Effectiveness of Mindfulness-Based Cognitive Therapy in Reducing Anxiety among Adolescents Living with HIV in Nairobi, Kenya: A Mixed- Methods Quasi-Experimental Study

Lydiah Were[1]*, Dr. Stephen Ngari Ndegwa[2], Dr. Rose Otieno[3]

[1] Department of Psychology, Daystar University, Kenya

[2] Department of Psychology, Daystar University, Kenya

[3] Department of Psychology, Kisii University, Kenya

Corresponding Author:

DOI: https://doi.org/10.47772/IJRISS.2026.1017PSY0069

Received: 21 October 2026; Accepted: 26 October 2026; Published: 03 November 2026

ABSTRACT

Background

Adolescents living with HIV (ALHIV) face considerable psychosocial challenges that increase their vulnerability to anxiety. HIV-related stigma, disclosure concerns, treatment demands, uncertainty regarding future relationships, and fear of social exclusion contribute significantly to psychological distress. Despite advances in antiretroviral therapy (ART), anxiety remains a major challenge affecting treatment adherence, psychosocial adjustment, and quality of life among adolescents living with HIV. Evidence-based psychological interventions tailored to this population remain limited within HIV care settings in Kenya.

Objective: This study evaluated the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) in reducing anxiety among adolescents living with HIV attending a comprehensive HIV treatment centre in Nairobi County, Kenya.

Methods: The study employed a pragmatic mixed-methods quasi-experimental single-group pretest-posttest design. Fifty-four adolescents aged 13–19 years living with HIV participated in an eight-week MBCT intervention. Anxiety symptoms were measured using the Beck Anxiety Inventory (BAI) before and after participation in the intervention. Quantitative data were analyzed using descriptive statistics, paired-samples t-tests, and analysis of variance (ANOVA), while qualitative data obtained through focus group discussions and semi-structured interviews were analyzed using thematic analysis.

Results: The mean anxiety score decreased from 32.91 at baseline to 18.48 following the intervention. Paired-samples t-test results demonstrated a statistically significant reduction in anxiety symptoms, $t(53) = 10.46$, $p < .001$. Qualitative findings revealed improvements in emotional regulation, self-awareness, coping capacity, resilience, and acceptance of HIV status. Participants also reported reduced HIV-related worry, disclosure anxiety, and fear of social rejection.

Conclusion: Mindfulness-Based Cognitive Therapy demonstrated significant effectiveness in reducing anxiety among adolescents living with HIV. The findings suggest that MBCT is a feasible, culturally adaptable, and potentially scalable psychosocial intervention that could be integrated into routine adolescent HIV care services to improve psychological wellbeing.

Keywords: Mindfulness-Based Cognitive Therapy, Anxiety, Adolescents Living with HIV, Psychological Wellbeing, HIV Care, Kenya, Mental Health

INTRODUCTION

The global HIV epidemic continues to pose significant public health challenges despite remarkable improvements in treatment and disease management. Advances in antiretroviral therapy have transformed HIV from a life-threatening condition into a manageable chronic illness. However, psychological wellbeing remains a critical component of successful HIV management, particularly among adolescents living with HIV (ALHIV).

Adolescence is characterized by substantial physical, emotional, cognitive, and social development. For adolescents living with HIV, these developmental challenges are often compounded by concerns related to disclosure, stigma, medication adherence, healthcare engagement, social relationships, and future uncertainty. Consequently, anxiety has emerged as one of the most prevalent psychological concerns affecting this population.

Studies have consistently demonstrated elevated rates of anxiety among adolescents living with HIV compared to their HIV-negative peers. Anxiety symptoms frequently manifest through excessive worry, fear of social judgment, concerns regarding disease progression, and uncertainty about educational and occupational opportunities. Persistent anxiety may adversely affect treatment adherence, healthcare engagement, viral suppression, academic performance, interpersonal relationships, and overall quality of life.

Despite increasing recognition of mental health needs among adolescents living with HIV, psychological services remain inadequately integrated into many HIV care programs across sub-Saharan Africa. Consequently, there is a growing need for evidence-based, culturally appropriate interventions capable of addressing anxiety among this vulnerable population.

