lifetime tobacco use	No	11	64.71	6	35.29	REF		
	Yes	457	85.74	76	14.26	2.56	1.11-5.88	**0.027**
Past 30-day tobacco use	No	4	66.67	2	33.33	REF		
	Yes	308	86.03	50	13.97	2.34	0.57-9.52	0.236
Caregiver	Parents	11	84.62	2	15.38	1.51	0.6-3.78	0.381
	Father	93	81.58	21	18.42	1.66	0.32-8.56	0.544
	Mother	49	90.74	5	9.26	1.99	0.75-5.28	0.167
	Guardian	27	13.78	27	7.87	REF		

4.5.2 Multivariable Poisson Regression Analysis of Factors Associated with Depression among Adolescents Joining Public Secondary Schools

In the multivariable analysis only suicide risk (aPR=3.07, CI: 1.94-4.85; p<.001) and lifetime alcohol use (aPR=2.24, CI: 1.36-3.68; p=0.001) remained as statistically significant factors associated with depression, as seen in Table 4.8.

Table 4.8: Factors Associated with Depression among Adolescents Joining Public Secondary Schools (Adjusted Prevalence Ratios)

Variable	Category	Multivariable analysis		
		aPR	(95% CI)	p-value
Bullying victimisation	No	REF		
	Yes	2.88	0.90-9.24	0.075
Suicide Risk	No	REF		
	Yes	3.07	1.94-4.85	**<0.001**
Lifetime alcohol use	No	REF		
	Yes	2.24	1.36-3.68	**0.001**

4.6 Factors associated with risk of suicidal behaviour among adolescents joining public secondary schools in Nairobi County, Kenya

Univariable and multivariable Poisson regression was used to assess the factors associated with the risk of suicidal behaviour among adolescents joining public secondary schools in Nairobi County, Kenya.

4.6.1 Univariable Poisson Regression Analysis of Factors Associated with the Risk of Suicidal Behaviour among Adolescents Joining Public Secondary Schools in Nairobi County

Depression, lifetime alcohol use, and past 30-day alcohol use were identified as significant risk factors for suicidal behaviour with a 95% confidence level in the univariable analysis. Adolescents who reported depressive symptoms had a higher prevalence rate of suicidal behaviour (uPR=3.28, C.I. 1.93-5.59, p<0.001) compared to those who did not report such symptoms. Similarly, adolescents with a history of lifetime alcohol use had a higher prevalence rate of suicidal behaviour (uPR=2.16, C.I. 1.38-3.38, p=0.001) than those without such a history. Additionally, past 30-day alcohol use was also significantly associated with suicidal behaviour, with adolescents who had used alcohol in the past 30 days having a higher prevalence rate (uPR=2.38, C.I. 1.04-5.42, p=0.039) than those who had not used alcohol during the same period as seen in Table 4.9.

Table 4.9: Factors Associated with the Risk of Suicidal Behaviour among Adolescents Joining Public Secondary Schools (Unadjusted Prevalence Ratios)

Study Variables	Category	Risk of Suicide				Univariable analysis		
		No		Yes		uPR	95% CI	p-value
		n	%	n	%			
Depression	No	180	91.8	16	8.2	REF		
	Yes	251	73.2	92	26.8	**3.28**	**1.93-5.59**	**<0.001**
Sex	Male	177	82.7	37	17.3	0.79	0.53-1.18	0.249
	Female	254	78.2	71	21.8	REF		
Type of School	Single	295	80.2	73	19.8	REF		
	Mixed	136	79.5	35	20.5	1.03	0.69-1.54	0.879
Religious affiliation	Christian	332	79.0	88	21.0	1.24	0.77-2.03	0.373
	Muslim	99	83.2	20	16.8	REF		
Social economic status	Low	123	82.6	26	17.4	REF		
	Middle	171	79.2	45	20.8	1.19	0.74-1.93	0.472
	High	137	78.7	37	21.3	1.22	0.74-2.01	0.440
Age category	>=14	235	80.5	57	19.5	0.95	0.65-1.38	0.771
	15 to 18	196	79.4	51	20.6	REF		
Romantic relationship	No	364	82.0	80	18.0	REF		
	Yes	67	70.5	28	29.5	1.64	1.06-2.51	
Sexually active	No	379	80.6	91	19.4	REF		
	Yes	52	75.4	17	24.6	1.27	0.76-2.14	0.362
Bullying victimisation	No	70	90.9	7	9.1			
	Yes	361	78.1	101	21.9	1.12	0.89-1.39	0.328
Lifetime alcohol use	No	390	82.5	83	17.5	REF		
	Yes	41	62.1	25	37.9	**2.16**	**1.38-3.38**	**0.001**
Past 30-day alcohol use	No	424	80.6	102	19.4	REF		
	Yes	7	53.8	6	46.2	**2.38**	**1.04-5.42**	**0.039**
Lifetime drug use	No	397	81.2	92	18.8	REF		
	Yes	34	68.0	16	32.0	1.70	1.00-2.19	0.050
Past 30-day drug use	No	423	80.3	104	19.7	REF		
	Yes	8	66.7	4	33.3	1.68	0.62-4.59	0.304
Lifetime tobacco use	No	419	80.3	103	19.7	REF		
	Yes	12	70.6	5	29.4	1.49	0.61-3.66	0.383
Past 30-day tobacco use	No	426	79.9	107	20.1	REF		
	Yes	5	83.3	1	16.7	0.83	0.12-5.95	0.853
Caregiver	Parents	295	82.4	63	17.6	0.95	0.49-1.85	0.881
	Father	8	61.5	5	38.5	2.07	0.71-6.08	0.182
	Mother	84	73.7	30	26.3	1.42	0.69-2.91	0.336
	Guardian	44	81.5	10	18.5	REF		

4.6.2 Multivariable Poisson Regression Analysis of Factors Associated with the Risk of Suicidal Behaviour among Adolescents Joining Public Secondary Schools

The results of the multivariable analysis indicated that both depression and lifetime alcohol use were significant factors associated with the risk of suicidal behaviour.

When controlling for alcohol use, adolescents with depression had a higher prevalence ratio of suicidal behaviour compared to those who did not report such symptoms (aPR=3.16, CI: 1.85-5.41, p< 0.001). Adolescents with a history of lifetime alcohol use had a higher prevalence ratio for suicidal behaviour compared to those without such a history (aPR=1.87, CI: 1.17-2.97, p= 0.009). This is seen in Table 4.10.

Table 4.10: Factors Associated with the Risk of Suicidal Behaviour among Adolescents Joining Public Secondary Schools (Adjusted Prevalence Ratios)

Study Variables	Category	Multivariable analysis		
		aPR	95% CI	p-value
Depression	No	REF		
	Yes	**3.16**	**1.85-5.41**	**<0.001**
Sex	Male	0.70	0.47-1.05	0.088
	Female	REF		
Lifetime alcohol use	No	REF		
	Yes	**1.87**	**1.17-2.97**	**0.009**
Caregiver	Parents	0.80	0.41-1.57	0.519
	Father	1.70	0.57-5.07	0.344
	Mother	1.14	0.55-2.34	0.723
	Guardian	REF		

4.7 Lived experiences of bullying victimisation, depression and suicidality among adolescents joining public secondary schools

4.7.1 Depression and Suicidal Behaviour among Adolescents attending Public Secondary Schools

On the qualitative side, most students reported that they undergo several situations that left them feeling depressed or experiencing low moods. These include challenges around adjusting to the new school timetable and academic regimes, as well as missing parents and not liking the school that they are attending. Some of the students indicated,

> "…sometimes we have to sit for CATs [continuous assessment tests] or even RATS [random assessment tests] and when you don't perform well, it gets you down and you wonder if you will make it in school." (FGD, 1)

Few students observed that,

> "You know in primary [school] I was in a day school, so I could see my parents every day, now it is hard for me because I am far away from them, and I miss them." (FGD, 3)

Additionally, many students observed that the social interactions between new students in Form one and the other continuing students also led them to experience low moods and feelings of depression and worthlessness – while subjecting them to instances of school-related sexual harassment.

> "Sometimes you are walking within the school and boys in Form 3 and 4 will corner you somewhere and they want to touch you, to touch your breasts or your buttocks. If you refuse, they start saying '*ona huyu sura mbaya'* (look at this ugly one). It makes me feel bad and sometimes I just sit in class and think why God let my parents bring me to this school" (FGD, 2)

In the discussion, some participants reported reacting to being called names with sadness or feeling upset. The effect of name-calling could remain with the student most of the time, even making some of them look down upon themselves or diminish their sense of worth.

> "I know one of my friends who was always referred to as *mweusi* (black) and she felt bad about it and it affected her opinion about herself very much" (FGD, 7).

Some students averred that they had witnessed suicide attempts or threat of suicide attempts:

> "There is a girl who wanted to leave this school, but her parents refused. She drank a whole bottle of downy (fabric softener)." (FGD, 3).

> "…*kuna mwingine alikuwa down na akiambiwa kitu na teacher anasema atajiua but alitoka hii shule*… (…there is one [student] who was always sad.

Each time the teacher said anything to them they threatened to kill themselves. But they transferred to another school)" (FGD, 5)

According to the teachers there were very few cases of depression or suicidal behaviour in their schools

"We have weekly guidance and counselling programs here and students like it here. There are depressed or suicidal students in our school". (IDI, 43 years)

"There was only one student that I know of in the last few years who was depressed. That one was on medication, even the school nurse was aware." (IDI, 47 years)

The responses from the teachers suggest that their perception of depression and suicidal behaviour may be limited to clinical depression and suicidal attempt only.

4.7.2 Bullying Victimisation Experiences

The students expressed different understandings about what to them can be considered bullying in a secondary school set-up. Overall, there was an agreement from most of the participants across the schools that bullying mainly involves physical aggression:

"…when students physically hurt other students then this is what I think bullying is straight away" (FGD, 3)

"I think when other students talk ill about fellow students or verbally abuse another student should not be seen as bullying as this is a normal practice to me in the school" (FGD, 4).

"Name-calling is a common behaviour amongst most students even in form one or two and I don't see this as a bullying behaviour, but I see it as one way through which students can make jokes about other students" (FGD, 5)

The concept of joking amongst students was further explored to understand what students qualify as "joking" The participants suggested that "jokes" involves:

"…a making fun of other students with no intention to harm as this is just to make other laugh and feel good" (FGD, 6).

Although the notion of underpinning jokes was the place of non-intentionality, the difference between jokes and verbal bullying was not clear amongst the participants. Most of the female participants associated jokes with bullying more than male students who viewed jokes as bullying only if they are "persistently" used against them:

"Wale wanakuenjoy hawajali kama wanakuumiza na maneno wanaosema" (Those who make jokes about you don't know whether they are hurting you with their words) (FGD, 8).

"Jokes only become a bother to me when another student repeatedly uses them against me all the time (FGD, 9)

4.7.1.1 Teacher's views on Bullying behaviour

Teacher's views on bullying bordered on physical and verbal aggression. There was consensus amongst most teachers that bullying involves in schools is more verbal than physical:

"I know of cases where students have reported other students of verbally abusing them repeatedly in school" (IDI, 38 years)

"Although there are situations where other students have been reported for physically abusing others without a reason, such cases don't happen very often" (IDI, 50 years)

Many teachers felt that bullying was no longer an issue at school:

"There is no bullying in this school, no, not even one case has been brought to our attention" (IDI, 43 years)

"We have zero tolerance for bullying in this school. Students wanajua (know), you bully, you go home, period" (IDI, 42 years)

Some teachers alluded to a school induction process where older students are paired with younger ones to help them adapt to the school experience. While teachers saw this a positive relationship, some did acknowledge that it would potentially provide an avenue for bullying victimisation to occur:

> "I am aware of incidences where form fours have been accused by their "sons" of bullying them" (IDI, 50 years)

Hence it can be suggested that teacher's views on bullying behaviour differ from students' lived experiences pointing to a disconnect between the teachers' perception of bullying victimisation and the students' experiences.

From the interviews with teachers, relational and verbal type of bullying emerged as the most common types of bullying experienced in schools. Nonetheless, physical bullying at low levels was also mentioned by teachers in boy schools and mixed schools. Most teachers view relational bullying and verbal bullying as major challenges. It emerged that teacher's attitude towards bullying is both positive and negative to some extent. Teacher's manifested a negative attitude towards physical bullying more than other types of bullying while a positive attitude toward bullying was sometimes shown towards relational and verbal bullying.

Staff Attitudes meant that teachers were most likely to respond to the situation of physical bullying more than situations relating to verbal or relational bullying. Positive attitude and slow response were also evident amongst some of the teachers towards covert bullying that occurs in schools. One major reason attributed to teacher's positive attitudes towards verbal or relational bullying is that they usually manifest themselves in form of banter/jokes, and this makes it difficult to tell whether one has been bullied or it is a case of jokes being said to him/her.

> "In my opinion, students calling others names is the most common type of bullying in our school" (IDI, 41 years).

> "I guess sometimes we don't take students who report others to have insulted them for this often happen in form of jokes" (IDI, 39 years).

4.7.1.2 Common Bullying Practices

Bullying incidences not only emerged as a common behaviour in secondary schools but also as a culture that is accepted in schools. Bullying culture has been perpetrated through schools' practices, and as a result, overt form of bullying has risen to be seen as "culture "in secondary schools. One common school practice that was mentioned in all the focus group discussion is the "role of the student induction process." Through the student induction process, form three and form four students are allowed to "adopt" form one students as "sons or daughters", albeit informally. This is meant to help in inducting the first-year student to secondary school life. The culture of "student induction" has also led to the acceptance of certain behaviours that may be deemed as bullying "behaviours" as normal:

> "Mmmmh…after joining the school as a form one, a form three or form four students may adopt you as the school "father". Once adopted you are expected to help your "father" wash clothes, utensils and even clean his room. At times you do these things with a heavy heart but because you don't want to disappoint your school "father" I just do them" (FGD, 1).

> "I always ensure that my "school mother" never misses food during supper as it is my duty to serve her food and keep it while she is playing basketball" (FGD, 6).

The views of students on the role "school induction process" was also supported by teachers who were partially in agreement with the student views on school induction process. As opposed to students,

Another issue to emerge concerning the school induction process was its consideration as a rite of passage amongst the students. Since it is seen as a rite of passage in schools it has been normalized and accepted in most schools:

> "I was once told by my school father that bullying is normal and once you become a form three or form four student you will find yourself doing it to others" (FGD, 8).

The victims are usually subjected to various forms of harassment and abuse which in turn affects them both emotionally and physically. There are inclusive of issues like name-calling, physical abuse, sexual harassment, and emotional bullying.

Bullying victimisation of students in Form one emerges to have a gender-based violence slant, where older boys sexually harass younger girls.

> "Other boys *kwanza wa* (especially those in) form two when you go downstairs when they see you they start doing some unusual things and his main aim is to touch your breasts and he's doing some things with his hands sometimes you fear going there. Sometimes they are seated over there so many then down there are form threes and fours some are not good." (FGD, 3)

> "When going for lunch those big boys from form three, form four come and push you back and you can't do anything [inaudible]." (FGD, 2)

> "Sometimes you are walking within the school and boys in Form 3 and 4 will corner you somewhere and they want to touch you, to touch your breasts or your buttocks. If you refuse, they start saying '*ona huyu sura mbaya'* (look at this ugly one). It makes me feel bad and sometimes I just sit in class and think why God let my parents bring me to this school" (FGD, 2)

The practice of school-related gender-based violence also appears to be peer mediated, where older girls model or attempt to normalize the behaviour to the younger girls:

> "Some of the older girls just accept to be touched and they laugh at us and say '*nyinyi ni washamba, kuja tuwafunze'* (you are backward, come, let us teach you). I ran away and hid myself in the toilet and I was thinking about what they were saying" (FGD, 2)

Physical and verbal abuse is commonplace:

> "… let's just say an example like CU official we meet at the field so ukienda (when you go) in all the classes *kusema* (to say that) CU officials to meet at the

field *wanasema toa iyo sura yako mbaya hapa* (remove your ugly face from here)" (FGD, 5)

"Say someone in the field hits you with a ball he says *wee mtoto nyamaza* (Shut up, you child) [inaudible]." (FGD, 6)

"Yeah *tunapatiwa* (We are given) notes *tunawaandikia*. (We write the notes for them)" (FGD, 11)

"*Hata kuna wale wanakuletea nguo uwafulie*. (There are even those who bring their dirty clothes and want you to wash them)" (FGD, 7)

Some students expressed that they felt dehumanized by the victimisation experiences meted out to them at school:

"*Wengine wakikupata kwa line wanakuita form one ama wanakuita na admission yako kuja unichote maji.* Imagine, *Anakuita na admission.* (Some others, when they get you lining up [to fetch water] refer to you as Form one or call you by your admission number and tell you "Come and draw water for me". Can you imagine that? They call you by your admission number)" (FGD, 10)

Theft of items or extortion of pocket money was also a form of bullying victimizaation experienced by adolescents in this study. This was often seen as part of the school culture because students never bother much to report about it to school authorities. However, to some participants, they felt that failure to report about it is mostly associated with fear of students that report may expose them to more verbal bullying and physical abuse.

I have seen form three and form four snatch items from form ones and twos at the school canteen and nothing happens (FGD, 5).

Ukinyanganywa bread canteen na form four hauwezi sema chochote kwani ukisema itakuwa ngori kwako (If a form four students steals your loaf of bread

from you at the canteen, you can't say anything. Because if you try to report it things will go badly for you.) (FGD, 5)

"*Nimewahi nyanganywa Mandazi kwa canteen nikaambiwa tulia mono pia sisi tulinyanganywa tukiwa monos"* (Mandazi has been snatched from me only for the one did the act to tell me to relax as even he suffered the same fate as a form one). (FGD, 8).

Name-calling, mocking, and insulting was also commonplace. Interestingly, from the discussions, name-calling was also seen as an indirect factor of mocking and insulting. Unlike the male student, the girls felt that name-calling through nicknames has extended beyond general names to specific nicknames being given to girls. The nicknames given to girls mostly revolved their appearance, physiological attributes (body shaming) and one's ethnic background. Most of the nicknames only manifested dislikes from the girls as they are seen as a verbal form of bullying. Although name-calling was common across male and female students, the girls felt more strongly that it is the biggest challenge in schools as opposed to boys who saw it as a normal thing in schools.

"…if you were to ask me, I think calling another mono is seen as a normal thing in the school" (FGD, 2).

"Sometimes you will hear one of the form four student calling a form one student, *mnono* (fat one) come here" (FGD, 3).

Form of relational bullying appeared to differ for the female and male students. Female students were inclined more to gossiping, spreading of rumours and group isolation as the most common forms while male student tending towards gossiping and humiliation. Despite the differences in relational forms of bullying amongst male and female students, gossiping was a major challenge for all the participants in different schools.

"*Kusengenya mwanufunzi mwingine akisikia si shida hapa shuleni*" (gossiping other students in their presence is not a problem in this school) (FGD, 11).

4.7.1.3 Effects of Bullying

One of the major effects of bullying is its association with instilling fear among the victims and emotional breakdown. Victims are usually threatened with physical abuse and exposed to emotional abuse. This, in turn, subjects the students to constant fear while in school and the girls are subjected to various forms of sexual harassment and emotional bullying which in turn resulted in low self-esteem among the girls with some students also attempting suicide.

> "In this school and there is a person who was tutoring me in mathematics, and it was hard for me it was a form three and then *kuna msichana alipita hapo nkifunzwa* (there is a girl who passed nearby) then this girl said *hiki kinanukanga makojo kinani boreingi kikona meno inakaa hacksaw* (this thing [person] smells like urine. It's [Her] presence upsets me and it [she] has teeth shaped like a hacksaw). So that girl *aliskia akarudi* (heard and went back to) class *pahali hua anakaa akuchukua bibilia akaanza kusema mungu mbona nilizaliwa mbona uinipea hii sura ndo maana wananichukia, so hawalilii shida za home*...(to her seat and picked up the Bible and began to ask God "Why was I born and why did you give me this face that makes them hate me?" So people are not crying because of problems at home…) (FGD, 2)

School violence was cited as one of the effects of bullying experience in secondary schools. Two common types of school violence were illustrated during the focus group discussion. The first form of school violence associated with bullying related to violence against school prefects. This form of violence took place within the school or outside the school compound. In most cases, this violence is a payback to the school prefect from one of the victim bullies. This often involves physical fights from the victim bullies or a group of students who decide to payback against the bullied. In worst cases, students, particularly in day schools, have brought knives to schools to threaten school prefects whom they consider as bullies. The second form of school violence occurs amongst the students themselves, and mostly involves a victim(s) of bullying paying back against the bully through fights individual or by a group of students.