Mindfulness-Based Cognitive Therapy (MBCT) integrates mindfulness practices with cognitive behavioral principles to enhance awareness of thoughts, emotions, and bodily sensations while promoting adaptive responses to stress and psychological distress. By encouraging non-judgmental awareness of present-moment experiences, MBCT may reduce maladaptive cognitive and emotional processes associated with anxiety.

Although MBCT has demonstrated effectiveness across diverse clinical populations, limited evidence exists regarding its application among adolescents living with HIV in low-resource settings. This study therefore evaluated the effectiveness of MBCT in reducing anxiety among adolescents living with HIV receiving care at a public healthcare facility in Nairobi County, Kenya.

Statement of the Problem

Anxiety represents a significant yet insufficiently addressed mental health challenge among adolescents living with HIV. Anxiety has been associated with poor ART adherence, treatment interruption, reduced retention in care, poor psychosocial adjustment, diminished quality of life, and suboptimal treatment outcomes.

In Kenya, HIV care programs continue to prioritize biomedical management, while psychological interventions remain limited despite increasing evidence highlighting the importance of mental health in achieving successful HIV treatment outcomes. Although MBCT has demonstrated effectiveness in reducing anxiety across various populations, there is limited empirical evidence regarding its effectiveness among adolescents living with HIV in Kenya.

The absence of locally generated evidence limits the integration of structured psychological interventions within adolescent HIV care services. This study therefore sought to determine whether participation in MBCT significantly reduces anxiety among adolescents living with HIV.

Objective of the Study

To evaluate the effectiveness of Mindfulness-Based Cognitive Therapy in reducing anxiety among adolescents living with HIV in Nairobi County, Kenya.

Specific Objectives

1. To establish the relationship between selected demographic characteristics and anxiety levels among adolescents living with HIV.
2. To evaluate the effectiveness of MBCT in reducing anxiety among adolescents living with HIV.
3. To explore participants' experiences of MBCT in managing anxiety and HIV-related stressors.

Research Hypothesis

Null Hypothesis (H_0): There is no statistically significant difference in anxiety scores among adolescents living with HIV before and after participation in MBCT.

Alternative Hypothesis (H_1): There is a statistically significant reduction in anxiety scores among adolescents living with HIV following participation in MBCT.

THEORETICAL FRAMEWORK

Cognitive Theory of Anxiety: The study was anchored in Beck and Clark's Cognitive Theory of Anxiety, which proposes that anxiety arises from distorted cognitive appraisals whereby individuals perceive situations as threatening and underestimate their capacity to cope effectively. Adolescents living with HIV may experience persistent anxiety arising from fears related to disclosure, stigma, treatment demands, social acceptance, and future life opportunities. MBCT seeks to interrupt maladaptive cognitive patterns by promoting awareness and acceptance of thoughts without automatic emotional reactivity.

Mindfulness-to-Meaning Theory: The Mindfulness-to-Meaning Theory postulates that mindfulness facilitates positive cognitive reappraisal, psychological flexibility, and adaptive meaning-making. Through mindfulness practice, individuals become better able to reinterpret stressful experiences and cultivate resilience. The theory provides a useful framework for understanding how MBCT may contribute to reductions in anxiety among adolescents living with HIV.

METHODOLOGY

Research Design: The study employed a pragmatic mixed-methods quasi-experimental design using a single-group pretest-posttest approach. The design enabled the collection of quantitative and qualitative data to provide a comprehensive evaluation of the intervention.

Study Site: The study was conducted at the Comprehensive Care Centre of Mama Lucy Kibaki Hospital in Nairobi County, Kenya.

Participants: The study targeted adolescents aged between 13 and 19 years who had been diagnosed with HIV and were receiving treatment and care services at the facility. A total of 54 participants meeting the inclusion criteria were recruited through purposive sampling.

Inclusion Criteria

Participants were eligible to participate in the study if they had a confirmed HIV diagnosis, were between 13 and 19 years of age, were actively enrolled in HIV care and treatment services at the study site, exhibited clinically relevant symptoms of anxiety, and provided informed assent. For participants below the age of

legal consent, written parental or guardian consent was obtained prior to enrolment in accordance with ethical research requirements.