> Mmmh… I remember of an incident where some group of students had had enough. They took the captain from his cube and beat him for bullying them, and the students were suspended for some time (FGD, 11).

Social anxiety and other forms of anxiety are also some of the effects occasioned by bullying in secondary schools. Location of bullying in secondary schools normally involve some few locations such as school canteen, dining hall, playing ground washroom. It appeared from the discussion that some of the students have resorted to avoiding some of these places for fear of experiencing bullying, other students also experienced increased anxiety just by being in these places. A situation that most students link to the experience of bullying in these places from bullies who also may frequent these places.

> I will tell you of a story….mmmh. one of my friends fears so much going to the school canteen after the experience of having his bread snatched from him while at the canteen. When he goes there, he trembles a lot for fear that another student may take his bread. Nowadays the friend prefers to send me just to avoid going to the school canteen (FGD, 9).

Depression is also another effect of bullying that is experienced amongst secondary school students in Nairobi. From the interviews with teachers, cases of students who have refused to eat for lack of appetite or who report difficulty in sleeping following an experience of physical bullying were cited. Similarly, some of the participants in the focus discussion mentioned that some victims of bullying they know have lost interest in school life and are disinterested in learning.

> "Let me tell you of one of the students from my dormitory who I know because of bullying has lost interest in school life and she only wants to sleep in the dormitory or class most of the time. I think she has seen the guidance and counseling teacher two times but I doubt if it has helped her. I think she wants to go home if I am not wrong" (FGD, 5).

4.7.1.4 Measures to Control Bullying and Its Effects

The cases are usually reported to the prefects who forward the cases to the teachers in the school institution. However, the management of such cases varies between day schools and boarding schools. Students who are caught bullying are mostly sent on suspension. Additionally, the students have minimal contact with other students in the upper classes thus limiting the bullying patterns. Students who present with mental health problems can acquire help from the teachers.

> "They get a suspension and they can't come to this block unless they have permission from the principal." (FGD, 13)

> "We don't see them much, they stay in their block we stay at ours." (FGD, 14)

Interestingly, measures used in boy and girls' schools were remarkably different. The measures of naming and shaming bullies, guidance and counseling, and student punishment were mentioned amongst the girl's schools. Related to naming and shaming was also the use of student forums that are used to discuss student problems, and during such forums, the issue of bullying sometimes arises. As for the male students, student punishment and referral to guidance and counseling office emerged that the common ways of dealing with bullying. However, in all the schools (girls, boys, and mixed schools) the use of punishment was strongly preferred in dealing with school bullies. This shows that teachers and school administration may not see as a behavioural problem that can be changed through other forms of therapy.

> "In our school, some of the school bullies are always named and shamed during parades. I think this has made the student population aware of the bullies in our school. Though I must say that nowadays I don't see people being named and shame like in the first term" (FGD, 4).

The use of guidance and counseling sessions and student punishment emerged as the major measures used by teachers to deal with bullying. Guidance and counseling sessions are largely a preserve to verbal and relational bullying while student punishment is mostly used for physical bullying.

> "The school has suspended some of the school bullies who are notorious in the school and this I believe has served as a lesson to others that this behaviour is not acceptable in this school" (FGD, 3).

4.7.1.5 Challenges Associated with Dealing with Bullying

One of the biggest challenges associated with dealing with bullying incidences is associated with the implementation of appropriate measures to control measures of bullying concerns. Day schools are facing the biggest challenges as despite reporting these cases the students are still beaten outside of school. The bullies also have gangs in the area which are also deemed to be violent. When the bullies are also sent on suspension, they send their gangs to beat and threaten the victims. Other victims, therefore, fear to report such cases which also makes it difficult for the school administration to act. The teachers also rarely listen to the students which makes it difficult to deal with bullying issues.

> "…o*r anatuma watu wenye anajua wanakuanga wabaya then they wait for you.* (…or he may send his dangerous associates who waylay you.) He won't be there so you won't know it's him. Then *ukimsuspect* (if you suspect him) he starts saying he wasn't there *uliniona* (did you see me)? I wasn't there." (FGD, 2)

Additionally, the threat of violence from perpetrators is a barrier for victimized students to disclose to teachers that they have been victimized:

> "Sometimes you are walking down the stairs and then a boy kicks you when you tell him *ntakusema kwa teacher umeniangusha* (I will report to the teacher that you have made me fall) he tells you *jaribu ntakupiga mabare. Sometimes hadi ukikaribiana naye unahisi uoga* (Try and I will slap you. Sometimes when you are around him you feel fearful)." (FGD, 3)

Regarding the disclosure of school-related gender-based violence, some of the students observed that they were also unable to disclose to their parents due to fear. In some cases, there was a tendency among the parents to blame the victims:

Nilijaribu kuambia my mum that hawa maboys wamekuwa wakinishikashika. Alinislap na akiniambia "Si nilikuambia uwache hii umalaya uko nayo!". (I tried to tell my mum that these boys have been touching me. She slapped me and said, "Didn't I tell you to stop prostituting yourself!") (FGD, 2)

Students lack confidence in guidance and counseling office. Reporting of bullying is looked down upon by some of the teacher's and guidance and counseling offices. Another related challenge mentioned is the lack of privacy and confidentiality among some of the teachers on bullying cases amongst the students. Some teachers inform the fellow teacher about bullying cases reported by students, and these students end up been ridiculed by such teacher when they meet them or go to the classroom. As a result, some of the participants felt that a good proportion of students would rather suffer silently report bullying to teachers.

"There are students who when they see you talking to teachers, they think you are "snitches". But teachers also can't be trusted for they tell other teachers issues to do with students and this makes some students go mute on reporting bullying in the school" (FGD, 8).

"Uhmmm…. Some teachers ignore you when you report bullying to them. They tell you it's not a big thing just deal with it as a man since some of these challenges you will face anywhere" (FGD, 12).

Related to the above challenge was the absence of a warm relationship between students and teachers. The consequence of this is a failure by most students to report bullying cases to the administration. This implies that the existence of a poor school climate is a challenge that has affected measures to deal with bullying in secondary schools.

"In our school, students, I think have a cold relationship with teachers. This has made some students not to report bullying cases to them" (FGD, 7)

4.8 Effect of a teacher-led psychoeducation program on bullying victimisation, depression and suicidality among adolescents joining public secondary schools

There was a total of 291 students in the intervention arm and 248 students in the control arm for the assessment of the psychoeducation program effect, which means the study was sufficiently powered to detect an effect. The results captured a significant difference in bullying victimisation proportion between the control and intervention group, with the intervention group (89.0%) showing a statistically significantly higher proportion of victimized students than the control group (81.9%), as shown in Table 4.11.

Table 4.11: Effect of the Psycho-education Program on Bullying Behaviour, Depression and Suicidality among Adolescents attending Public Secondary Schools

Variable	Category	Groups				χ^2 (df)	p-value
		Control		Intervention			
		n	%	n	%		
Depression	No	80	32.3	116	39.9	3.346(1)	.067
	Yes	168	67.7	175	60.1		
Bullying Victimisation	No	45	18.1	32	11.0	5.588(1)	**.018**
	Yes	203	81.9	259	89.0		
Risk of suicide	No	199	80.2	232	79.7	0.022(1)	.881
	Yes	49	19.8	59	20.3		

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Risk Factors Associated with Bullying Victimisation

This study found a prevalence of bullying victimisation of 85.7%. This is higher than the prevalence reported in both international and Kenyan studies (Itegi, 2017; Ndetei *et al.*, 2007). Depression among adolescents attending public secondary schools in Nairobi County could easily be explained by their bullying victimisation experiences. Indeed, the findings paint a bleak picture of the multitude of negative peer-relational experiences that adolescents are subjected to that could lead them to develop depression.

A study conducted in China captured similar results that showed that bullying victimisation was significantly associated with depression. This was largely attributed to the fact that bullying victimisation was linked with problematic internet usage and sleep quality which in turn resulted to depression (Cao *et al.*, 2021). Halliday *et al.* (2021) also conducted a systematic review that captured 28 relevant studies that relate to bullying victimisation among adolescents. The study revealed that bullying victimisation was largely associated with increased peer rejection, depression, anxiety, poor academic outcomes, and performance. Contrary to the findings, this study found out that females suffered worse outcomes as opposed to their counterparts.

This study found that boys were more likely to be physically victimized than girls. Boys are more likely to be physically bullied in school for a variety of reasons. This could be attributed to boys beings physically active and competitive than girls, hence aggressive behaviour. Further, boys may be more likely to engage in physical confrontations with their peers (Bernasco *et al.*, 2022), which can increase the likelihood of being bullied. Boys may also be targeted more often for physical bullying due to gender stereotypes and expectations. For example, boys are often expected to be tough and strong, and may be seen as weak or unmanly if they do not fight back or

stand up for themselves. This can make them more vulnerable to physical aggression from their peers. In some cases, boys may also be bullied because of their size or physical appearance. Larger or stronger boys may be seen as easy targets for smaller or weaker bullies, who may feel the need to assert their dominance or gain attention from their peers.

Shaheen *et al.* (2019) conducted a study that employed a cross-sectional design that captured 436 adolescents. Results from the study showed that the means of support from the victim's family and friends were highly associated with bullying victimisation. Other predictors of bullying victimisation included age, gender, the father's level of education and the use of computers or electronic devices. Another study conducted by Hosozawa *et al.* (2021) relied on the use of the Programme for international student assessment to capture data in relation to verbal, relational and physical victimisation as reported by the students over the last 12 months. The study included a total of 421,437 students who revealed that verbal (21.4%), relational (20.9%) and physical (15.2%) bullying victimisation were the most common forms of victimisation. The results also showed students with the low socio-economic status, lowest academic performance and boys were highly likely to be victims.

Glassner (2020) notes that bullying victimisation had major impact especially in increasing the risk of depression among the male and female adolescents. Results from the study also indicated that delinquency was associated with bullying victimisation and depressive symptoms mediate the relationship between bullying victimisation and delinquent relation relationships among females as opposed to males. Hu *et al.* (2021) study captured a total of 3675 students with the aim of capturing the factors associated with bullying victimisation among national school students. The captured traditional bullying and cyberbullying victimisation as the most common forms of victimisation among school peers. The main factors associated with bullying victimisation included attending boarding school, academic performance and level of education.

A study conducted by Neupane *et al.* (2020) showed that mental health problems, anxiety, school absenteeism as a result of fear, truancy were all associated with bullying victimisation. Additionally, bullying victimisation was highly associated with

physical fights and tobacco usage. According to a study conducted by Aboagye *et al.* (2021), bullying victimisation had a prevalence of 38% and its associated risk factors included truancy, current marijuana usage and lack of peer support. Another study also focused on the context of bullying victimisation and suicidality among adolescents in 48 countries which were predominantly low- and middle-income countries. The study captured a total 134,229 adolescents who revealed that a prevalence level of 30.4% for bullying victimisation. The regression analysis captured in the study revealed that factors suicidality was associated with bullying victimisation after adjustment for age, sex and socio-economic status (Koyanagi *et al.*, 2019).

5.1.2 Risk Factors Associated with Depression

In relation to the second objective, the multivariate analysis showed that depression had a significant association with suicide risk and lifetime alcohol use. Shaheen *et al.* (2019) focused on investigating the burden of depression, suicidal ideation and suicidal behaviour among adolescents. The study captured a total of 7662 adolescents of the age 10-19 years. The study revealed that depression was highly associated with gender (females), poor access to healthcare, substance use and older age. Similarly, a significant association was captured between depression and suicidality. Another study sought to explore the factors associated with depression among adolescent females. The study employed a cross-sectional approach that capture 2187 adolescent girls between the age of 10-19 years. The study captured a prevalence level of 39.7% for depression which was associated with being in private institutions, early and mid-adolescent age residing in rural areas, education and among females with educated parents (Shukla *et al.*, 2019).

Karki *et al.* (2022) captured 453 students in a study that sought to explore the extent of depression, anxiety and stress among the adolescents. Factors that were found to be associated with depression include perceived academic stress, cyber-bullying, student from nuclear family types and students studying humanities. Similarly, Bharati *et al.* (2022) sought to determine the prevalence and risk factors associated with depression among school going adolescents. A total of 838 adolescents between the age of 11-19 years in 6^{th} to the 11^{th} grade. The study captured a prevalence level of 51.2% for

depression which was highly associated with female gender, high class or grades (9^{th} -11^{th}) screen time, domestic harassment, parental discord, academic dissatisfaction and suffering from mental illness.

Nakie *et al.* (2022) also conducted a study that captured 849 participants in a bid to collect data on the context of depression, anxiety and stress. Depression among the adolescents was mostly associated with female gender, khat chewing and social phobia. AlAzzam *et al.* (2021) explored the context of depression among adolescents during the pandemic period. Findings from the study revealed that two-thirds of the students displayed depressive symptoms with factors such mother's level of education, father's level of education, difficulties of online education, age and gender being the major predictors.

A study conducted by Mei *et al.* (2021) also sought to determine the moderation mediation models that focus on bullying victimisation and depressive symptoms. The study captured a total of 2956 students and there was a significant association between bullying victimisation and depression. However, the effects of bullying victimisation on depressive symptoms were only mediated through social anxiety. This relationship was also mediated through sleep duration. A similar study sough to determine the association bullying victimisation and depressive symptoms through role of self-esteem as a mediating role. The results from the study captured a significant association between bullying victimisation and depression. The results also showed that self-esteem played a mediating role between bullying victimisation and depressive symptoms (Zhong *et al.*, 2021).

Chu *et al.* (2018) explored the relationship between cyberbullying victimisation and depression. The study captured a total of 489 adolescents between 11-15 years. The results also showed that after controlling for age and gender, hopeless was found to partially mediate the relationship between cyberbullying and depression. The direct effects of cyberbullying victimisation and depression were moderated through self-compassion. Li *et al.* (2023) also conducted a mediation analysis that captured both traditional and cyberbullying victimisation. The study showed that female victims had

a higher risk of depression compared to males. Physical health acted as the mediator for traditional bullying victimisation and depressive symptoms.

5.1.3 Factors Associated with Risk of Suicidal Behaviour

The multivariable analysis indicated that both depression and lifetime alcohol use were significant factors associated with the risk of suicidal behaviour. After controlling for alcohol use, adolescents with depression were highly likely to express suicidal behaviour. Similarly, individuals with a history of lifetime alcohol use also displayed a higher prevalence ratio for suicidal behaviour. The result also showed that the effect of lifetime alcohol use on depression was fully mediated via suicide risk. Additionally, lifetime alcohol use, suicide risk, and depression were all associated with each other. Suicide risk fully mediated the relationship between lifetime alcohol use and depression. Overall, the results suggested that the relationship between lifetime alcohol use and depression were fully mediated by suicide risk, and suicide risk plays a crucial role in explaining the relationship between these variables.

Rey *et al.* (2019) sought to explore the relationships between gratitude, bullying victimisation and suicide risk. A total of 1617 adolescents were captured in the study and gratitude was found to be negatively associated with bullying victimisation and suicide risk. The study revealed no gender differences in relation to gratitude and girls reported higher levels of suicide risk. However, the relationship between bullying victimisation and gratitude resulted to variance in suicide risk mainly among girls. Quintana-Orts *et al.* (2019) also conducted a study that captured 465 victims with a focus on Emotional Intelligence, depression, and suicide risk. The findings also revealed that emotional intelligence was a predictor of decreased suicide among the victims. This relationship was moderated by gender and the mediation was significantly stronger among girls compared to boys.

Another study conducted by Rey, *et al.* (2019) revealed that emotional intelligence significantly decreased the risk of suicide. The results also showed that victimized individuals who displayed low levels of emotional intelligence reported higher risks for suicide. Therefore, emotional intelligence plays a protective role when predicting higher flouring and in the reduction of the likelihood of suicide risk.

According to a study conducted by Yıldız (2020) depression, perceived social support and substance abuse have a significant effect suicidal ideation and attempts. The mediating effects from the study were all found to be statistically significant. The results from the study showed that depression was a strong mediator when it comes to both suicidal outcomes. Olatunji *et al.* (2020) examined the mediating roles for self-efficacy in capturing the relationship between social support and suicidal ideation. The study revealed that an increase in family support were significant predictors for suicidal ideation.

A study conducted by Pfledderer *et al.* (2019) focused on investigating the relationship between sleep, environmental factors hand physical factors associated with suicidal ideation among adolescents. Findings from the study revealed that factors such as bullying victimisation, hours of sleep, school safety, purchasing illegal drugs and school related factors were all associated with suicidal ideation. Baiden, *et al.* (2020) also noted that race, in particular the non-white sexual minority were highly likely to experience sexual ideation contrary to their counterparts. Similarly, a study conducted by Lindsey *et al.* (2019) revealed that the black youth were highly likely to report high risks of suicide attempts. Black boys were also highly likely to resort to self-injury which shows that boys were more likely to rely on lethal approaches when attempting suicide.

A systematic review conducted by Gili *et al.* (2019) revealed that adolescents with mental disorders had a higher risk of being subjected to suicidal attempts and at times death. Longobardi *et al.* (2020) also captured factors such as anxiety, depression, insomnia which were all associated with the risk of suicidal ideation among adolescents. According to Campisi *et al.* (2020) girls displayed a higher risk of suicidal ideation compared to boys. Bullying victimisation and having no close friends was also higher among girls. The male counterparts also reported displayed engagement in physical fights mostly characterised with suicidal ideation often linked with serious injury.

5..1.4 Lived Experiences of Bullying Victimisation, Depression and Suicidality

5.1.4.1 Lived Experience associated with Bullying Victimisation

According to the school institutions, some measures had been set up to help mitigate bullying but findings from the study revealed that bullying victimisation was still pervasive. Approaches implemented by teachers to deal with bullying mostly focused on physical forms of bullying with little consideration of other forms of bullying victimisation within schooling institutions such as social and verbal bullying victimisation. This could be attributed to the fact that teachers mainly understood bullying to be physically orchestrated as opposed to other forms such as verbal or social. The quantitative findings also revealed that students also encountered social and verbal forms of bullying victimisation which were in as much as physical bullying victimisation.

These findings are similar to a study conducted by Koyanagi *et al.* (2020) who noted that bullying victimisation was relatively common among boys but verbal bullying victimisation was relatively common among girls especially in relation to their physical appearance mostly in relation to body weight. Lian *et al.* (2021) also notes that grade repeaters have a higher likelihood of being subjected to verbal and social bullying by being threatened, being made fun of, their possessions being taken and girls being pushed around compared to their counterparts.

Self-reporting bullying victimisation incidences was also a major challenge. Students had fear disclosing bullying incidences to teachers and parents especially those in day school. This was attributed to various issues such as the fear of being branded as “snitches”, lack of privacy and confidentiality from the teachers, the risk of violence or being harassed by the same perpetrators and their associated when heading home and lack of belief or support from parents when reporting such cases. This relates to a study conducted by Zhang *et al.* (2021) who revealed that victims of bullying found it difficult to report bullying experiences as they were incapable of dealing with bullying incidences. This was mostly associated by the fact that they did not want to be labelled as “snitches”, causing worry to their parents, worsening their situation at school or deemed as overreacting. Strindberg *et al.* (2020) also notes that the victims were more

likely to be socially stigmatised, isolated, belittled and further bullied. Additionally, they noted that feared being singled out which increased their fear of reporting or intervening for other victims.

Student hazing and induction were also common heinous acts that bullying victims had to endure. This relates to a study conducted by Abdul Halim *et al.* (2022) which notes that victims of bullying were shamed and embarrassed, had low self-esteem, failed to recognize forms of bullying, were concerned about to "snitching". The also faced the fear of not being believed, the fear of making things worse and the belief that the interventions would not be helpful.

The findings also captured a significant gap which showed that efforts to deal with bullying had been effective when such concerns were still prevalent. This is mostly attributed to the fact that most of the interventions focused on addressing physical bullying as opposed to other forms of bullying pointing to a lack of understanding on the whole context of bullying. Bullying has also taken up different forms such as the existence of school related gender-based violence, social isolation and ostracization. According to the finding, female students were highly likely to be subjected to school related gender-based violence by being forced to engage in romantic or sexual relationships by older boys who likely subjected them physical, sexual, and emotional abuse. One of the key contributors is the normalization of patriarchal attitudes where girls are socialized to prioritize their needs and desire of men over their own thus encouraging this abusive behaviour. For example, there are studies that show the role and association of social exclusion and ostracization and bullying among adolescents (L. Chen *et al.*, 2023; Korobeinikova and Shelkovnikova, 2021). According Elboj-Saso *et al.* (2022) to sexual violence is a common precedent among adolescents and is usually orchestrated among girls. Onyango *et al.* (2019) also notes that adolescent girls are often vulnerable to coercion, sexual abuse and physical abuse. They are also limited in terms of attending educative programs that help them to deal or report such issues.

Addressing such issues also involved naming and shaming tactics to discourage bullying but these interventions were relatively ineffective. The ineffectiveness could

be linked with increased focus on physical bullying victimisation as opposed to other forms such as verbal and social. Another control measures for addressing the outcomes of bullying victimisation were through guidance and counselling. The ineffectiveness of this approach is attributed to the fact that depression and suicidality are deeply rooted concerns and the victims require support and cooperation from parents and school an aspect that is often not easily achieved. According to a study conducted by Farahat (2019) teachers report various misunderstanding in relation to the criteria on bullying. The most common approach for bullying prevention was through punishment but this was commonly associated with lack of support from the parents and increased their level of hesitancy when addressing bullying situations.

The school measures and interventions to deal with bullying are also ineffective due to various policy gaps. Bullying in Kenya is a major concern due to the inability of the government to enact quality interventions to deal with the perpetrators. For example, the National Education Sector Plan (NESP) simply stipulates that school institutions should work to avert all forms of bullying but does not offer any interventions or measures. According to Rigby (2018) the effectiveness of bullying interventions is influenced by a variety of factors such as teachers beliefs and their understanding of the context of bullying. Therefore, this could be a major contributor to the ineffectiveness of the implemented interventions.

5.1.4.2 Lived Experiences associated with Depression and Suicidal Behaviour

The qualitative findings captured in the study revealed that social and verbal bullying were major contributors to depression and suicidal behaviour. This could be attributed to increased suppression of physical bullying victimisation within the school setting as such its effects are not profound contrary to that of social and verbal bullying which are not properly controlled. Physical, social and verbal bullying victimisation can all result to depression and suicidal behaviour, however, social and verbal bullying victimisation are insidious in nature as they target an individual's physical attributes, social connections and undermines their self-worth. Therefore, it could be justified that social and verbal bullying victimisation were most likely to result to feelings of hopelessness, depression and suicidality as opposed to physical bullying victimisation.

This relates to a study conducted by Peng *et al.* (2020) which revealed that relational bullying victimisation was highly associated with suicidal ideation only, Suicidal ideation and harm and Suicide attempts and verbal victimisation was linked to suicidal ideation only. However, these findings contradict the results captured in a study conducted by (Brunstein Klomek *et al.*, 2019) which revealed suicidal ideation and attempts were mostly linked with physical victimisation contrary to verbal and relational forms of bullying.

Students reported experiencing various situations that predisposed them to depressive symptoms. In some instances, some students reported having observed suicidal attempts as well as their own suicidal ideation because of the difficult or challenging situations that they go through at school. Bullying victimisation has also metamorphosed into school related gender-based violence especially when meted out from male to female students. This form of bullying predisposed the students to high levels of depression given its association with persistent feelings of worthlessness, difficulty in concentrating, loss of interest in school activities and thoughts of self-harm and suicide and the fact that victims are often scarred for life. This was relatively challenging especially because some of the students lacked support from their parents. Halliday *et al.* (2021) notes that bullying victims also have a higher likelihood of experiencing issues such as depression, anxiety, peer rejection, poor school performance and poor connection with the peers over a period of 12 months to 8 years. Female victims also suffered the most when it came suicidal ideation, anxiety and depression compared to victimized males. Knaul *et al.* (2020) notes that survivors of gender-based violence are often scarred for life because of exposure to physical and sexual violence. The effects of gender-based violence are highly impactful as they not only affect the individual but the society and health system.

The control measures for depression and suicidality are guided by the Kenya Mental Health policy 2015-2030 and the National Suicide Prevention Strategy Program (2021-2016) respectively. These policies are relatively broad and offer no interventions for the management of these mental health issues within the school setting. Additionally, there are no studies that have explored their effectiveness in addressing mental health issues.

5.1.5 The Effect of a Teacher-led Psychoeducation Program on Bullying Victimisation, Depression and Suicidality

The psychoeducation program implemented in the study was ineffective in addressing bullying victimisation and its associated effects. This could be attributed to the fact that the intervention was implemented over a short period of time which is relatively ineffective because bullying is a deeply rooted concern. Therefore, this points to a need for the implementation of a more robust approach for dealing with bullying victimisation. Other studies also found conflicting results in relation to the effectiveness of psychoeducation education programs in averting bullying victimisation.

For example, Çevik *et al.* (2021) found that psychoeducational programs were effective in the management of victimisation. This could be attributed to the fact that it was implemented with other approaches such increasing the level of school and family engagement through the use of indoor and outdoor cultural and social activities. Chamizo-Nieto *et al.* (2023) also provides positive results in relation to the effectiveness of psychoeducation programs in dealing with bullying victimisation. The results from the study revealed that the psychoeducation program group registered positive results after a three-month follow-up group. Its effectiveness could be interlinked with the duration and the follow-ups utilized in the implementation of the intervention.

Del Rey *et al.* (2022) also notes that psychoeducational intervention programs are widely renown and used in minimizing bullying however there is minimal information in relation to its effectiveness. However, Espelage *et al.* (2023) notes that bullying interventions such as the psychoeducation programs deliver modest but promising results. There is the need for the development of effective prevention programs that address the existent inequities and bias in psychoeducation programs associated with bullying.

One of the most effective programs is the school based cognitive behavioural therapy (CBT) which has been found to be significant in dealing with the aftereffects of

bullying such as depression and suicidality. This therapy is characterised by the identification of negative thoughts which in turn improves an individual's health.

According to Jones (2020) person centred counselling is commonly used to help mitigate against bullied individuals. This approach is useful but the participants reported that it did not explore all the key concerns and there is a need to cope with the bullying experiences by the use of Cognitive Behavioural Therapy (CBT) which is deemed effective. Ng *et al.* (2022) also notes that the existing educational interventions for reducing bullying are marginally effective thus the need to explore other approaches that improve all forms of anti-bullying interventions.

Haugland *et al.* (2020) notes that targeted school-based CBT intervention is highly effective in reduction of mental health concerns such as impairments, depression and anxiety. Karyotaki *et al.* (2021) also reveals that individuals with depression are highly likely to benefit from CBT and optimizing this form of treatment is vital in optimizing its coverage on a global scale. Christ *et al.* (2020) also notes that CBT is vital in the reduction of anxiety and depressive symptoms for adolescents. Contrary to other active forms of control, CBT yielded better results. Similarly, Sinyor *et al.* (2020) also noted that CBT can provide beneficial results when it comes to the management of suicidal behaviour among the adolescent victims.

CBT offers several benefits such as its effectiveness in dealing with mental disorders such as depression and anxiety, provides the opportunity for collaboration between the therapist and patient, can be adaptable to the individual or various settings, it is a short-term form of treatment that requires at least 20 sessions thus offers convenience to the patient and provides coping skills to help in the management of such issues. This relates to a study conducted by Hutson *et al.* (2021) also revealed targeted intervention for bullying victimisation through the use of CBT is beneficial in enabling the victims in internalizing their issues.

Another study also explored the flexibility of CBT in relation to the implementation of the intervention. This form of CBT also captured family members if the depressed victim and was found to be highly significant in reducing the extent of non-suicidal self-injury, depression and suicidality (Esposito-Smythers *et al.*, 2019). This

intervention also offers an individual based form of treatment which is highly beneficial especially given the fact that people respond to adversities differently. According to Shayegh Borojeni *et al.* (2019), CBT is a conventional form of treatment for addressing issues such as anxiety, depression and suicidality and should be considered as the first line of treatment. This is attributed to the fact that it provides the opportunity to upgrade or revise the treatment for recurrent disorders, its proven ability in increasing adherence to drug therapy and the ability to predict the presence of these disorders.

CBT also has some challenges such as its reliance on active participation, it is highly intense for individual who encounter difficulty in changing their behaviours or experiences, it may not be suitable for all individuals and can be highly expensive making accessibility of treatment difficult. There is paucity of information in relation to the challenges of CBT in addressing depression and suicidality. Additionally, many of the studies focus on the role of CBT in the management of depression as opposed to suicidality. However, one challenge in relation to implementation of CBT is that it takes a long period to actualize largely due to the gravity and severity of the issues encountered by victims of bullying. For example, Haugland *et al.* (2020) notes that this intervention takes long durations to actualize often translating to months.

It is also critical to note that there are other interventions that could offer quality results in terms of interventions of dealing with bullying and its associated outcomes. For example, a study conducted by Kopelman-Rubin *et al.* (2021) revealed that the 'I Can Succeed-Elementary School (ICS-ES) program for interpersonal psychotherapy among adolescents was instrumental in dealing with bullying. The program also improved the students' academic achievements and teachers also reported high levels of satisfaction when providing training for the students. Filia *et al.* (2021) the interpersonal psychotherapy approach which has been showed to be instrumental in the treatment of depressive disorders.

5.2 Conclusions

1. The conclusions of the study are as follows:

2. Despite efforts to curb the vice, there is a high prevalence of bullying victimisation among adolescents attending public secondary schools in Nairobi County. Among adolescents who experienced bullying victimisation depression was a significant risk factor. Additionally, sex was a significant risk factor in physical victimisation where boys were at an increased risk compared to girls.
3. Depression had a significant association with suicide risk and lifetime alcohol use. This points to the importance of preventing or reducing the early onset of alcohol use among adolescents even at secondary school level.
4. One-fifth of the respondents scored as at risk of suicide, with both depression and lifetime alcohol use as significant factors.
5. The students experienced multiple situations that often left them feeling depressed or experiencing low moods. These were inclusive of challenges such as adjusting to the new school timetable and academic regimes, as well as missing parents and not liking the school that they are attending. The main control measures for addressing bullying victimisation were through guidance and counselling. Addressing such issues also involved naming and shaming tactics to discourage bullying which was relatively ineffective.
6. The teacher-led psychoeducation program was not effective in lowering the prevalence rate of bullying victimisation, depression, and risk of suicide in this study.

5.3 Recommendations

5.3.1 Recommendations on Study Findings

1. The Kenya Mental Health policy 2015-2030, National Prevention and Response Plan on Violence Against Children in Kenya 2019-2023 and the National Suicide Prevention Strategy Program (2021-2016) should be reviewed to create a broader framework for reporting and addressing adolescent bullying victimisation, depression and suicidal behaviour in the school setting.

2. There is a need for the Ministry of Health and Ministry of Education to develop a separate School Mental Health strategy to address all factors that predisposes adolescents to depression and suicidal behaviour.
3. The State Department for Basic Education and Early Learning should develop specific mental health guidelines and strategies to develop supportive environments and engaging all stakeholders in capturing and addressing suicidal behaviour issues within the school.
4. Teachers, parents, students and Ministry of Education officials should be sensitized on school-related gender-based violence and specific policies and guidelines developed by the Ministry of Education to eradicate the problem.

5.3.2 Recommendation for Further Studies

The researcher suggests the need for exploration of effective anti-bullying victimisation interventions in the Kenyan school setting, specifically school-based cognitive behavioural therapy.

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APPENDICES

Appendix I: Consent and Assent Forms

A. CONSENT FORM FOR TEACHERS/SCHOOL COUNSELORS/ HEAD TEACHERS PARTICIPATING IN IN-DEPTH INTERVIEWS

Title of Study: **Adolescents' Risk Factors and Lived Experiences of Bullying Victimisation, Depression and Suicidality: Effect of a Teacher-led Anti-Bullying Program in Public Secondary Schools in Nairobi County**
Principal investigator: Aggrey Mokaya Gisiora

Introduction

The purpose of these study it to assess the effect of a teacher-led psychoeducation program on bullying behaviour, depression, suicidalilty among adolescents attending public secondary schools in Nairobi County, Kenya.
Should you accept to participate you will be expected to assist in answering the questions with appropriate non-judgmental attitude and communication, help in the identification of the forms of bullying which are common in the institution and provide strategies through which the students, both victims and perpetrators can be helped.
You will be given supportive aid when answering the questions and all individuals who participate in the study will be required to sign the consent form. Confidentiality of all the participants will be respected.

Benefits:

This study will be critical in the reduction of bullying cases in schooling institutions. This will also be critical in the reduction of depression and suicidal behaviour by students who are victims of bullying. Additionally, the study will also be instrumental in the development of strategies that are effective in the management of bullying in schooling institutions.

Risks:

The only risk associated with the study is an increase in the workload as participants will mainly be asked questions that they are not used and as such will be required to dedicate some of their time in answering them. The result of the assessment will be kept strictly confidential by the research team.

Voluntary Participation:

Your participation in the study is completely voluntary. You are therefore free not to participate in the study, withdraw participation any time without any loss of benefits from your employer.

Confidentiality:

All information produced will be kept confidential
Compensation
You will not be paid to participate in the study.

Additional Information:

If you have questions or you require any clarifications please feel free to ask me. In addition, if you have questions in the future you are also free to directly ask the **Principal Investigator** on 0728439553
CONSENT FORM
I, _____ have read the consent explanation on the study named **"EFFECT OF A TEACHER-LED PSYCHOEDUCATION PROGRAM ON BULLYING, DEPRESSION AND SUICIDALITY AMONG ADOLESCENTS ATTENDING PUBLIC SECONDARY SCHOOLS IN NAIROBI COUNTY".** I confirm that I was given the time to ask any questions and that all my questions were satisfactorily answered. Based on this, I therefore agree that I will participate in the study and that I reserve the right to withdraw that permission at any time without any loss of benefits.
Signature: _____
Date: _____

B. CONSENT FORM FOR PARENTS/GUARDIANS/HEADTEACHERS

Title of Study: **Adolescents' Risk Factors and Lived Experiences of Bullying Victimisation, Depression and Suicidality: Effect of a Teacher-led Anti-Bullying Psychoeducation Program in Nairobi County**
Principal investigator: Aggrey Mokaya Gisiora

Introduction

The purpose of this study consent form is to provide you with information that helps you decide whether to participate or not. You are free to ask any questions with regard to the purpose of the study, the rights afforded to your child as a volunteer, and other pressing issues that are unclear. You can then make a decision to allow your child to take part in the study based on your satisfaction with how your questions are answered. Once you agree, you will be requested to sign your name on the form

Purpose of the Study

The purpose of this study is to investigate the effect of teacher-led psychoeducation programs on Bullying, depression, and Suicidality among adolescents attending public Secondary Schools in Nairobi County.

What happens when you allow your child to take part in the study?

The child will be required to take part in a survey that focuses on capturing their experiences with bullying, depression, and suicidality.

Risks, harms, and discomforts associated with this study

There are no risks posed in taking part in the study. However, the study will capture questions about their experiences often prompting them to reveal personal information with regard to bullying, suicidality, and depression. We will ensure that all information provided will be confidential and no personal identifiers are not captured in the study.

Benefits of the study

This study will be beneficial for the children by highlighting their challenges in school as it pertains to bullying, depression, and suicidality. The findings will be instrumental in enabling the implementation of proper measures to deal with such concerns as policies and programs.

Cost and reimbursement for participation

There will be no associated costs and reimbursements associated with participation in the study.

What if I have future questions?

In case of any queries or concerns about your child's participation, feel free to contact the lead researcher through the following contact: Email: agmokaya@gmail.com; Phone number: 0728493553. For more information about your child's rights as a research participant you may contact the Secretary/Chairperson, University of Eastern Africa Baraton-Institutional Scientific and Ethical Review Committee (UEAB-ISERC) email ueabrec@gmail.com.

CONSENT FORM (STATEMENT OF CONSENT)

The individual being considered in the study is incapable of consenting because he/she is a minor. Therefore, you are being asked to provide permission for the inclusion of your child in the study.

Parent/guardian Statement

I have read and understood the information in the consent form and had the chance to discuss the chance to ask questions in relation to the purpose, risks, and benefits of the study on my child. I understand that the participation of my child in this is voluntary

and all personal identity will be treated as confidential. By signing this form, I voluntarily agree to my child's participation in this research study:
Parent/Guardian signature /Thumb stamp: _____ Date _____
Parent/Guardian printed name: _____

Researcher's Statement

I have fully explained the key details related to the study to the participant named above and believe he/she has understood and voluntarily consented
Printed Name: _____ Date: _____
Signature: _____

C. ASSENT FORMS FOR ADOLESCENTS

Project Title: Adolescents' Risk Factors and Lived Experiences of Bullying Victimisation, Depression and Suicidality: Effect of a Teacher-led Anti-Bullying Psychoeducation Program in Nairobi County

Investigator(s): Aggrey Gisiora Mokaya

We are doing a research study about school bullying and the mental wellbeing of students in school.
Permission has been granted to undertake this study by the University of Eastern Africa Baraton-Institutional Scientific and Ethical Review Committee (UEAB-ISERC Protocol No. B132019). This research study is a way to learn more about the experience of students at school.
If you decide that you want to be part of this study, you will be asked to fill in a questionnaire that will take about 20 to 30 minutes to complete. You may also be asked to part in a discussion about your experiences here at school.
There are some things about this study you should know. Some of the questions may be uncomfortable to answer or may bring back bad memories. In that case you are free not to answer and you can stop at any time.
Not everyone who takes part in this study will benefit. A benefit means that something good happens to you. We think these benefits could be improving the wellbeing of other students who come to your school by understanding the specific experiences that you go through in this school.
If you do not want to be in this research study, we will tell you what other kinds of treatments there are for you.
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/parents/guardians 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 II: Questionnaire

SECTION 1: SOCIO-DEMOGRAPHIC		
1. Indicate your age (Years)		
2. Gender	[1] Male	[2] Female
3. Nationality		
4. Area of Residence		
5. Sexual Orientation	[1] Heterosexual [2] Lesbian/ Gay [3] Bi-sexual	
6. Religious Affiliation	[1] SDA [2] Catholic [3] Protestant [4] Muslim [5] Other (Specify)_____	
7. Year of study	From one	
	Form two	
	Form three	
	Form four	
8. Have you ever used alcohol in your life?	[1] Yes	[2] No
9. Have you used alcohol in the last 30 days?	[1] Yes	[2] No
10. Have you ever used drugs in your life?	[1] Yes	[2] No
11. Have you used drugs in the last 30 days?	[1] Yes	[2] No
12. Have you ever used tobacco in your life?	[1] Yes	[2] No
13. Have you used tobacco in the last 30 days?	[1] Yes	[2] No
14. Are you currently involved in a romantic relationship	[1] Yes	[2] No
15. Are you sexually active	[1] Yes	[2] No
16. Indicate how many siblings you have		

SECTION B: BULLYING					
How often DID YOU do any of the following things to a STUDENT (or students) at this school LAST THREE MONTHS. CIRCLE THE NUMBER THAT IS CLOSEST TO YOUR ANSWER					
	Never	Sometimes	Once or twice a month	Several times a week	Everyday
Please indicate how often a student (or students) at this school has done the following things TO YOU since you have been at this school in the past three months. CIRCLE THE NUMBER THAT IS CLOSEST TO YOUR ANSWER					

		Never	Sometimes	Once or twice a month	Several times a week	Everyday
1.	I was teased by students saying things to me					
2.	I was pushed or shoved					
3.	A student wouldn't be friends with me because other people didn't like me					
4.	A student made rude remarks at me					
5.	I was hit or kicked hard					
6.	A student ignored me when they were with their friend					
7.	Jokes were made up about me					
8.	Students crashed into me on purpose as they walked by					
9.	A student got their friends to turn against me					
10.	My property was damaged on purpose					
11.	Things were said about my looks I didn't like					
12.	I wasn't invited to a student's place because other people didn't like m					
13.	I was ridiculed by students saying things to me					
14.	A student got students to start a rumour about me					
15.	Something was thrown at me to hit me					

16.	I was threatened to be physically hurt or harmed					
17.	I was left out of activities on purpose					
18.	I was called names I didn't like					

Section C: Depression

How often have you been bothered by each of the following symptoms during the past two weeks? For each symptom put an "X" in the box beneath the answer that best describes how you have been feeling.

	Not at all	Several days	More than half the days	Nearly every day
Feeling down, depressed, irritable or hopeless?				
Little interest or pleasure in doing things?				
Trouble falling asleep, staying asleep, or sleeping too much				
Moving or speaking so slowly that other people could have noticed? Or the opposite-being so fidgety or restless that you were moving around a lot more than usual?				
Thoughts that you would be better off dead, or of hurting yourself in some way?				