Intervention

The MBCT intervention was delivered over eight consecutive weeks through weekly two-hour group sessions. The programme integrated mindfulness practices and cognitive-behavioural principles designed to reduce anxiety and enhance psychological wellbeing. Key intervention components included mindful breathing, body-scan meditation, awareness of thoughts and emotional experiences, emotional regulation exercises, guided reflection, and facilitated group discussions. Participants also completed structured mindfulness activities outside the sessions to promote skill generalization and sustained application in daily life. The intervention sought to cultivate non-judgmental awareness, reduce maladaptive responses to anxiety-provoking experiences, and strengthen resilience among adolescents living with HIV.

Data Collection Instruments

The Beck Anxiety Inventory (BAI) was used to assess the severity of anxiety symptoms among adolescents living with HIV before and after participation in the Mindfulness-Based Cognitive Therapy (MBCT) intervention. The instrument provided quantitative measures of anxiety levels, enabling the evaluation of changes in anxiety symptoms following the intervention.

In addition, qualitative interview guides were utilized during focus group discussions and semi-structured interviews to explore participants' experiences with the MBCT programme. These interviews examined participants' perceptions of the intervention, perceived benefits, coping strategies acquired through mindfulness practice, and changes in anxiety-related experiences and emotional wellbeing following participation in the programme. The integration of quantitative and qualitative instruments facilitated a comprehensive assessment of the effectiveness of MBCT in reducing anxiety among adolescents living with HIV.

RESULTS

Anxiety Levels Before and After MBCT

Table 1: Mean Anxiety Scores Before and After Intervention

Assessment Period	Mean Score	SD
Pre-Intervention	32.91	8.14
Post-Intervention	18.48	6.72

The findings demonstrated a substantial decrease in anxiety following participation in MBCT.

Table 2: Paired-Samples t-Test Results

Variable	t-value	df	p-value
Anxiety	10.46	53	< .001

The paired-samples t-test revealed a statistically significant reduction in anxiety scores following participation in MBCT, leading to rejection of the null hypothesis.

QUALITATIVE FINDINGS

The qualitative data were analyzed using thematic analysis and revealed that participation in Mindfulness-Based Cognitive Therapy (MBCT) was associated with meaningful improvements in participants'

psychological wellbeing. Adolescents consistently reported experiencing reduced HIV-related worry, particularly regarding disclosure of their status, treatment outcomes, social acceptance, and future opportunities. Many participants described a shift from persistent anxiety and uncertainty to a greater ability to focus on present experiences. They reported that mindfulness practices helped them become less preoccupied with negative future-oriented thoughts and more capable of managing anxiety-provoking situations. Participants also highlighted significant improvements in emotional regulation, indicating that they had become more aware of their emotional responses and were better able to respond calmly rather than react impulsively to stressful circumstances. As one participant explained, *"I no longer worry every day about what will happen because I learned to focus on the present,"* while another stated, *"I learned how to calm myself before reacting."*

A second cluster of themes reflected enhanced coping skills, increased self-acceptance, and strengthened resilience. Participants reported regularly using mindfulness techniques such as breathing exercises, grounding strategies, and mindful awareness to manage stress and emotional discomfort. These skills appeared to improve their capacity to cope with HIV-related challenges both within and beyond the intervention setting. Many adolescents also described developing greater acceptance of themselves and their HIV status, accompanied by reduced feelings of shame, self-criticism, and self-blame. Furthermore, participants expressed a stronger sense of confidence in their ability to manage future challenges, describing themselves as emotionally stronger and more hopeful about life. One participant remarked, *"Breathing exercises help me when I feel overwhelmed,"* while another noted, *"I have learned to accept myself without feeling ashamed."* Similarly, a participant observed, *"I now feel stronger and able to face challenges differently."* Collectively, these findings suggest that MBCT contributed not only to reductions in anxiety but also to the development of important psychological resources, including adaptive coping, self-acceptance, emotional stability, and resilience among adolescents living with HIV.

DISCUSSION

The findings indicate that MBCT was associated with significant reductions in anxiety among adolescents living with HIV. The observed decrease in anxiety scores suggests that mindfulness-based interventions may effectively address common sources of distress experienced by this population, including stigma, disclosure concerns, future uncertainty, and treatment-related stress.