In the past year have you felt depressed or sad most days most days, even if you felt okay sometimes?	Yes	
	No	
If you are experiencing any of the problems in this form, how difficult have these problems made it for you to do work, take care of things at home or get along with other people	Not difficult	
	Somewhat difficult	
	Very difficult	
	Extremely difficult	
Has there been a time in the past month when you have had serious thoughts about ending your life?	Yes	
	No	
Have you ever in your WHOLE LIFE, tried to kill yourself or made a suicide attempt?	Yes	
	No	

Section D: Suicide Behaviours

1.	Have you ever thought about or attempted to kill yourself?	Never	
		It was just a brief passing thought	
		I have had a plan at least once to kill myself but did not try to do it	

		I have had a plan at least once to kill myself and really wanted to die	
		I have attempted to kill myself and really hoped to die	
2.	How often have you thought about killing yourself in the past year	Never	
		Rarely (1 time)	
		Sometimes (2 times)	
		Often (3-4 times)	
		Very often (5 or more times)	
3.	Have you ever told someone that you were going to commit suicide, or that you might do it	No	
		Yes, at one time, but did not really want to die	
		Yes, at one time and really wanted to die	
		Yes, more than once, but did not want to do it	
		Yes, more than once, and really wanted to do it	
4.	How likely is it that you will attempt	Never (0)	
		No chance at all (1)	
		Rather unlikely (2)	
		Unlikely (3)	
		Likely (4)	
		Rather likely (5)	
		Very likely (6)	

Appendix III: In-Depth Interview Guide

Bullying

1) How often does bullying occur in the institution and which forms of bullying are common?
2) How do you deal with both the victims and perpetrators of bullying?
3) What are some of the challenges you face in relation to the management of bullying incidences and what are some of the recommendations to help improve its management?

Depression

1) Have there been any incidences of severe depression that have been reported in the institution from the students as a result of bullying? Yes or No
2) What mitigation measures do you take in order to deal with depression among students in the institution?
3) What other recommendations do you think can be instrumental in the reduction of depression that is as a result of bullying in the institution?

Suicide

1) Have there been any cases of suicidal behaviour from the students?
2) Was it a result of bullying? If so what was done in order to manage it?
3) What mitigation measures can be offered in order to deal with suicidal behaviour cases in the institution?
4) What other recommendations do you think can be instrumental in the reduction of suicidal behaviour tendencies that are as a result of bullying in the institution?

Appendix IV: Focus Group Discussion Guide

Bullying

1. How often does bullying occur in the institution and which forms of bullying are common?
2. How does the institution deal with both the victims and perpetrators of bullying?
3. What are some of the recommendation you think can be instrumental in the reduction of bullying?

Depression

4. Have you encountered a class mate or a student within the school who presented a severe form of depression as a result of bullying? If yes what was your immediate action?
5. What other mitigation measures does the institution take when dealing with depression among students in the institution?
6. What other recommendations do you think can be instrumental in the reduction of depression that is as a result of bullying in the institution?

Suicide

1. Have there been any cases of suicidal behaviour from the students as a result of bullying? If so what was done in order to manage it?
2. What mitigation measures can be offered in order to deal with suicidal behaviour cases in the institution?
3. What other recommendations do you think can be instrumental in the reduction of suicidal behaviour tendencies that are as a result of bullying in the institution?

Appendix V: Ethical Approval Letters

OFFICE OF THE DIRECTOR OF GRADUATE STUDIES AND RESEARCH

UNIVERSITY OF EASTERN AFRICA, BARATON

P. O. Box 2500-30100, Eldoret, Kenya, East Africa

B132019

March 1, 2019

Aggrey Gisiora Mokaya
School of Public Health
Jomo Kenyatta University of Agriculture
and Technology(JKUAT)

Dear Aggrey,

Re: ETHICS CLEARANCE FOR THESIS PROPOSAL (REC: UEAB/01/03/2019)

Your Doctoral thesis proposal entitled "***Effect of a Teacher-led Psychoeducation Program on Bullying, Depression and Suicidality among Adolescents attending Public Secondary Schools in Nairobi County***" was discussed by the Research Ethics Committee (REC) of the University and your request for ethics clearance was granted approval.

This approval is for one year effective March 1, 2019 until February 29, 2020. For any extension beyond this time period, you will need to apply to this committee one month prior to expiry date.

Note that you will need a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI) and clearance from the study site before you start gathering your data.

We wish you success in your research.

Sincerely yours,

University of Eastern Africa, Baraton
01 MAR 2019
P. O. Box 2500-30100, ELDORET
Research Ethics Committee

Prof Jackie K. Obey, PhD
Chairperson, Research Ethics Committee

A SEVENTH-DAY ADVENTIST INSTITUTION OF HIGHER LEARNING
CHARTERED 1991

OFFICE OF THE DIRECTOR OF GRADUATE STUDIES AND RESEARCH
UNIVERSITY OF EASTERN AFRICA, BARATON
P.O. BOX 2500-30100, Eldoret, Kenya, East Africa

B0208032020 March 8, 2020

TO: Aggrey Gisiora Mokaya
Department of Public Health
Jomo Kenyatta University of Agriculture and Technology

Dear Aggrey,

RE: Effects Of A Teacher-led Psychoeducation Program On Bullying, Depression And Suicidality Among Adolescents Attending Public Secondary Schools In Nairobi County

This is to inform you that the Research Ethics Committee (REC) of the University of Eastern Africa Baraton has reviewed and approved your above research proposal. Your application approval number is UEAB/REC/02/03/2020. The approval period is 2nd March, 2020 – 3rd March, 2021.

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by the Research Ethics Committee (REC) of the University of Eastern Africa Baraton.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to the Research Ethics Committee (REC) of the University of Eastern Africa Baraton within 72 hours of notification.
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to the Research Ethics Committee (REC) of the University of Eastern Africa Baraton within 72 hours.
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to the Research Ethics Committee (REC) of the University of Eastern Africa Baraton.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

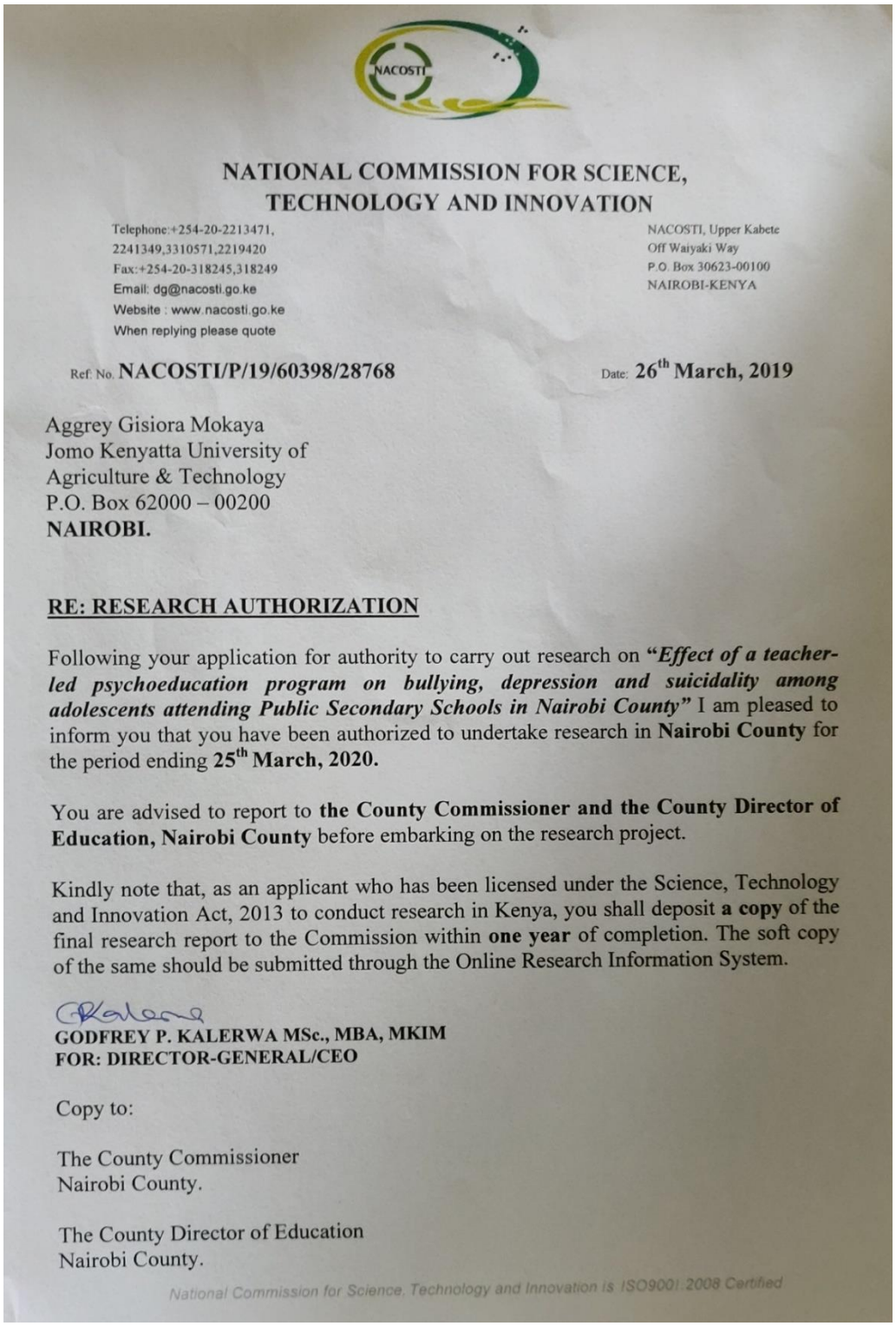
Sincerely yours,

Jackie K. Obey

Prof. Jackie K. Obey, PhD
Chairperson, Research Ethics Committee

University of Eastern Africa, Baraton
08 MAR 2020
P.O. Box 2500-30100, Eldoret
Research Ethics Committee

Appendix VI: NACOSTI Research Authorization and Permit



NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/60398/28768**

Date: **26th March, 2019**

Aggrey Gisiora Mokaya
Jomo Kenyatta University of
Agriculture & Technology
P.O. Box 62000 – 00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effect of a teacher-led psychoeducation program on bullying, depression and suicidality among adolescents attending Public Secondary Schools in Nairobi County"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **25th March, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 23752

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. AGGREY GISIORA MOKAYA
of JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, 0-200 Nairobi,has been permitted to conduct research in *Nairobi County*

on the topic: *EFFECT OF A TEACHER-LED PSYCHOEDUCATION PROGRAM ON BULLYING, DEPRESSION AND SUICIDALITY AMONG ADOLESCENTS ATTENDING PUBLIC SECONDARY SCHOOLS IN NAIROBI COUNTY*

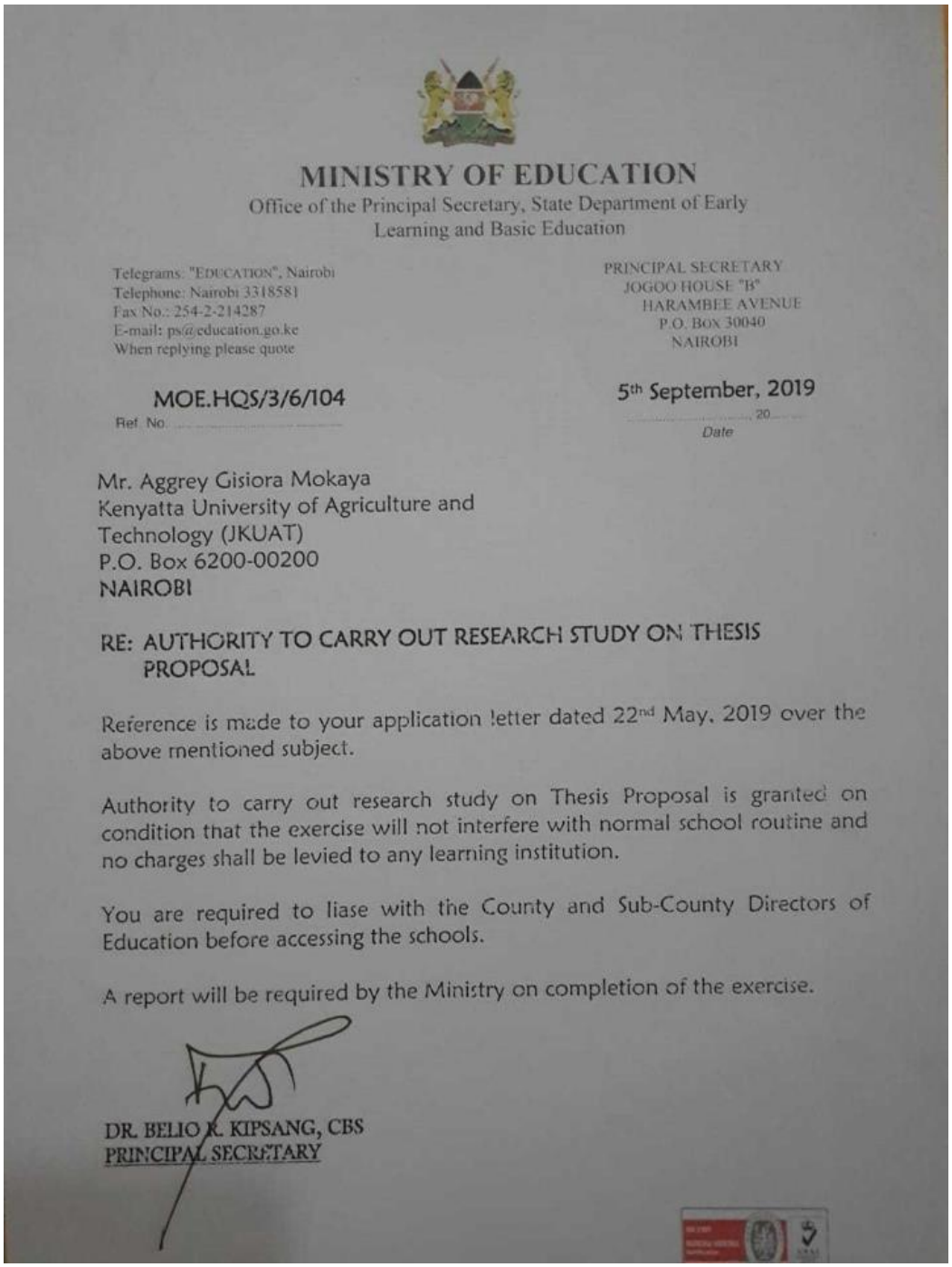
for the period ending:
25th March,2020

Permit No : NACOSTI/P/19/60398/28768
Date Of Issue : 26th March,2019
Fee Recieved :Ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

Appendix VII: Correspondence and Authorization Letters



MINISTRY OF EDUCATION

Office of the Principal Secretary, State Department of Early Learning and Basic Education

Telegrams: "EDUCATION", Nairobi
Telephone: Nairobi 3318581
Fax No.: 254-2-214287
E-mail: ps@education.go.ke
When replying please quote

PRINCIPAL SECRETARY
JOGOO HOUSE "B"
HARAMBEE AVENUE
P.O. BOX 30040
NAIROBI

Ref. No. MOE.HQS/3/6/104

Date 5th September, 2019

Mr. Aggrey Gisiora Mokaya
Kenyatta University of Agriculture and
Technology (JKUAT)
P.O. Box 6200-00200
NAIROBI

RE: AUTHORITY TO CARRY OUT RESEARCH STUDY ON THESIS PROPOSAL

Reference is made to your application letter dated 22nd May, 2019 over the above mentioned subject.

Authority to carry out research study on Thesis Proposal is granted on condition that the exercise will not interfere with normal school routine and no charges shall be levied to any learning institution.

You are required to liase with the County and Sub-County Directors of Education before accessing the schools.

A report will be required by the Ministry on completion of the exercise.

DR. BELIO K. KIPSANG, CBS
PRINCIPAL SECRETARY

Republic of Kenya
MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING & BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone: Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: **RCE/NRB/GEN/1/VOL. 1**

DATE: **27th September, 2019**

Aggrey Gisiora Mokaya
Kenyatta University of Agriculture
& Technology (JKUAT)
P O Box 6200-00200
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on **"Effect of a teacher-lead psychoeducation program on bullying, depression and suicidality among adolescents attending Public Secondary Schools in Nairobi County**

This office has no objection and authority is hereby granted for a period ending **25th March, 2020** as indicated in the request letter.

Kindly inform the Sub County Director of Education you intend to visit.

MAINANGURU
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI

REGIONAL DIRECTOR OF EDUCATION
NAIROBI
27 SEP 2019
MINISTRY OF EDUCATION
P. O. Box 74629, NAIROBI

c.c
Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: 'SCHOOLING", Westlands
Telephone:
When replying please quote
Our Ref:
Email:deowestlands@yahoo.com

SUB-COUNTY EDUCATION OFFICE
WESTLANDS SUB-COUNTY
P.O BOX 13788-00800
NAIROBI.

25 TH October 2019

THE PRINCIPAL
NAIROBI SCHOOL
WESTLANDS SUB-COUNTY

RE: RESEARCH AUTHORIZATION

The bearer of this Letter**: Aggrey Gisiora Mokaya** a student at **Kenyatta University of Agriculture and Technology (JKUAT)** has been authorized to carry out research on ***" Effects of a teacher-lead psychoeducation program on bullying, depression and suicidality among adolescents attending Public Secondary Schools in Nairobi County ."***

Authority is hereby granted for a period ending **25th March 2020**

Kindly accord him the necessary assistance.

FOR SUB COUNTY DIRECTOR
OF EDUCATION - WESTLANDS
Date: 25/10/2019
Sign:

P. K. CHIRCHIR
SUB-COUNTY DIRECTOR OF EDUCATION
WESTLANDS

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LERNING & BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
starehedeo@yahoo.com

When replying please quote

Sub County Director Education
Starehe
P.O. Box 30124 -00100
NAIROBI

Ref. No .EDU/ STA/AUT/8/27 **Date: 08TH October, 2019**

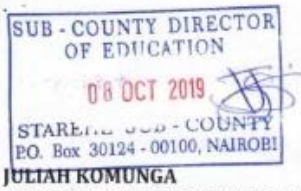
Aggrey Gisiora Mokaya
Kenyatta University of Agriculture
& Technology (JKUAT)
P.O. BOX 6200-00200
NAIROBI

RE: RESEARCH AUTHORIZATION

The above refers: -

Following your application for authority to conduct a research, on **Effective on a Teacher –lead Psychoeducation Program on bullying, depression and suicidality among adolescents attending Public Schools** in Starehe Sub-County.

Authority is hereby granted by this office to carry out the program in Sub-County schools for a period ending **25th March, 2020 as** indicated in the request letter.



JULIAH KOMUNGA
SUB COUNTY DIRECTOR OF EDUCATION
STAREHE

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "Schooling" Nairobi
Email:deokasarani@gmail.com
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REPUBLIC OF KENYA

SUB- COUNTY EDUCATION OFFICE,
KASARANI SUB COUNTY,
P.O Box 1274-00618,
RUARAKA.

REF: SCDE/KAS/GF/VOL. 2/40

DATE: 1ST OCTOBER 2019

THE PRINCIPAL
MWIKI SECONDARY SCHOOL
KASARANI SUB-COUNTY

RE: RESEARCH AUTHORIZATION (AGGREY GISIORA MOKAYA)
JOMO KENYATTA UNIVERSITY OF AGRICULTURE & TECHNOLOGY

Mr. Aggrey Gisiora Mokaya from Jomo Kenyatta University of Agriculture & Technology is undertaking research on ***"Effect of a teacher-led psychoeducation program on bullying, depression and suicidality among adolescents attending Public Secondary Schools in Nairobi County"***.

This office has no objection and authority is hereby granted for a period ending **25th March, 2020.**

Please accord him any necessary assistance.

SUB-COUNTY DIRECTOR OF EDUCATION
KASARANI SUB COUNTY
P. O. Box 1274 - 00618, RUARAKA

VICTORIA N. MBWIKA
SUB-COUNTY DIRECTOR OF EDUCATION
KASARANI

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
STATE DEPARTMENT OF EDUCATION

Email:deoembakasi@gmail.com

SUB COUNTY EDUCATION OFFICE
EMBAKASI SUB COUNTY
P.O.BOX 1288-00518
KAYOLE.

REPUBLIC OF KENYA

Ref.Emba/Edu/Authority/019/Vol1/79

2nd October, 2019

The Principal
The Komarock Secondary

RE: RESEARCH AUTHORIZATION.

This is to confirm that Aggrey Gisiora Mokaya a PhD student of Jomo Kenyatta University has the authority to carry out a research on **''Effect of a teacher-lead psychoeducation program on bullying, depression and suicidality among adolescents attending Public Secondary Schools in Nairobi County** for a period ending **25th March, 2020.**

Please accord him the necessary assistance.

However, ensure the research activities do not interfere with the normal school routine.

FOR DISTRICT EDUCATION OFFICER
EMBAKASI DISTRICT
P.o. Box 1288-00518
KAYOLE

DAVID KENGERE
SUB-COUNTY DIRECTOR OF EDUCATION.
EMBAKASI.

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

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SUB-COUNTY EDUCATION OFFICE
WESTLANDS SUB-COUNTY
P.O BOX 13788-00800
NAIROBI.

02nd October 2019

THE PRINCIPAL
PARKLANDS ARYA GIRLS' SCHOOL
WESTLANDS SUB-COUNTY

RE: RESEARCH AUTHORIZATION

The bearer of this Letter: **Aggrey Gisiora Mokaya** a student at **Kenyatta University of Agriculture and Technology (JKUAT)** has been authorized to carry out research on *" Effects of a teacher-lead psychoeducation program on bullying, depression and suicidality among adolescents attending Public Secondary Schools in Nairobi County ."*
Authority is hereby granted for a period ending **25th March 2020**

Kindly accord her the necessary assistance.

FOR SUB COUNTY DIRECTOR
OF EDUCATION - WESTLANDS
Date: 31/10/2019
Sign:

P. K. CHIRCHIR
SUB-COUNTY DIRECTOR OF EDUCATION
WESTLANDS

Appendix VIII: Publications

Received: 11 May 2022 | Revised: 4 January 2023 | Accepted: 26 January 2023
DOI: 10.1002/pits.22873

RESEARCH ARTICLE

WILEY

Predictors of depression among adolescents joining selected public secondary schools in Nairobi County, Kenya

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Abstract

Depression is common among adolescents more so during the transition to secondary school, and the psychosocial and emotional changes that accompany adolescence. This study sought to assess the prevalence and predictors of depression among students joining public secondary schools in Nairobi County. The study was carried out at five selected public secondary schools in Nairobi County covering 539 students between the ages of 11 and 18 years. The Patient Health Questionnaire-Adolescent version (PHQ-A) was used to collect data on depression. For suicidal behavior, the Suicide Behavior Questionnaire-revised version was used. The Adolescent Peer Relations Instrument was used to assess bullying victimization. These were augmented by a sociodemographic questionnaire. Depression prevalence rates were generated using a generalized linear model customized with a log link and a Poisson distribution for a common binary outcome. The prevalence of depression was found to be 14.5%, with a mean PHQ-A score of 6.16 (SD = 3.16). Predictors of depression were suicide risk (adjusted prevalence ratio [aPR] = 3.07, confidence interval, CI [1.94–4.88]; $p < .001$) and lifetime alcohol use (aPR = 2.24, CI [1.36–3.68]; $p = .001$). Depression is prevalent among adolescents

†Deceased.

joining secondary schools in Nairobi County. Counselor-led school-based cognitive behavioral therapy could be a sustainable strategy for reducing depression symptoms and guiding preventive efforts among adolescents in this context.

KEYWORDS
adolescents, depression, Kenya, psychology, school mental health

1 | INTRODUCTION

The Global Burden of Disease study shows that depression is the leading cause of mental health-related morbidity around the world over the life course from childhood, into adolescence, and progressing into adulthood (Herrman et al., 2019). It is estimated that depression affects more than 300 million people globally and is responsible for premature mortality from suicidal behavior. More than half of depression cases globally have their onset in adolescence. Yet only half of these cases are detected during adolescence (Mullen, 2018). This suggests that adolescents in general are an important cohort when it comes to understanding the course of depression. Indeed, recent studies have shown that one-third (34%) of adolescents aged 10–19 years are at risk of clinical depression—especially in the Middle East, Asia, and Africa—higher than 25% in the general population (Shorey et al., 2022). When depression begins in adolescence, it often intensifies over time and progresses into a pattern of chronic recurrence in later life (Avenevoli et al., 2008). This life course of depression is often severely debilitating and unresponsive to treatment and care over time (Shorey et al., 2022). Conversely, good mental health for adolescents predicts a successful transition to adulthood.

Adolescent depression in sub-Saharan Africa often remains undetected and when it manifests, it is dismissed as a part of the growing pains of adolescence (Moeini et al., 2019). This is even though the psychological, physical, and emotional transformations during adolescence are stressful, confusing, and in some cases, may cause depression (Jha et al., 2017; Moeini et al., 2019; Nyundo et al., 2020; Sajjadi et al., 2013). Psychosocial challenges facing adolescents arise not only from inadequate information regarding the process of growth and development but also from a lack of a general understanding of adolescence in the population. Estimates suggest that about 10%–72% of adolescents suffer from depression and similar disorders, half of which have their onset by the age of 14 years (Ibrahim et al., 2022; Jha et al., 2017; Moeini et al., 2019; Mojtabai et al., 2016; Nyundo et al., 2020; Sajjadi et al., 2013). Associated problems include suicide attempts defined by the Diagnostic and Statistical Manual of Mental Disorders, fifth edition as "a self-initiated sequence of behaviors by an individual who, at the time of initiation, expected that the set of actions would lead to his or her own death" (Fehling & Selby, 2021; Kroning & Kroning, 2016)—as well as the use of alcohol and substances which cause almost half of all disability-adjusted life years (Moeini et al., 2019; Sajjadi et al., 2013; Tang et al., 2019).

Studies show that depression is preventable when interventions are targeted at at-risk adolescents during times of relative wellness (Weersing et al., 2016), potentially including the period of transition between primary and secondary school. Before any interventions can be developed or targeted, there is a need to understand depression in context and its associated factors. Additionally, given the potential to intervene against depression during adolescence, depression screening is imperative—even in the absence of clinically significant depression—as this may help identify adolescents at risk of depression (Young et al., 2010).

In the Kenyan context, the reported prevalence of adolescent depression ranges from 26.4% (Khasakhala et al., 2012) to as high as 45.9% (Ndetei et al., 2008, 2016; Osborn et al., 2020). Additionally, depression has a high

rate of onset during adolescence (Khasakhala, Ndetei, Mathai, & Harder, 2013)—which often coincides with the transition between primary and secondary school. While there have been studies on depression among adolescents in Kenyan secondary schools, few studies have focused on characterizing the prevalence and predictors of depression during the transition between primary school and secondary school. This study thus sought to characterize the prevalence and predictors of depression during this period among these adolescents in transition.

Additionally, bullying victimization and suicidal behavior were assessed in the study. This is due to the traditionally high rates of bullying victimization experienced by junior secondary school students in Kenya, with rates ranging from 28.6% to 98% (Itegi, 2017; Okoth, 2014) and the demonstrable link between bullying victimization and adolescent depression (Mei et al., 2021). Further, an independent relationship exists between suicidal behavior and depression—where depressed people are more likely to experience suicidal ideation, plans, and attempt (Brådvik, 2018).

2 | METHODOLOGY

2.1 | Study design

The study utilized a cross-sectional design, where data were collected at a single point in time. The researcher informed the schools' administration of their purpose to visit and conduct research on Form 1 students on predictors of depression among these students. A date was given by each school based on their schedules and the researcher had to abide by it. Before data collection, research assistants were recruited, trained in data collection, and sent to the selected schools to administer the questionnaire to the students on the given date.

2.2 | Study site

The study was carried out in five secondary schools in Nairobi County. The selected schools were a mix of the three tiers of schools in Kenya: National (2), extra county (1), and county (2) schools—the distinction being that national schools are the first tier of schools in terms of human and material resources and students are admitted to these schools from all over the country—givingthem a national outlook. Extra county schools are equitably distributed all over the country and have a cosmopolitan student population like National schools. County schools on the other hand are the third tier of schools—drawing students largely from within the county. There were two mixed schools, two girls' only schools, and one boys' only school. All these secondary schools offered the 8.4.4 curriculum.

2.3 | Population

The study population comprised students who had joined Form 1 in the selected schools in January 2020. Students in other classes were excluded as was specifically considering students transitioning from primary to secondary level education. In addition to consent and assent, the criteria for the selection of respondents were adolescents who were in their first year of study in secondary school and had attended the school for at least 1 month.

2.4 | Sample size

The sample size was calculated using GPower 3.1.9.4 software (Faul et al., 2009, 2007) for a generic binomial test based on a prevalence of depression among Kenyan youth of 43.7% (Khasakhala, Ndetei, & Mathai, 2013) at 80%

power, and an estimated difference in the proportion of 6.5%. This yielded a minimum sample size of 451. An attrition rate of 20% was applied to the sample size to cater for nonresponse, yielding a sample size of 564. Nonresponse during data collection resulted in a study sample of 539 which has the power to detect a 6.5% difference in proportion at 86% power. This means that the study was sufficiently powered to answer the research questions.

2.5 | Sampling

Two-stage sampling was used to select the study participants. First, the 71 schools in Nairobi County served as clusters from which the schools were selected. Initially, the schools were grouped as either boy's only, girls' only, or mixed schools. The names of schools were listed alphabetically in each category and assigned serial numbers. Initially, computer-generated random numbers were used to select two schools each at random from each of the three categories. This resulted in two boys' only, two girls' only, and two mixed schools. However, before data collection one of the boys' schools was shut down due to student unrest, and after the data collection was complete in the other five schools, access to schools was no longer possible due to the COVID-19 prevention and control measures that closed all schools indefinitely from March 16, 2020 (State Department of Early Learning and Basic Education, 2020). As a result, only five schools participated in the study.

Within the schools, convenience sampling was applied to select the adolescents to participate in the study. While this impacts the generalizability of the findings, it was the most feasible approach given the time and resource constraints. Additionally, to mitigate against the impact of convenience sampling, the research team utilized homogenous convenience sampling, where the sampling frame for the study was intentionally constrained to only students in the transition to secondary school (Form 1) (Jager et al., 2017). The net effect of this is that the sociodemographic heterogeneity is reduced thereby enhancing the generalizability of the results (Jager et al., 2017). This, however, has a tradeoff in that the results are only generalizable to adolescents in transition to secondary school and not all secondary school adolescents—which in this case was adjudged to be acceptable.

2.6 | Data collection

Self-administered questionnaires were used to collect data in this study. The questionnaires were in English language, given the fact that English is the language of instruction in Kenyan schools, and admission to secondary schools requires that students should have sat and passed the Kenya Certificate of Primary Education. As such no translation of the questionnaires was done, however, trained research assistants were on hand to provide any clarifications. In each school, data were collected within the classroom in the absence of teachers or any school administrators. Students were allocated 30 min to fill in the questionnaires. This approach to data collection has been used severally among Kenyan upper primary and secondary school students (Khasakhala, Ndetei, & Mathai, 2013; Ndetei et al., 2016).

2.7 | Measures

2.7.1 | Sociodemographic characteristics

The study collected information on the sociodemographic characteristics of students: age, gender, caregivers, sexual activity, romantic relationships, lifetime and past 30-day alcohol, tobacco, and drug use, and socioeconomic status (SES). SES was assessed based on student responses to ownership or presence of certain items in the household where they lived. Higher value items had a higher weight than lower value items. The SES index ranged from 0 to 30 and was classified

as low 0–10, middle 11–20, and high 21+. This method of using household asset indicators has been used in other studies to assess pragmatic SES (Kabudula et al., 2017; Mokaya et al., 2016; Tajik & Majdzadeh, 2014).

2.7.2 | Depression

For assessment of the prevalence of depression, the study used the Patient Health Questionnaire modified for Adolescents (PHQ-A), with a score of 10 and above used as the cutoff to classify adolescents as likely having depression (main outcome variable) (Adachi et al., 2020; Johnson et al., 2010; Levis et al., 2019; Osborn et al., 2020). The choice of the PHQ-A over other depression questionnaires was informed by the fact that is simple and easy to understand. Further, it has been validated for use in Kenya (Johnson et al., 2002; Kumar et al., 2021; Osborn et al., 2020). In this current study, the reliability of the PHQ-A was assessed using Cronbach's α and gave a value of .74 indicating acceptable reliability (Tavakol & Dennick, 2011).

2.7.3 | Suicidal behavior

The risk of suicidal behavior was assessed using the Suicide Behavior Questionnaire-revised version (SBQ-R), based on a cutoff score of 7 or above (Osman et al., 2001). The selection of the SBQ-R was based on the fact that it has previously been used among adolescents in Africa and Kenya and is brief and easy to understand (Adjorlolo et al., 2020; Mugambi et al., 2020). The SBQ-R had a Cronbach's α of .84, indicating excellent reliability. While the PHQ-A does have a question on suicidality, it was felt there was a need to demonstrate the breadth of suicidality among adolescents transitioning to secondary school and the SBQ-R is better suited to this (Adjorlolo et al., 2020).

2.7.4 | Bullying victimization

The Bullying Victimization Subscale of the Adolescent Peer Relations Instrument (APR)—an 18-item scale—was used to assess bullying victimization among adolescents in this study (Mucherah et al., 2018; Parada, 2000). A score of 19 or higher was used to identify adolescents that had been victimized in the study sites. The selection of this instrument was based on the fact that it has been used previously and validated among Kenyan secondary school students to assess bullying victimization (Mucherah et al., 2018). In terms of reliability, the APR victimization subscale scored a Cronbach's α of .88, indicating excellent reliability. Additionally, it is brief and easy to understand.

2.8 | Data analysis

Data analysis was carried out using STATA version 14. Descriptive statistics were computed as frequency distributions of the variables of interest in the study. For cross-sectional surveys, prevalence ratios are recommended as a measure of risk for common outcomes >10% compared to odd ratios (McNutt et al., 2003). The predictors of depression were assessed using a generalized linear model, using a backward stepwise Poisson distribution with a log-link function, which was used to estimate both the unadjusted prevalence ratios (uPR) and the adjusted prevalence ratios (aPR). Variables were included in the multivariable model based on a relaxed p value of <.2 in the univariable analysis. The use of a relaxed p value in the selection of variables for inclusion in the multivariable analysis is recommended to avoid inadvertent deletion of important adjustment variables due to stochastic variability (Chowdhury & Turin, 2020; Grant et al., 2019). In the multivariable analysis, statistical significance was assessed based on a p-value of <.05.

3 | RESULTS

3.1 | Sociodemographic characteristics of adolescents in the study

The average age of respondents was 14.6 years (SD = 1.25) with the youngest aged 12 years and the oldest aged 18 years. Most of the respondents were female 60.3% (*n* = 325) while males constituted 39.4% (*n* = 214). Most of the respondents were living with both parents (66.4%) with others living with a father only, mother only, and a guardian with 2.4%, 21.2%, and 10%, respectively. The highest number of respondents was Christians (77.9%) compared to Muslims (22.1%). In terms of SES, 40.1% (*n* = 216) were from the middle socioeconomic class, 32.3% (*n* = 174) were from the high socioeconomic class whereas 27.6% (*n* = 119) were from the lowest class, with a mean SES index of 15.32 (SD = 7.21). Less than a fifth of the respondents, 17.6%, were in romantic relationships with 12.8% of adolescents indicating that they were sexually active. Lifetime alcohol use was 12.2%, lifetime drug use was 9.3%, and lifetime tobacco use was 3.2%. Most of the respondents had experienced bullying victimization (85.7%) with a mean APR victimization score of 26.07 (SD = 8.65). (see Table 1) A fifth of the respondents were at risk of suicide (20.0%), that is, an SBQ-R score of 7 or higher, with 17.3% of males and 21.8% of females at risk of suicide. The threat of suicide attempts was significantly higher in males (17.3%) than in females (13.8%) ($p = .044$) (see Table 2).

TABLE 1 Sociodemographic characteristics of adolescents joining secondary schools in Nairobi County.

Variable	Category	*n*	%
Depression (PHQ-A ≥ 10)	Yes	78	14.5
	No	461	85.5
Bullying victimization	No	77	14.3
	Yes	462	85.7
Sex	Male	214	39.7
	Female	325	60.3
School tier	National	200	37.1
	County	168	31.2
	Extra county	171	31.7
Type of school	Single	368	68.3
	Mixed	171	31.7
Religion	Christian	420	77.9
	Muslim	119	22.1
Social economic status	Low	149	27.6
	Middle	216	40.1
	High	174	32.3
Age category	11–14	292	54.2
	15–18	247	45.8
Suicide risk	No	431	80.0
	Yes	108	20.0

TABLE 1 (Continued)

Variable	Category	*n*	%
Romantic relationship	No	444	82.4
	Yes	95	17.6
Sexually active	No	470	87.2
	Yes	69	12.8
Lifetime alcohol use	No	473	87.8
	Yes	66	12.2
Past 30-day alcohol use	No	526	97.6
	Yes	13	2.4
Lifetime drug use	No	489	90.7
	Yes	50	9.3
Past 30-day drug use	No	527	97.8
	Yes	12	2.2
Lifetime tobacco use	No	522	96.8
	Yes	17	3.2
Past 30-day tobacco use	No	533	98.9
	Yes	6	1.1
Caregiver	Both parents	358	66.4
	Father only	13	2.4
	Mother only	114	21.2
	Guardian	54	10.0

Abbreviation: PHQ-A, Patient Health Questionnaire-Adolescent.

3.2 | Prevalence of depression among adolescents joining secondary schools in Nairobi County

The prevalence of depression was 14.5% among adolescents joining secondary school students in Nairobi County, with a mean PHQ-A score of 6.16 (SD = 3.16). Among males, the prevalence of depression was 15.9% ($n = 34$) compared to females who had a prevalence of 13.5% ($n = 44$). Suicide risk among adolescents was found to be 20.0% ($n = 108$) with a mean SBQ-R score of 4.88 (SD = 2.90).

3.3 | Predictors of depression among adolescent students joining secondary schools in Nairobi County

In univariable analysis, the following factors were associated with depression: bullying victimization (uPR = 4.17, confidence interval, CI [1.31–13.21]; $p = .015$), risk of suicidal behavior (uPR = 3.79, CI [2.43–5.91]; $p < .001$), romantic relationships (uPR = 1.95, CI [1.20–3.18]; $p = .007$), sexual activity (uPR = 1.90, CI [1.11–3.25]; $p = .019$), lifetime alcohol use (uPR = 3.19, CI [1.97–5.15]; $p < .001$), lifetime drug use [uPR = 2.52, CI [1.46–4.37]; $p = .001$),

TABLE 2 Suicidal ideation and attempt by gender.

Variable	Category	Gender				Total		Fisher's exact test	*p* Value
		Male		Female					
		n	%	*n*	%	*n*	%		
Lifetime suicidal ideation/ and or suicide attempts	Nonsuicidal subgroup	137	64.0	197	60.6	334	62.0	1.54	.676
	Suicide risk ideation	40	18.7	68	20.9	108	20.0		
	Suicide plan	33	15.4	49	15.1	82	15.2		
	Suicide attempt	4	1.9	11	3.4	15	2.8		
Frequency of suicidal ideation in the past 12 months	Never	145	67.8	202	62.2	347	64.4	4.261	.371
	Rarely	36	16.8	59	18.2	95	17.6		
	Sometimes	21	9.8	37	11.4	58	10.8		
	Often	7	3.3	9	2.8	16	3.0		
	Very often	5	2.3	18	5.5	23	4.3		
The threat of suicide attempt	Never	177	82.7	280	86.2	457	84.8	6.398	**.044**
	Sometimes	32	15.0	29	8.9	61	11.3		
	Once or twice a month	5	2.3	16	4.9	21	3.9		
Self-reported likelihood of future suicidal behavior	Never	180	84.1	255	78.5	435	80.7	8.912	.098
	Rather unlikely	22	10.3	44	13.5	66	12.2		
	Unlikely	7	3.3	4	1.2	11	2.0		
	Likely	3	1.4	14	4.3	17	3.2		
	Rather likely	1	0.5	4	1.2	5	0.9		
	Very likely	1	0.5	4	1.2	5	0.9		

Note: Bold value are statistically significant at $p < .05$.

past 30-day drug use (uPR = 3.01, CI [1.22–7.44]; $p = .017$), and lifetime tobacco use (uPR = 2.56, CI [1.11–5.88]; $p = .027$).