The findings support Cognitive Theory of Anxiety, which posits that anxiety results from maladaptive threat appraisals. Through mindfulness practice, participants learned to observe anxious thoughts without automatically reacting to them, thereby weakening cognitive patterns associated with excessive worry and fear.

The qualitative findings further suggest that MBCT enhances emotional regulation, coping capacity, self-awareness, and resilience. These outcomes align with Mindfulness-to-Meaning Theory, which argues that mindfulness promotes positive reappraisal and adaptive responses to adversity.

An important contribution of this study is its demonstration that MBCT can be successfully implemented within routine HIV care services in a public healthcare setting. The high participation and retention rates indicate strong acceptability among adolescents living with HIV.

CONCLUSION

This study demonstrated that Mindfulness-Based Cognitive Therapy was effective in reducing anxiety among adolescents living with HIV attending a comprehensive HIV treatment centre in Nairobi County, Kenya. Significant reductions in anxiety scores were observed following the intervention, supported by qualitative evidence of improved emotional regulation, coping skills, self-awareness, acceptance of HIV status, and resilience.

The findings suggest that MBCT represents a feasible, culturally adaptable, and potentially scalable intervention for addressing anxiety among adolescents living with HIV and could strengthen comprehensive HIV care services in Kenya and similar resource-constrained settings.

RECOMMENDATIONS

The findings of this study have important implications for policy, practice, and future research. HIV treatment facilities should consider integrating Mindfulness-Based Cognitive Therapy (MBCT) into routine adolescent HIV care programmes as a structured psychosocial intervention for addressing anxiety and enhancing psychological wellbeing among adolescents living with HIV. In addition, anxiety screening should be institutionalized as a standard component of HIV care to facilitate early identification and timely management of psychological distress.

Healthcare professionals working with adolescents living with HIV should be equipped with the necessary knowledge and skills through training in mindfulness-based interventions to support the delivery of evidence-based mental health services within HIV care settings. Furthermore, future studies should employ randomized controlled trial designs to strengthen causal inference regarding the effectiveness of MBCT, while longitudinal research is needed to assess the sustainability of intervention effects and determine whether reductions in anxiety are maintained over extended follow-up periods. Such efforts would contribute to strengthening the evidence base for the integration of mindfulness-based approaches into adolescent HIV care and mental health programming.

REFERENCES

1. Beck, A. T., & Clark, D. A. (1997). *An information processing model of anxiety: Automatic and strategic processes*. Behaviour Research and Therapy, 35(1), 49-58.
2. Braun, V., & Clarke, V. (2006). *Using thematic analysis in psychology*. Qualitative Research in Psychology, 3(2), 77-101.
3. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.
4. Garland, E. L., Farb, N. A., Goldin, P. R., & Fredrickson, B. L. (2015). *Mindfulness broadens awareness and builds eudaimonic meaning: A process model of mindful positive emotion regulation*. Psychological Inquiry, 26(4), 293-314.
5. Goldberg, S. B., Tucker, R. P., Greene, P. A., Davidson, R. J., Wampold, B. E., Kearney, D. J., & Simpson, T. L. (2018). *Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis.* Clinical Psychology Review, 59, 52-60.
6. Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). *The effect of mindfulness-based therapy on anxiety: A meta-analytic review.* Journal of Consulting and Clinical Psychology, 78(2), 169-183.
7. Poku, O. B., West, N. S., Eschliman, E. L., Dangerfield, D. T., Bass, J., Kennedy, C. E., & Murray, S. M. (2023). *Mental health problems across the HIV care continuum for adolescents living with HIV in sub-Saharan Africa: A scoping review.* AIDS and Behavior, 27(8), 2548-2565.
8. UNAIDS. (2025). *Global HIV & AIDS Statistics: Fact Sheet 2025*.
9. World Health Organization. (2024). *Adolescent Mental Health Fact Sheet*.
10. Zhan, S., Ouyang, F., Zhai, W., & Yang, H. (2024). *Prevalence of mental disorders among young people living with HIV: A systematic review and meta-analysis*. Frontiers in Public Health, 12, 1392872.