In the multivariable model, only the risk of suicidal behavior (aPR = 3.07, CI [1.94–4.88]; $p < .001$) and lifetime alcohol use (aPR = 2.24, CI [1.36–3.68]; $p = .001$) remained as statistically significant predictors of depression among adolescents joining secondary schools in Nairobi county. Bullying victimization was retained in the multivariable model but it was not statistically significant (aPR = 2.88, CI [0.90–9.24]; $p = .075$) (see Table 3).

4 | DISCUSSION

The study found a prevalence of 14.5% for depression. While this rate mirrors findings from around the world, with the prevalence of adolescent depression ranging from 8% to 72% (Ibrahim et al., 2022; Jha et al., 2017; Moeini et al., 2019; Mojtabai et al., 2016; Tang et al., 2019), it is a much lower rate compared to those of other studies on secondary school adolescents in the Kenyan context that have reported a prevalence of depression from 26.4%

TABLE 3 Predictors of depression among adolescents joining secondary schools in Nairobi County.

		Depression (PHQ-A ≥ 10)									
		No		Yes		Univariable analysis			Multivariable analysis		
Variable	Category	*n*	%	*n*	%	uPR	(95% CI)	*p* Value	aPR	(95% CI)	*p* Value
Bullying victimization	No	74	96.1	3	3.9	REF			REF		
	Yes	387	83.77	75	16.23	4.17	1.31–13.21	**.015**	2.88	0.90–9.24	.075
Sex	Male	180	84.11	34	15.89	1.17	0.75–1.84	.483			
	Female	281	86.46	44	13.54	REF					
School tier	National	172	86	28	14	REF					
	Extra county	144	85.71	24	14.29	1.02	0.59–1.76	.942			
	County	145	84.8	26	15.2	1.09	0.64–1.85	.762			
Type of school	Single	145	84.8	26	15.2	REF					
	Mixed	352	83.81	68	16.19	1.08	0.67–1.72	.760			
Religious affiliation	Christian	109	91.6	10	8.4	1.93	0.99–3.74	.053			
	Muslim	130	87.25	19	12.75	REF					
Social economic status	Low	183	84.72	33	15.28	REF					
	Middle	148	85.06	26	14.94	1.2	0.68–2.11	.530			
	High	248	84.93	44	15.07	1.17	0.65–2.12	.599			
Age category	11–14	213	86.23	34	13.77	1.09	0.7–1.71	.692			
	15–18	391	90.72	40	9.28	REF					
Suicide risk	No	70	64.81	38	35.19	REF			REF		
	Yes	389	87.61	55	12.39	3.79	2.43–5.91	**<.001**	3.07	1.94–4.85	**<.001**
Romantic relationship	No	72	75.79	23	24.21	REF					
	Yes	409	87.02	61	12.98	1.95	1.2–3.18	**.007**			

(Continues)

TABLE 3 (Continued)

Variable	Category	Depression (PHQ-A ≥ 10)				Univariable analysis			Multivariable analysis		
		No		Yes							
		n	%	*n*	%	uPR	(95% CI)	*p* Value	aPR	(95% CI)	*p* Value
Sexually active	No	52	75.36	17	24.64	REF					
	Yes	419	88.58	54	11.42	1.9	1.11–3.25	**.019**			
Lifetime alcohol use	No	42	63.64	24	36.36	REF			REF		
	Yes	450	85.55	76	14.45	3.19	1.97–5.15	**<.001**	2.24	1.36–3.68	**.001**
Past 30-day alcohol use	No	11	84.62	2	15.38	REF					
	Yes	427	87.32	62	12.68	1.06	0.26–4.34	.930			
Lifetime drug use	No	34	68	16	32	REF					
	Yes	454	86.15	73	13.85	2.52	1.46–4.37	**.001**			
Past 30-day drug use	No	7	58.33	5	41.67	REF					
	Yes	450	86.21	72	13.79	3.01	1.22–7.44	**.017**			
Lifetime tobacco use	No	11	64.71	6	35.29	REF					
	Yes	457	85.74	76	14.26	2.56	1.11–5.88	**.027**			
Past 30-day tobacco use	No	4	66.67	2	33.33	REF					
	Yes	308	86.03	50	13.97	2.34	0.57–9.52	.236			
Caregiver	Parents	11	84.62	2	15.38	1.51	0.6–3.78	.381			
	Father	93	81.58	21	18.42	1.66	0.32–8.56	.544			
	Mother	49	90.74	5	9.26	1.99	0.75–5.28	.167			
	Guardian	27	13.78	27	7.87	REF					

Note: Bold value are statistically significant at $p < .05$.

Abbreviations: aPR, adjusted prevalence ratios; CI, confidence interval; PHQ-A, Patient Health Questionnaire-Adolescent; uPR, unadjusted prevalence ratio.

(Khasakhala et al., 2012) to as high as 45.9% (Ndetei et al., 2008, 2016; Osborn et al., 2020). This lower rate is likely because the respondents in this study comprised only students in the first year of secondary school, whereas the other studies comprised students in either the final year of secondary school or a composite sample comprising first to final-year secondary school students.

Depression was more common among males (15.9%) than in females (13.5%), though this difference in prevalence rates was not statistically significant. This is contrary to studies that indicate that female adolescents are more likely to experience depression compared to males (Nyundo et al., 2020). However, given that this cohort of respondents was sampled very early in their secondary school life it is likely that the unique gender differences and stressors were yet to emerge. Nonetheless, it is still important to highlight the gender differences in the experience of depression since various studies have shown that gender is a significant factor in the development and progression of depression. Specifically, depressed girls are more likely to manifest internalizing distress (Sandberg-Thoma & Kamp Dush, 2014)—comprising mood, somatic, and anxiety disorders (Miller, 2013). Depressed boys on the other hand are more likely to show externalizing distress or behavioral problems in the long run, such as pathological gambling, substance use, and conduct disorders (Miller, 2013; Sandberg-Thoma & Kamp Dush, 2014).

Lifetime alcohol use emerged as a predictor of depression in multivariable analysis. The bidirectional relationship between alcohol use and depression has been reported severally in the literature. Alcohol may be used to alleviate the symptoms of depression, while on the other hand, problematic alcohol use or alcohol use disorder often results in social and biological problems that can lead to depression (Agosti & Levin, 2006; Magee & Connell, 2021; Tolliver & Anton, 2015).

Suicide risk was a predictor of depression. Among adolescents who were depressed, 59.1% were at risk of suicide. Depression is a known risk factor for adolescent suicidality as demonstrated in this study as well (Galaif et al., 2007; Khasakhala, Ndetei, & Mathai, 2013). Further, studies show that adolescent depression, alcohol use, and suicidality are intertwined in that they tend to be associated with each other, have their onset in early adolescence, and tend to increase in magnitude over time (Baiden et al., 2019; Galaif et al., 2007; Ganz & Sher, 2009; Kim et al., 2019). This means that in seeking to prevent adolescent depression, screening for and intervening against alcohol use and suicidality is just as critical. Suicidal behavior among adolescents in this study was further analyzed by gender. The results showed that the lifetime threat of suicide attempts was higher among males than females. This is contrary to most studies that show a higher propensity for suicide communication, suicide gesture, or threat of suicide among females than males (Nock & Kessler, 2006). However, there is a paucity of data on this specific phenomenon, especially in the Kenyan context and it is potentially an area that requires further study.

Bullying victimization predicted the prevalence of depression in univariable analysis but was not a statistically significant predictor in multivariable analysis. This is despite the fact that studies have demonstrated the link between adolescent bullying victimization and depression—where adolescents who are victimized are more likely to demonstrate depression and those who are depressed are more likely to be victimized (Mei et al., 2021; Schwartz et al., 2015). It is also worth noting that given the high prevalence of bullying victimization in this study (85.7%), the retention of the victimization variable in the model indicates that it is likely a mediating factor explaining depression in this cohort of adolescents.

These findings highlight the need to screen for and intervene against depression and the identified predictors before they result in clinically significant problems that are expensive and difficult to resolve (Avenevoli et al., 2008; Shorey et al., 2022; Weersing et al., 2016). School entrance interviews could provide an opportunity to screen for depression and its risk factors. The screening results could then be added to the students' medical history files in addition to the data that is already collected routinely. Future revisions of the national school health policy should make provisions for mental health assessment and screening when joining the secondary school and periodically while studying. As far as interventions are concerned, in addition to sensitizing existing school counselors on these emergent issues in adolescent mental health, counselor-led school-based group cognitive behavioral therapy could be implemented to reduce depression symptomatology (Eiraldi et al., 2016; Ruffolo & Fischer, 2009). This is likely the most feasible approach as it has been previously demonstrated to be effective against depression and anxiety yet cost-effective and sustainable (Eiraldi et al., 2016; Ruffolo & Fischer, 2009).

4.1 | Limitations of the study

The study was limited to an urban setting whose unique circumstances may not necessarily apply to peri-urban and rural settings. A future study could look at a wider scope of factors associated with depression among adolescents and include both peri-urban and rural settings. This would give a more global view of the problem and help inform future policies and interventions against the problem. However, these findings could inform future studies on the subject. Additionally, the study design limited the interpretation of causality, as well as the direction of association between variables; however, the study still provides valuable insights. Lastly, while the use of homogenous convenience sampling was the most feasible approach given the constraints of resources and the consenting procedure, the findings are still less generalizable than those that would arise from a purely random sample.

5 | CONCLUSION

There is a high prevalence of depression among students joining secondary schools in Nairobi. The predictors of depression include lifetime alcohol use and suicide risk. Entrance and periodic screening coupled with teacher-led school-based cognitive behavioral therapy could hold the key to screening for and intervening against depression and its risk factors in secondary schools in the Kenyan setting. Education and health policies should be enhanced to appropriately address these emerging adolescent mental health issues.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data cannot be shared for ethical/privacy reasons.

ETHICS STATEMENT

All study procedures were per the requirements of the Helsinki Declaration. To protect respondent rights, written informed consent and assent were sought before data collection—which included both the guardians and adolescent respondents themselves. All respondent data was anonymized to ensure that confidentiality was upheld. To clear identifiers, the following procedures were followed. First, the case IDs were regenerated randomly after merging all datasets, and the dates for the interview were changed to the month of the interview. The names of the schools which the students came from were also masked. Additionally, ethical approval was sought and received from the University of Eastern Africa Baraton Institutional Ethics Review Committee (Approval number B132019 and UEAB/REC/02/03/2020). Authorization for the study was also given by the State Department of Early Learning and Basic Education (MOE.HQS/3/6/104) and the National Commission for Science Technology and Innovation (NACOSTI/P/19/60398/28768). In schools where students scored at high risk for suicidal behavior and depression, the school counselors were informed so that appropriate care could be preferred to the students in keeping with prevailing policies.

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Factors Associated with Bullying Victimization among Adolescents Joining Public Secondary Schools in Nairobi County Kenya: A cross-sectional study

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Abstract

BACKGROUND

Bullying victimization in adolescence exposes young people to both short- and long-term mental health problems. These include depression and suicidality, whose prevalence has been on the rise around the world. Bullying, though officially banned in Kenyan secondary schools since 2013, has remained ubiquitous to the present day. This study aimed to elucidate the factors associated with bullying victimization among adolescents joining Form one at public secondary schools in Nairobi County, Kenya.

METHODOLOGY

This was an analytical cross-sectional design. Data were collected one month after the adolescents had joined secondary school. Data was collected from 539 adolescents attending 5 schools using the self-reported Adolescent Peer Relations questionnaire to assess bullying victimization as well as socio-demographic characteristics. Prevalence rates were generated using a generalized linear model (GLM) customized with a log link and a Poisson distribution for a common binary outcome.

RESULTS

In the univariable analysis, 85.7% (n=462) reported experiencing any bullying victimization. Of those who had depression, 93.5% (n=220) had experienced bullying victimization. The difference in prevalence rates between those who were depressed and those who weren't was statistically significant in the multivariable analysis (adjusted prevalence rate, aPR=1.33; 95%CI=1.05-1.68, p=0.033). Boys were more likely to experience physical victimization compared to girls (aPR=1.27; 95%CI=1.02-1.58, p=0.031).

CONCLUSION

The prevalence of bullying victimization is quite high, and the presence of depression and sex are significant factors associated with the risk of bullying victimization. Anti-bullying interventions in secondary schools should include a component of depression screening and treatment.

Keywords: *Mental Health, School Health, Bullying, Adolescents*

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Background

Bullying victimization refers to the subjection of an individual to a set of behaviours that are repetitive and intentional and have the purpose of causing either physical or psychological harm or both. There are two types of bullying all of which have different outcomes for the victims (1). Bullying victimization encompasses verbal abuse, social exclusion, physical abuse or hitting, as well as cyberbullying where victimization occurs using cell phones or the internet. Power imbalances in social interactions between adolescents are major facilitators of bullying victimization: individuals with more power victimize those holding less power. Bullying behavioural phenomenon arises as a result of power imbalances and the need for some peer group status to showcase their power (2,3). This study sought to elucidate the factors associated with bullying victimization among adolescents joining Form 1 at public secondary schools in Nairobi County, Kenya.

Bullying is a global problem, and its incidence in different countries is documented (4). In high-income countries (HIC), the prevalence of victimization through bullying is 15%- 55%, and aggressors are between 5%-39% (5–8). Although there is a dearth of research on low- and middle-income countries (LMICs), available research shows that the prevalence of bullying is between 7%-79% (6). A study carried out in Ghana shows a prevalence of bullying victimization at 40% for senior high school students and 59% for junior high school students (5). Considering that the implications of bullying transcend regions, a systematic review of bullying across different regions shows that the highest proportion of students reporting that they have been bullied comes from sub-Saharan Africa (48.2%) followed closely by North Africa (42.7%) and Middle East (41.1%) while Europe, the Caribbean, and Central America have the lowest proportion (less than 25%). Unlike countries in Europe, Central America, and the Caribbean that have continued to experience a reduction in bullying burden, countries in the Middle East and Africa have either witnessed an increase in bullying prevalence or seen no change in bullying proportion (9).

Specifically, in the Kenyan context, a recent study indicated that in a sample of secondary school students only 13.6% of them had not experienced bullying victimization (10). Indeed, one of the first studies on bullying in Kenyan schools reported that between 63.2% to 81.8% of students have experienced some form of bullying in secondary schools (11). A separate study in Kenya has reported a prevalence of between 28.6% to 42.2% (12). On the contrary, Itegi (2017) reported that nearly all students (98%) have experienced bullying in secondary schools.

Being repeatedly bullied or victimized in schools is associated with various factors at the individual, family, school, and community levels. (4,14,15). Nonetheless, individual and family-level factors have attracted more attention given their perceived contribution to enhancing the effectiveness of anti-bullying interventions (16). Individual factors associated with victimization relate to the internalization of problems through depression, anxiety, and suicide. In like manner, externalization of the problem through the use and abuse of psychoactive substances is also linked to bullying victimization (17).

Interestingly, several studies have identified a bi-directional relationship between depression and bullying victimization (18–20). Depressed adolescents due to the inherent withdrawal and lack of social integration are predisposed to bullying victimization. On the other hand, bullying victimization in adolescence has also been linked to the experience of depression or depressive symptoms. Ruiz *et al.* (2019) found that a lack of social support influenced depression in victimized adolescents because of internalizing characteristics. Further, victims who are depressed may appear to be weak and therefore not able to resist aggression by their peers (22).

Other individual factors such as gender, age, and religion have also been found to be associated with victimization (23). Studies have noted gender differences in the bullying continuum with boys more likely to be involved in physical forms of bullying because of their physical strength and girls in verbal bullying attributed to their propensity to be more communicative than boys (2,5). Other notable predictors of victimization documented in the literature are related to the family condition, adolescent sexual behaviour, relationship experiences, children insecurity issues, home environment, school/classroom norms, and age (17,24)

Adolescence is a transitory stage in life for young people. The transition from childhood to adolescence is fraught with physical, social, and psychosocial challenges that affect adolescents differently. The usually co-occurring transition from primary or elementary school to secondary or junior high school often coincides with the transition from late childhood to early adolescence – and can be highly disruptive to the lives of adolescents (25).

Studies around the world have documented episodes and experiences of bullying victimization of adolescents transitioning to secondary school (26). This is often assumed to be a rite of passage and taken as a form of initiation to a higher level of education. Given the fact that junior secondary school students are disproportionately victimized in Kenyan secondary schools, this scenario means that adolescents joining secondary schools in Kenya are at a heightened risk of victimization. Schools can and do indeed play an important role in adolescents' social and identity development (27). The impact of school bullying on adolescents has been linked to a host of adolescent adjustment difficulties, academic difficulties, conduct disorders, a wide range of negative mental health outcomes, health problems, and substance abuse difficulties (28–30). Therefore, understanding context-specific factors of bullying is not only important but a prerequisite to offering the right intervention for bullying in school.

Actors in the education and health sectors around the world have cracked down on bullying victimization. Kenya, like the rest of the world, is not left behind. Since 2013, the Kenyan Basic Education Act has prohibited mental and physical harassment in schools. However, studies show that the imperfect implementation of this policy means that while bullying rates are likely to remain high, the phenomenon itself is concealed from parents, teachers, and decision-makers in the education sector (31). Additionally, both the Kenya Ministry of Health Mental Health Policy 2015-2030 and the Kenya School Health Policy 2018 are silent on the issue of bullying and the health risks that it poses to children and adolescents (32,33).

Methodology

Study design

The study utilized an analytical cross-sectional design, where data was collected at a single point in time.

Study sites

The study was carried out in 5 secondary schools in Nairobi County: 1 boys' school (School A), 2 girls' only schools (Schools B and C), and 2 mixed schools (Schools D and E). Of the 5, 3 were boarding schools (A, B, and C), and the rest (D and E) were day schools.

Study population

The study population comprised students who had joined Form 1 in the selected schools in January 2020. The selection criteria for the students were that they would have to have attended the school for at least one month before data collection as well as informed consent from the parents and assent from the students themselves.

Sampling

The five schools were selected at random from a frame of 71 schools. A convenience sample of 539 adolescents was

recruited for the study based on meeting the study criteria.

Data collection

Data was collected using a self-reported questionnaire in March 2020. The questionnaire collected data on adolescent socio-demographic characteristics, lifetime and past 30-day alcohol, drug, and tobacco use, socioeconomic status, romantic relationship involvement, and sexual activity. Additionally, Section B of the Adolescent Peer Relations Instrument (APR) – which is an 18-item scale – comprising 3 subscales on verbal, social, and physical bullying, was used to collect data on bullying victimization (34,35). For each of the APR subscales, a cut-off of 7 or higher was used to classify respondents as victims of each type of bullying. For the overall scale, the classification was based on a score of 19 or higher – to result in a binary outcome. This was supplemented by data from the Patient Health Questionnaire-Adolescent (PHQ-A): assessing depression – where a score of 5 or higher classified a respondent as having any depressive symptoms regardless of severity (36). The rationale for the assessment of any depressive symptoms rather than the traditional screening or diagnostic cutoff of 10 or higher was that the severity of depression is a continuum and mild depression likely progresses to moderate or severe depression when left unattended or untreated (37). Given that the respondents were just joining secondary schools, it was decided that at this stage the breadth of the problem was as important as its depth. That is, very few studies among secondary school adolescents assess the presence of any depressive symptoms and studies show that by the time mild depression progresses to major depression it is often more difficult and expensive to intervene (38,39).

The Suicide Behaviour Questionnaire-Revised (SBQ-R) was used to assess suicidal behaviour, with an overall score of 7 or higher classifying a respondent as at-risk of suicide (40,41). These questionnaires have been validated for use either in Kenya or other African countries for use with adolescent populations.

Data analysis

Data analysis was carried out using STATA version 14. Descriptive statistics were computed as frequency distributions of the variables of interest in the study. For cross-sectional surveys, prevalence rates are recommended as a measure of risk for common outcomes >10% compared to odd ratios (42). The factors associated with bullying and other outcomes were assessed using a generalized linear model (GLM), using a Poisson distribution with a log-link function, was used to estimate adjusted prevalence ratios (aPR). The basis for the inclusion of variables in the multivariate model was a relaxed p-value of 0.2.

Ethical approval

All study procedures were following the requirements of the Helsinki Declaration. To protect respondent rights, written informed consent and assent were sought before data collection – which included both the guardians and adolescent respondents themselves. All respondent data was anonymized to ensure that confidentiality was upheld. Additionally, ethical approval was sought and received from the University of Eastern Africa Baraton Institutional Ethics Review Committee (UEAB-IERC). Authorization for the study was also given by the State Department of Early Learning and Basic Education and the National Commission for Science Technology and Innovation.

Results

Socio-demographic characteristics

A total of 539 adolescents participated in the study. Females accounted for 60.3% (n=325) of the respondents. All questionnaires were filled out by all respondents and there was no missing data. Depression was present in 63.6% (n=342) of the adolescents while suicide risk was reported in 20% (n=108) of the adolescents. The results showed that 40.1% (n=216) were from middle socioeconomic

status (SES) and 27.6% (n=149) were from low SES. The adolescents who had experienced lifetime drug use accounted for 9.3% (n=50) and 66.4% (n=358) living with both parents (Table 1). Table 2 shows the cross-tabulation of victimization and sociodemographic characteristics.

Factors associated with bullying victimization

Univariable analysis showed that of the 539 adolescents interviewed, 85.7% (n=462) reported experiencing bullying victimization. In the bivariable analysis adolescents who were depressed were more likely to experience bullying victimization compared to those who were not depressed (unadjusted prevalence ratio uPR=1.25; 95%CI=1.03-1.52). The prevalence rates of bullying victimization amongst males (93.5%, n=200) compared to those of females (80.6%, n=262). The differences were not statistically significant (uPR=1.16; 95%CI=0.96-1.39).

Table 1:
Socio-demographic Characteristics of Adolescents joining Public Secondary Schools in Nairobi County, Kenya

Variable	Category	n	%
Bullying Victimization	No	77	14.3
	Yes	462	85.7
Depression Present	No	196	36.4
	Yes	343	63.6
Sex	Male	214	39.7
	Female	325	60.3
Type of School	Single	368	68.3
	Mixed	171	31.7
Religion	Christian	420	77.9
	Muslim	119	22.1
Social economic status	Low	149	27.6
	Middle	216	40.1
	High	174	32.3
Age category	11 to 14	292	54.2
	15 to 18	247	45.8
Suicide risk	No	431	80.0
	Yes	108	20.0
Romantic relationship	No	444	82.4
	Yes	95	17.6
Sexually active	No	470	87.2
	Yes	69	12.8
Lifetime alcohol use	No	473	87.8
	Yes	66	12.2
Past 30-day alcohol use	No	526	97.6
	Yes	13	2.4
Lifetime drug use	No	489	90.7
	Yes	50	9.3
Past 30-day drug use	No	527	97.8
	Yes	12	2.2
Lifetime tobacco use	No	522	96.8
	Yes	17	3.2
Past 30-day tobacco use	No	533	98.9
	Yes	6	1.1
Caregiver	Both parents	358	66.4
	Father only	13	2.4
	Mother only	114	21.2
	Guardian	54	10.0

Table 2: Cross-tabulation of Victimization and Socio-demographic Characteristics

Variable	Category	Any Bullying Victimization				Verbal Victimization				Social Victimization				Physical Victimization			
		No		Yes		No		Yes		No		Yes		No		Yes	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Depression	No	51	26.0	145	74.0	68	34.7	128	65.3	97	49.5	99	50.5	98	50.0	98	50.0
	Yes	26	7.6	317	92.4	50	14.6	293	85.4	91	26.5	252	73.5	106	30.9	237	69.1
Sex	Male	14	6.5	200	93.5	27	12.6	187	87.4	62	29.0	152	71.0	58	27.1	156	72.9
	Female	63	19.4	262	80.6	91	28.0	234	72.0	126	38.8	199	61.2	146	44.9	179	55.1
Type of School	Single	51	13.9	317	86.1	84	22.8	284	77.2	126	34.2	242	65.8	146	39.7	222	60.3
	Mixed	26	15.2	145	84.8	34	19.9	137	80.1	62	36.3	109	63.7	58	33.9	113	66.1
Religious affiliation	Christian	51	12.1	369	87.9	78	18.6	342	81.4	141	33.6	279	66.4	150	35.7	270	64.3
	Muslim	26	21.8	93	78.2	40	33.6	79	66.4	47	39.5	72	60.5	54	45.4	65	54.6
Social economic status	Low	33	22.1	116	77.9	39	26.2	110	73.8	68	45.6	81	54.4	71	47.7	78	52.3
	Middle	28	13.0	188	87.0	53	24.5	163	75.5	68	31.5	148	68.5	79	36.6	137	63.4
	High	16	9.2	158	90.8	26	14.9	148	85.1	52	29.9	122	70.1	54	31.0	120	69.0
Age category	11 to 14	40	13.7	252	86.3	68	23.3	224	76.7	97	33.2	195	66.8	106	36.3	186	63.7
	15 to 18	37	15.0	210	85.0	50	20.2	197	79.8	91	36.8	156	63.2	98	39.7	149	60.3
Suicide Risk	No	70	16.2	361	83.8	106	24.6	325	75.4	166	38.5	265	61.5	171	39.7	260	60.3
	Yes	7	6.5	101	93.5	12	11.1	96	88.9	22	20.4	86	79.6	33	30.6	75	69.4
Romantic relationship	No	75	16.9	369	83.1	114	25.7	330	74.3	170	38.3	274	61.7	182	41.0	262	59.0
	Yes	2	2.1	93	97.9	4	4.2	91	95.8	18	18.9	77	81.1	22	23.2	73	76.8
Sexually active	No	71	15.1	399	84.9	111	23.6	359	76.4	168	35.7	302	64.3	183	38.9	287	61.1
	Yes	6	8.7	63	91.3	7	10.1	62	89.9	20	29.0	49	71.0	21	30.4	48	69.6
Lifetime alcohol use	No	75	15.9	398	84.1	113	23.9	360	76.1	177	37.4	296	62.6	193	40.8	280	59.2
	Yes	2	3.0	64	97.0	5	7.6	61	92.4	11	16.7	55	83.3	11	16.7	55	83.3
Past 30-day alcohol use	No	77	14.6	449	85.4	118	22.4	408	77.6	186	35.4	340	64.6	203	38.6	323	61.4
	Yes	0	0.0	13	100	0	0.0	13	100	2	15.4	11	84.6	1	7.7	12	92.3
Lifetime drug use	No	74	15.1	415	84.9	115	23.5	374	76.5	176	36.0	313	64.0	194	39.7	295	60.3
	Yes	3	6.0	47	94.0	3	6.0	47	94.0	12	24.0	38	76.0	10	20.0	40	80.0
Past 30-day drug use	No	76	14.4	451	85.6	117	22.2	410	77.8	185	35.1	342	64.9	202	38.3	325	61.7
	Yes	1	8.3	11	91.7	1	8.3	11	91.7	3	25.0	9	75.0	2	16.7	10	83.3
Lifetime tobacco use	No	76	14.6	446	85.4	117	22.4	405	77.6	181	34.7	341	65.3	199	38.1	323	61.9
	Yes	1	5.9	16	94.1	1	5.9	16	94.1	7	41.2	10	58.8	5	29.4	12	70.6
Past 30-day tobacco use	No	77	14.4	456	85.6	118	22.1	415	77.9	187	35.1	346	64.9	201	37.7	332	62.3
	Yes	0	0.0	6	100	0	0.0	6	100	1	16.7	5	83.3	3	50.0	3	50.0
Caregiver	Parents	51	14.2	307	85.8	76	21.2	282	78.8	125	34.9	233	65.1	139	38.8	219	61.2
	Father	1	7.7	12	92.3	2	15.4	11	84.6	4	30.8	9	69.2	1	7.7	12	92.3
	Mother	17	14.9	97	85.1	24	21.1	90	78.9	41	36.0	73	64.0	43	37.7	71	62.3
	Guardian	8	14.8	46	85.2	16	29.6	38	70.4	18	33.3	36	66.7	21	38.9	33	61.1

Other factors such as religious affiliations, socioeconomic status, age, risk of suicide, having a romantic relationship, lifetime alcohol use, and the type of caregiver of the adolescent were not significantly associated with the risk of bullying victimization (Table 3).

In multivariable regression analysis, the presence of depression (p-value=0.026), sex (p-value=0.115), and being in a romantic relationship (p=0.158) were included as confounders. The results showed that the presence of depression was significantly associated with the risk of bully victimization. Almost all (93.5%) of adolescents who experienced depression had experienced bullying victimization, higher than the 80.6% of non-depressed adolescents who were victimized. The difference in prevalence rates was statistically significant (adjusted prevalence rate, aPR=1.33; 95%CI=1.05-1.68). However, experiencing physical victimization were similar between males and female (aPR=1.14; 95%CI=0.95-1.38), Table 4.

Factors associated with verbal victimization (Table 3)

In the univariable analysis, the results show that of the 539 adolescents interviewed, 65.3% (n=128) of those who experienced depression had also experienced verbal victimization, while 85.4% (n=293) had experienced verbal victimization but did not experience depression. The difference was statistically significant (uPR=1.31; 95%CI=1.06-1.61). The results showed that prevalence rates of verbal victimization were 87.4% (n=187) among males and 72% (n=234) among females. The difference was statistically significant (uPR=1.21; 95%CI=1.01-1.47). The results showed that 81.4% (n=342) of Christians experienced verbal victimization compared to 66.4% of Muslims (n=79). Religious affiliation was not significantly associated with verbal victimization (uPR=1.23; 95%CI=0.96-1.57). Being in a romantic relationship was significantly associated with an increased risk of verbal victimization included (uPR=1.29; 95%CI=1.02-1.63).

In the multivariable regression analysis accounting for the presence of depression, sex, and religious affiliations as confounders, the results show the presence of depression was a significant factor associated with verbal victimization. Adolescents who had experienced depression were 1.28 times more likely to experience verbal bullying (aPR4=1.28; 95%CI=1.04-1.58). The sex and religious affiliations of the adolescents were not associated with verbal victimization in the multivariable analysis.

Factors associated with social victimization

In the univariable analysis, 73.5% (n=252) of those who experienced depression had also experienced social victimization, while 73.5% (n=252) had experienced social victimization but did not experience depression. The difference was statistically significant (uPR=1.45; 95%CI=1.15-1.83). The results showed that prevalence rates of social victimization were 71.0% (n=152) among males and 61.2% (n=199) among females. The difference was not statistically significant (uPR=1.16; 95%CI=0.94-1.43). The results showed that 66.4% (n=279) of Christians experienced social victimization compared to 60.5% of Muslims (n=72). Religious affiliation was not significantly associated with verbal victimization (uPR=1.10; 95%CI=0.85-1.42). Being in a romantic relationship was significantly associated with an increased risk of social victimization included (uPR=1.31; 95%CI=1.01-1.69). Those who are at risk of suicide were more likely to experience social victimization (uPR=1.30; 95%CI=1.01-1.65), Table 3.

Table 3: Factors Associated with Bullying Victimization among Adolescents Joining Public Secondary Schools in Nairobi County (Unadjusted Prevalence Rates)

Variable	Category	Any Bullying Victimization		Verbal victimization		Social Victimization		Physical victimization	
		uPR (95% CI)	p-value	uPR (95% CI)	p-value	uPR (95% CI)	p-value	uPR (95% CI)	p-value
Depression	No	REF		REF		REF		REF	
	Yes	1.25 (1.03-1.52)	**0.026**	1.31(1.06-1.61)	**0.011**	1.45(1.15-1.83)	**0.002**	1.38(1.09-1.75)	**0.007**
Sex	Male	1.16(0.96-1.39)	0.115	1.21(1.01-1.47)	**0.048**	1.16(0.94-1.43)	**0.168**	1.32(1.07-1.64)	**0.010**
	Female	REF		REF		REF		REF	
Type of School	Single	1.02(0.83-1.24)	0.875	REF		1.03(0.82-1.29)	0.787	REF	
	Mixed	REF		1.04(0.85-1.27)	0.719	REF		1.10(0.87-1.37)	0.430
Religious affiliation	Christian	1.12(0.89-1.41)	0.313	1.23(0.96-1.57)	0.102	1.10(0.85-1.42)	0.480	1.18(0.90-1.54)	0.238
	Muslim	REF		REF		REF		REF	
Social economic status	Low	REF		REF		REF		REF	
	Middle	1.12(0.89-1.41)	0.345	1.02(0.80-1.30)	0.859	1.26(0.96-1.65)	0.094	1.21(0.92-1.60)	0.176
	High	1.17(0.92-1.48)	0.208	1.15(0.90-1.47)	0.261	1.29(0.97-1.70)	0.076	1.32(0.99-1.75)	0.058
Age category	11 to 14	1.02(0.85-1.22)	0.973	REF		1.06(0.87-1.31)	0.604	1.06(0.85-1.31)	0.621
	15 to 18	REF		1.04(0.86-1.26)	0.690	REF		REF	
Suicide Risk	No	REF		REF		REF		REF	
	Yes	1.12(0.89-1.39)	0.328	1.18(0.94-1.48)	0.157	1.30(1.01-1.65)	**0.037**	1.15(0.89-1.49)	0.283
Romantic relationship	No	REF		REF		REF		REF	
	Yes	1.18(0.93-1.48)	0.158	1.29(1.02-1.63)	**0.032**	1.31(1.02-1.69)	**0.035**	1.30(1.00-1.69)	**0.046**
Sexually active	No	REF		REF		REF		REF	
	Yes	1.08(0.82-1.40)	0.591	1.18(0.90-1.54)	0.238	1.11(0.82-1.49)	0.516	1.14(0.84-1.55)	0.403
Lifetime alcohol use	No	REF		REF		REF		REF	
	Yes	1.15(10.89-1.50)	0.292	1.21(0.93-1.59)	0.161	1.33(1.00-1.78)	0.051	1.41(1.05-1.88)	**0.020**
Past 30-day alcohol use	No	REF		REF		REF		REF	
	Yes	1.17(0.67-2.03)	0.574	1.29(0.74-2.24)	0.367	1.31(0.72-2.39)	0.379	1.50(0.84-2.67)	0.166
Lifetime drug use	No	REF		REF		REF		REF	
	Yes	1.11(0.82-1.50)	0.507	1.22(0.90-1.66)	0.183	1.19(0.85-1.66)	0.317	1.32(0.95-1.85)	0.094
Past 30-day drug use	No	REF		REF		REF		REF	
	Yes	1.07(0.59-1.95)	0.822	1.18(0.65-2.14)	0.591	1.16(0.60-2.24)	0.668	1.35(0.72-2.53)	0.348
Lifetime tobacco use	No	REF		REF		REF		REF	
	Yes	1.10(0.67-1.81)	0.704	1.21(0.74-2.00)	0.449	0.90(0.48-1.69)	0.744	1.14(0.64-2.03)	0.654
Past 30-day tobacco use	No	REF		REF		REF		REF	
	Yes	1.17(0.52-2.61)	0.704	1.28(0.57-2.88)	0.543	1.28(0.53-3.10)	0.579	0.80(0.26-2.50)	0.705
Caregiver	Parents	1.01(0.74-1.37)	0.966	1.12(0.80-1.57)	0.514	0.98(0.69-1.39)	0.893	1.00(0.69-1.44)	0.996
	Father	1.08(0.57-2.05)	0.804	1.20(0.61-2.35)	0.590	1.04(0.50-2.16)	0.919	1.51(0.78-2.92)	0.221
	Mother	1.00(0.70-1.42)	0.995	1.12(0.77-1.64)	0.552	0.96(0.64-1.43)	0.843	1.02(0.67-1.54)	0.928
	Guardian	REF		REF		REF		REF	

Table 4:
Factors Associated with Bullying Victimization among Adolescents Joining Public Secondary Schools in Nairobi County (Adjusted Prevalence Rates)

Variable	Category	Any Bullying Victimization		Verbal victimization		Social Victimization		Physical victimization	
		aPR (95% CI)	p-value	aPR (95% CI)	p-value	aPR (95% CI)	p-value	aPR (95% CI)	p-value
Depression	No	REF		REF		REF		REF	
	Yes	1.24(1.02-1.51)	**0.033**	1.28(1.04-1.58)	**0.020**	1.42(1.13-1.80)	**0.003**	1.33(1.05-1.68)	**0.019**
Sex	Male	1.14(0.95-1.38)	0.150	1.19(0.98-1.44)	0.078			1.27(1.02-1.58)	**0.031**
	Female	REF		REF				REF	
Religious affiliation	Christian			1.19(0.93-1.52)	0.169				
	Muslim			REF					
Lifetime alcohol use	No					REF		REF	
	Yes					1.25(0.94-1.67)	0.129	1.27(0.95-1.71)	0.106

In the multivariable regression analysis accounting for the presence of depression, sex, religious affiliations, and lifetime drug use as confounders, the results show the presence of depression was a significant factor associated with verbal victimization. Adolescents who had experienced depression were 1.42 times more likely to experience social bullying (aPR=1.42; 95%CI=1.13-1.80). The sex, religious affiliations, and risk of suicide of the adolescents were not associated with social victimization in the multivariable analysis, as shown in Table 4.

Factors associated with physical victimization

In the univariable analysis, 69.1% (n=237) of those who experienced depression had also experienced physical victimization, while 50.0% (n=98) had experienced social victimization but did not experience depression. The difference was statistically significant (uPR=1.38; 95%CI=1.09-1.75). The results showed that prevalence rates of physical victimization were 72.9% (n=156) among males and 55.1% (n=179) among females. The difference was not statistically significant (uPR=1.32; 95%CI=1.07-1.64). The results showed that 66.4% (n=279) of Christians experienced social victimization compared to 64.3% of Muslims (n=270). Religious affiliation was significantly associated with verbal victimization (uPR=1.18; 95%CI=0.90-1.54). Being in a romantic relationship was significantly associated with an increased risk of physical victimization included (uPR=1.30; 95%CI=1.01-1.69). Those who are at risk of suicide were not associated with physical victimization (uPR=1.15; 95%CI=0.89-1.49), see Table 3.

In the multivariable regression analysis accounting for the presence of depression, sex, religious affiliations, and risk of suicide as confounders, the results show the presence of depression was a significant factor associated with verbal victimization. Adolescents who had experienced depression were 1.33 times more likely to experience social bullying (aPR=1.33; 95%CI=1.05-1.68). Similarly, males were more likely to experience physical victimization compared to females (uPR=1.32; 95%CI=1.07-1.64). The religious affiliations and risk of suicide of the adolescents were not associated with social victimization in the multivariable analysis, see Table 4.

Discussion

The study found a prevalence of bullying victimization of 85.7%. This is higher than the 7-79% reported by Biswas et al (6). This is similar to a study that recorded a bullying victimization prevalence of 86.4% among secondary schools in Machakos County of Kenya (10). Overall, this shows that there is a high prevalence of bullying victimization among adolescents joining public secondary schools. Indeed, this prevalence is almost twice as high as the average reported for sub-Saharan Africa at 48.2% (9). This high prevalence of bullying victimization suggests that despite the ban on bullying in secondary schools, there is still a major problem that requires more robust interventions. These interventions may need to move beyond policies to specific anti-bullying victimization interventions or activities which are made mandatory.

In this study, adolescents with depression were more likely to experience verbal, physical, and social bullying victimization compared to those who were not depressed. Depression has a significant impact on an individual's health and poses a significant concern to their interaction with their peers (43). Luk *et al.* (2010) found that among both females and males, depression was associated with victimization while for females' depression was also associated with substance abuse (44). These findings are similar to other studies which found a significant association between depression and bullying (22,45–48). Adolescents who are bullied tend to have a lower sense of self-worth. This lowers their level of satisfaction with life. Consequently, they will have trouble assimilating with their peers and have lower social status, impaired coping as well as increasing their risk for other negative individual and environmental factors

and predisposing them to social problems like bullying.

In this study, male adolescents had a higher prevalence rate of physical bullying victimization compared to females. This finding is contrary to most studies that show female adolescents are more likely to experience bullying victimization compared to males (13,49–51). However, a study by Chrysanthou and Vasilakis (2020) demonstrated that male adolescents are more likely to experience bullying victimization compared to female adolescents (52). The higher prevalence of victimization among males in this study may be attributed to the fact that the traditional stigma or shame associated with bullying victimization has been eroded as well as greater awareness and support from teachers of the bullying problem in schools. The combination of these factors creates a situation where boys can speak up about victimization experiences without the expectation of retaliation. Additionally, the study population for this study comprised younger teens who are more likely to disclose abuse or bullying victimization (53,54), this may explain why more males spoke up compared to the norm. Further, given the fact that the respondents had just recently joined secondary school, it is likely that they had yet to be inculcated into the secretive culture common in secondary schools (52).

Romantic relationships and lifetime alcohol use were found to be statistically significantly associated with suicide risk at the univariable level they were not so in the multivariable analysis. This could be because suicide risk is collinear with depression and was eliminated from the model. For romantic involvement and lifetime alcohol use, the univariable associations may have been weak. These findings are contrary to Baiden *et al.* (2019) who found a significant association between bullying victimization and suicidality (55). Another study that captured adolescents aged 12-17 years revealed that bullying victimization was associated with mental disorders, suicidality, and self-harm (56).

Study limitations

The study was limited to an urban setting whose unique circumstances may not necessarily apply to peri-urban and rural settings. A future study could look at factors associated with bullying victimization in peri-urban and rural settings. This would give a more global view of the problem and help inform future policies and interventions against the problem. Additionally, the utilization of the cross-sectional design limits the interpretation of the directionality of the bullying victimization-depression dyad identified in this study. However, this finding could inform future studies on the subject.

Conclusion

The prevalence of bullying is quite high, and the presence of depression and alcohol use are significant factors associated with the risk of bullying victimization. Anti-bullying interventions should be targeted at boys and include a component of depression screening and treatment across gender. Lastly, physical victimization is another key factor for male students and interventions should be put in place to specifically monitor and prevent this.

Author contributions

AGM, GK, JM, and LK conceptualized the study. AGM collected the data and carried out the analysis. PM oversaw and advised on the data analysis. All authors contributed to the manuscript writing and reviewed the paper at different stages

Data availability statement

Data cannot be shared for ethical/privacy reasons.

Declaration of Interest

The authors declare no competing interests.

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None.

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Article

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Research

Factors associated with the risk of suicidal behavior among adolescents transitioning to secondary school in Nairobi County, Kenya: a cross-sectional study

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Factors associated with the risk of suicidal behavior among adolescents transitioning to secondary school in Nairobi County, Kenya: a cross-sectional study

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Abstract

Introduction: *adolescence is a transitory stage in the lives of young people. The transition from primary to secondary school among adolescents is associated with suicidal behavior but is not well characterized in the Kenyan context. This study sought to elucidate factors associated with the risk of suicidal behavior among adolescents aged 11-18 years in transition to secondary school.* ***Methods:*** *a cross-sectional design was employed in the study that was conducted among adolescents in 5 randomly selected secondary schools in Nairobi County. The study involved 539 students who had joined form 1 in January 2020. Data were collected using the suicide behavior questionnaire-revised (SBQ-R) in March 2020. Factors associated with suicidal behavior were assessed using a generalized linear model (GLM), using a poisson distribution with a log-link function to estimate adjusted prevalence ratios (aPR), and a significance level of p=.05.* ***Results:*** *one-fifth (20.04%) of adolescents with a median age of 14 years were at risk of suicidal behavior. Depression (aPR=3.16, C.I {1.85, 5.41}, p=0.001) and lifetime alcohol use (aPR=1.87, C.I {1.17, 2.97}, p=0.009) were found to be significant factors for suicidal behavior.* ***Conclusion:*** *depression and lifetime alcohol use are associated with the risk of suicidal behavior among adolescents transitioning from primary to secondary school. Interventions may need to be targeted at the pre-secondary or primary school level to prevent underage alcohol use and enhancement of social support to prevent depression in this demographic of the population.*

Introduction

Adolescence is a transitory stage in life: the transition from childhood to young adulthood, physical and morphological changes, and changes in social relationships. These transitions also coincide with the transition from primary to secondary school and this is likely to place an extra mental burden on adolescents. This is associated with a variety of challenges surrounding sexuality, rapid physical growth, interpersonal relationships, autonomy, and risk-taking behaviors among other issues. These issues can also predispose adolescents to suicidal behavior [1]. Adolescents account for over 250.000 annual deaths by suicide making suicide the second most prevalent cause of adolescent mortality around the world [2]. While studies on the prevalence and correlates of suicidal behavior are few in the Kenyan context, some authors have shown that suicidal behavior accounts for one in twenty deaths among children and adolescents in Kenya [3]. Depression, history of trauma, bullying, the development of social media and the platform it provides for cyberbullying, alcohol and substance use, parental rejection, and trauma are indicated for adolescent suicidal behavior. Other factors such as food insecurity and sexual intercourse are associated with an enhanced risk of suicidal behavior, especially among adolescent girls who are the most affected [4]. Indeed, a 2016 study demonstrated that adolescent girls have a higher likelihood of displaying suicidal behaviors. However, they are also less likely than boys to complete a suicide attempt [5]. The breadth of these associated factors points to a need for a context-specific understanding of suicidal behavior. This would help to inform contextually relevant suicide prevention screening and interventions [6-8]. While studies into adolescent suicidal behavior have tended to focus either on continuing students or a combination of transitioning and continuing students [9,10], we postulated that assessing adolescents in the transitory period would likely yield a deeper understanding of adolescent suicidal behavior at school. This has been demonstrated elsewhere, where adolescents transitioning to high school are at an increased risk of suicidal behavior [10]. The aim was to understand whether the predisposing factors for suicidal behavior were already present by the time adolescents were joining secondary schools or not. Guided by an intention to enrich the evidence base for adolescent mental health promotion in the school setting - where the opportunity to intervene exists [11]. This study sought to elucidate the factors associated with risk

of suicidal behavior among adolescents transitioning between primary and secondary schools in Nairobi County, Kenya.

Methods

Study design and setting: the study utilized a cross-sectional design. The study was carried out in 5 secondary schools in Nairobi County: 1 boy school (school A), 2 girls´ only schools (schools B and C), and 2 mixed schools (schools D and E). Of the 5, 3 were boarding schools (A, B, and C), and the rest (D and E) were day schools. Nairobi county is a cosmopolitan county in the heart of Kenya that hosts the capital city, Nairobi. It is an urban county and is the seat of political, economic, and social power in Kenya. By the time the study was being carried out (January to March 2020), there were a total of 71 public secondary schools in the county which were either mixed schools, boys- or girls-only schools. Some of the schools were day schools while others were boarding schools. The study data collection was done just before the first reported cases of coronavirus in Kenya.

Study Population: the study population comprised adolescents who had joined form 1 in the selected schools in January 2020. The selection criteria for the adolescents were that they would have to have been transitioning from primary to secondary school, would have attended the school for at least one month before data collection, and informed consent from the parents and assent from the adolescents themselves.

Sampling: the five schools were selected by simple random sampling from a pool of 71 schools. A convenience sample of 539 adolescents was recruited for the study based on meeting the study criteria. The sample size was arrived at using Fisher´s formula based on the prevalence of suicidal behavior of 27.1% [9], which gave a minimum sample size of 304. A design effect of 2 was applied to the sample size, and a total of 608 students were invited, consent and assent were received from 539 guardians and students who participated, and their data were analyzed.

Data collection: data were collected using a self-administered questionnaire in March 2020. Quality checks during data collection ensured that there was no missing data. The questionnaire collected data on adolescent sociodemographic characteristics (gender: binary either male or female, age: binary either 11-14 years or 15-18 years, description of caregiver: 4 categories mother only, father only, both or guardian); lifetime and past 30-day alcohol, drug, and tobacco use (binary: yes or no), socioeconomic status (classified as low 0-10, middle 11-20, and high 21+ based on an additive index of household ownership of various items), romantic relationship involvement (binary: yes or no), and sexual activity (binary: yes or no). Additionally, the suicide behavior questionnaire-revised (SBQ-R) was used to assess suicidal behavior, with an overall score of 7 or higher classifying an adolescent at-risk of suicidal behavior [12,13]. These questionnaires have been validated for use either in Kenya or other African countries for use with adolescent populations [9].

Data analysis: data analysis was carried out using STATA version 14. Descriptive statistics were computed as frequency distributions of the variables of interest in the study. The factors associated with suicidal behavior were analyzed through a generalized linear model (GLM), using a poisson distribution with a log-link function, to estimate adjusted prevalence ratios (aPR). This is because, for cross-sectional surveys, prevalence ratios are recommended as a measure of risk for common outcomes >10% compared to odd ratios [14]. The basis for the inclusion of variables in the multivariable model was a relaxed p-value of 0.2 in univariable analysis, but the evaluation of statistical significance was based on $p < .05$.

Ethical considerations: to protect the rights of the respondents, informed consent and assent were sought before data collection - which included both the guardians and adolescents. Permission to

access and conduct the study in the selected schools was obtained from the County Director of Education. Additionally, ethical approval was sought and received from the University of Eastern Africa Baraton Institutional Ethics Review Committee (Approval number B132019 and renewed as UEAB/REC/02/03/2020).

Results

Sociodemographic characteristics of the study respondents: most of the adolescents were female 60.3% (n= 325) while males constituted 39.4% (n= 214). The results indicated that 66.4% (n=358) of the adolescents were living with both parents, 2.4 % (n=13) of the participants reported to be living with a father only, 21.2% (n=114) were living with a mother only and 10.0% (n=54) were living with a guardian. The highest number of adolescents were Christians (77.9%) compared to Muslims (22.1%). In terms of socio-economic status, 40.1% (n=216) of the adolescents were from the middle socio-economic class, and 32.3% (n=174) said that they were from the high socio-economic class. In terms of suicide behavior, 80.0% (n=431) of the adolescents, did not report suicide risk compared to 20.0% (n=108) who reported risk of suicide. The study results indicated that 36.4% (n=196) of the adolescents had depressive symptoms while 63.6% (n=343) did not have depressive symptoms. The majority of the adolescents were not in romantic relationships (82.4%, n=444), were not sexually active (87.2%, n=470), and had never used alcohol (87.8%, n=473) and tobacco (98.9%, n=522) Table 1.

Risk of suicidal behavior among adolescents transitioning to secondary school in Nairobi County: one-fifth (n=108, 20.04%) of adolescents in this study scored 7 or higher on the SBQ-R, meaning they had a high risk for suicidal behavior.

Factors associated with risk of suicidal behavior among adolescents attending public secondary schools in Nairobi County: in univariable analysis, depression, lifetime alcohol use, and past 30-days alcohol use were found to be significant risk factors for suicidal behavior at 95% confidence. Adolescents who reported depressive symptoms were found to have a higher prevalence ratio for suicidal behavior compared to those who did not have suicidal behavior [uPR=3.28, C.I (1.93-5.59); p=0.001]. Adolescents who had a history of lifetime alcohol use were found to have a higher prevalence ratio of suicidal behavior than adolescents who did not have a history of lifetime alcohol use [uPR=2.16 C.I (1.38-3.38); p= 0.001]. Specifically, alcohol use in the last 30 days was also a significant factor in suicidal behavior. Adolescents who had used alcohol in the past 30 days had a higher prevalence ratio for suicidal behavior than those who had not used alcohol in the past 30 days [uPR=2.38 (1.04-5.42); p=0.03]. Variables that met the relaxed threshold p-value of 0.2 at the univariable level were included in the multivariable model. In multivariable analysis, depression and lifetime alcohol use were found to be significant factors for suicidal behavior. While controlling for alcohol use, adolescents who had reported depressive symptoms had a higher prevalence ratio for suicidal behavior than those who did not report depressive symptoms (aPR=3.16, C.I {1.85, 5.41}, P=0.001). It was also found that while controlling for depressive symptoms, adolescents who had a history of lifetime alcohol use were found to have a higher prevalence ratio for suicidal behavior than adolescents who did not have a history of lifetime alcohol use (aPR=1.87, C.I {1.17, 2.97}, P=0.009) Table 2.

Discussion

This study sought to elucidate the factors associated with the risk of suicidal behavior among adolescents transitioning between primary and secondary schools in Nairobi County, Kenya. This study demonstrated that lifetime alcohol use and depression are the two most important factors associated with the risk of suicidal behavior among adolescents transitioning to secondary school. These findings corroborate other similar studies which demonstrated a link between adolescent

suicidal behavior and depression and alcohol use respectively [15-17]. Adolescent depression is the single most important predictor of suicidal behavior [16]. In terms of adolescent alcohol use, this current study agrees with another study which demonstrated that any lifetime use of alcohol results in a two-fold increase in the risk of suicidal behavior [17]. However, more work is needed to fully characterize and understand the magnitude and directionality of the association between alcohol use and suicidal behavior among adolescents [18]. Several authors have demonstrated an association between gender and suicidal behavior, either independently or moderating the effect of depression or other predictors [5,16,19]. However, contrary to other studies this study did not demonstrate any link between adolescent gender and suicidal behavior this could be accounted for since adolescents in this study were in the formative stages of their secondary school education, they are, arguably, a homogeneous group and the unique gender differences and challenges that they are likely to face throughout secondary school were yet to emerge. Adolescent sexual activity - especially early sexual debut or initiation - is another factor that previous studies have associated with suicidal ideation and behavior [20], as well as a moderate to high risk of suicidal behavior in Kenya [21]. Sexual activity was not shown as statistically significantly associated with the risk of suicidal behavior in this study.

This current study did not demonstrate a link between illicit drug use or other substance use and the risk of suicidal behavior among adolescents. Contrary to this, a 2019 study found that cannabis and other illicit drug use are predictors of suicidal behavior in older adolescents. Similarly, for bullying victimization - while 85.7% of adolescents had experienced some form of victimization in the two months that they had been in secondary school bullying victimization had not yet become a factor associated with suicide risk. The association of bullying victimization among adolescents with current and suicidal ideation and behavior has been demonstrated severally [22,23]. The finding that bullying victimization is not associated with suicide risk could also be explained by the fact that the victimization was still ongoing. Added to this, studies have demonstrated that the effects of victimization in adolescence are seen either in later adolescence or young adulthood [24]. The use of the cross-sectional design limits the ability to draw causal inferences in this study. However, the study findings still provide useful insights that can inform future studies on suicidal behavior among adolescents in Kenya. Our findings corroborate the findings of other studies in Africa and beyond. Therefore, our recommendations are likely applicable beyond the specific local context of our study

Conclusion

Lifetime alcohol use and depression were associated with the risk of suicidal behavior among adolescents transitioning to secondary in Nairobi County. These factors were likely pre-existing before adolescents joined secondary schools. Therefore, preventive interventions should be targeted at primary and elementary schools. In seeking to prevent the early onset of alcohol use, the government and community stakeholders should partner to enforce alcohol distribution and consumption guidelines prohibiting the sale and consumption of alcohol to underage persons. Preventing depression among pre-secondary adolescents and children could be accomplished through contextualized school and community-based interventions to enhance social support. Additionally, while the Ministry of Health Suicide Prevention Strategy 2021-2026 is a laudable milestone, its implementation and future direction require an enhanced recognition and emphasis on adolescent suicidal behavior.

What is known about this topic

- *Adolescents account for over 250,000 annual deaths by suicide-making suicide the second most prevalent cause of adolescent mortality around the world;*

- *Suicidal behavior in adolescents is associated with gender with females being at high risk, but male adolescents are more likely to complete suicide.*

What this study adds

- *This study sheds light on factors associated with suicidal behavior in the adolescent transition from primary to secondary school;*
- *Depression is likely to present in pre-secondary school children and adolescents and there may be a need to intervene at the primary school level to prevent suicidal behavior;*
- *Lifetime alcohol use is a key predictor of suicide behavior in adolescents transitioning to secondary school.*

Competing interests

The authors declare no competing interests.

Authors' contributions

All authors conceptualized the study, Aggrey Gisiora Mokaya carried out the data collection and analysis and wrote the first draft; Gideon Mutie Kikuvi, Joseph Mutai, Lincoln Imbugwa Khasakhala, and Peter Memiah reviewed the manuscript and supervised different phases of the entire project. All the authors have read and agreed to the final version of the manuscript.

Tables

Table 1: socio-demographic characteristics of adolescents transitioning to public secondary schools in Nairobi County, Kenya

Table 2: factors associated with risk of suicidal behavior among adolescents transitioning to secondary schools in Nairobi County, poisson regression showing unadjusted and adjusted prevalence ratios

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Table 1: socio-demographic characteristics of adolescents transitioning to public secondary schools in Nairobi County, Kenya

Variable	Category	n	%
Depression present	No	196	36.4
	Yes	343	63.6
Sex	Male	214	39.7
	Female	325	60.3
Type of school	Single	368	68.3
	Mixed	171	31.7
Religion	Christian	420	77.9
	Muslim	119	22.1
Social-economic status	Low	149	27.6
	Middle	216	40.1
	High	174	32.3
Age category	11 to 14	292	54.2
	15 to 18	247	45.8
Suicide risk	No	431	80.0
	Yes	108	20.0
Romantic relationship	No	444	82.4
	Yes	95	17.6
Bullying victimization	No	77	14.3
	Yes	462	85.7
Sexually active	No	470	87.2
	Yes	69	12.8
Lifetime alcohol use	No	473	87.8
	Yes	66	12.2
Past 30-day alcohol use	No	526	97.6
	Yes	13	2.4
Lifetime drug use	No	489	90.7
	Yes	50	9.3
Past 30-day drug use	No	527	97.8
	Yes	12	2.2
Lifetime tobacco use	No	522	96.8
	Yes	17	3.2
Past 30-day tobacco use	No	533	98.9
	Yes	6	1.1
Caregiver	Both parents	358	66.4
	Father only	13	2.4
	Mother only	114	21.2
	Guardian	54	10.0

Table 2: factors associated with risk of suicidal behavior among adolescents transitioning to secondary schools in Nairobi County, poisson regression showing unadjusted and adjusted prevalence ratios

Study variables	Category	Risk of suicide				Univariable analysis			Multivariable analysis		
		No		Yes		uPR	95% CI	P-value	aPR	95% CI	P-value
		n	%	n	%						
Depression	No	180	91.8	16	8.2	Ref			Ref		
	Yes	251	73.2	92	26.8	3.28	1.93-5.59	<0.001	3.16	1.85-5.41	<0.001
Sex	Male	177	82.7	37	17.3	0.79	0.53-1.18	0.249	0.70	0.47-1.05	0.088
	Female	254	78.2	71	21.8	Ref			Ref		
Type of school	Single	295	80.2	73	19.8	Ref					
	Mixed	136	79.5	35	20.5	1.03	0.69-1.54	0.879			
Religious affiliation	Christian	332	79.0	88	21.0	1.24	0.77-2.03	0.373			
	Muslim	99	83.2	20	16.8	Ref					
Social economic status	Low	123	82.6	26	17.4	Ref					
	Middle	171	79.2	45	20.8	1.19	0.74-1.93	0.472			
	High	137	78.7	37	21.3	1.22	0.74-2.01	0.440			
Age category	11 to 14	235	80.5	57	19.5	0.95	0.65-1.38	0.771			
	15 to 18	196	79.4	51	20.6	Ref					
Romantic relationship	No	364	82.0	80	18.0	Ref					
	Yes	67	70.5	28	29.5	1.64	1.06-2.51				
Sexually active	No	379	80.6	91	19.4	Ref					
	Yes	52	75.4	17	24.6	1.27	0.76-2.14	0.362			
Bullying victimization	No	70	90.9	7	9.1						
	Yes	361	78.1	101	21.9	1.12	0.89-1.39	0.328			
Lifetime alcohol use	No	390	82.5	83	17.5	Ref			Ref		
	Yes	41	62.1	25	37.9	2.16	1.38-3.38	0.001	1.87	1.17-2.97	0.009
Past 30-day alcohol use	No	424	80.6	102	19.4	Ref					
	Yes	7	53.8	6	46.2	2.38	1.04-5.42	0.039			
Lifetime drug use	No	397	81.2	92	18.8	Ref					
	Yes	34	68.0	16	32.0	1.70	1.00-2.19	0.050			
Past 30-day drug use	No	423	80.3	104	19.7	Ref					
	Yes	8	66.7	4	33.3	1.68	0.62-4.59	0.304			
Lifetime tobacco use	No	419	80.3	103	19.7	Ref					
	Yes	12	70.6	5	29.4	1.49	0.61-3.66	0.383			
Past 30-day tobacco use	No	426	79.9	107	20.1	Ref					
	Yes	5	83.3	1	16.7	0.83	0.12-5.95	0.853			
Caregiver	Parents	295	82.4	63	17.6	0.95	0.49-1.85	0.881	0.80	0.41-1.57	0.519
	Father	8	61.5	5	38.5	2.07	0.71-6.08	0.182	1.70	0.57-5.07	0.344
	Mother	84	73.7	30	26.3	1.42	0.69-2.91	0.336	1.14	0.55-2.34	0.723
	Guardian	44	81.5	10	18.5	Ref			Ref		

CI: confidence interval, uPR: unadjusted prevalence ratios aPR: adjusted prevalence ratios