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Research Article

Effects of Mindfulness-Based Cognitive Therapy and Mental Health Literacy Education on Sleep Disturbance and Suicidal Ideation Among Senior Secondary School Students in the Federal Capital Territory, Abuja, Nigeria

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Abstract

This study investigated the effects of Mindfulness-Based Cognitive Therapy (MBCT) and Mental Health Literacy Education (MHLE) on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory (FCT), Abuja, Nigeria. Sleep disturbance and suicidal ideation are increasingly recognised as causally linked through shared pathways of rumination and cognitive hyperarousal, yet evidence-based intervention research addressing both outcomes concurrently in low- and middle-income country school settings remains critically limited. A quasi-experimental pre-test post-test control group design was employed. A purposive sample of 54 Senior Secondary School Two (SS2) students (27 males, 27 females) meeting clinical screening thresholds for both conditions was drawn from three public secondary schools across the AMAC, Bwari, and Gwagwalada Area Councils of the FCT. Participants were randomly assigned to MBCT (n = 18), MHLE (n = 18), or a waitlist control condition (n = 18). Both interventions were delivered over 12 weeks in structured weekly group sessions. The Pittsburgh Sleep Quality Index (PSQI) and Item 9 of the Patient Health Questionnaire (PHQ-9) served as validated outcome measures. Analysis of Covariance (ANCOVA), with pre-test scores as the covariate, was employed to test the null hypotheses at the 0.05 significance level. Both MBCT and MHLE produced statistically significant reductions in sleep disturbance and suicidal ideation relative to the waitlist control. MBCT demonstrated significantly greater efficacy than MHLE across both outcomes, with large effect sizes (η^2p = .77 and .68, respectively). These findings support the integration of brief, group-based MBCT into secondary school counselling frameworks and provide scalable evidence for low-resource settings globally.

Keywords: mindfulness-based cognitive therapy; mental health literacy education; sleep disturbance; suicidal ideation; adolescent mental health; secondary schools; Nigeria; quasi-experimental design.

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Introduction

Adolescence is a critical neurodevelopmental period marked by heightened vulnerability to mental health difficulties (WHO, 2021). Among the most significant in secondary school populations are sleep disturbance and suicidal ideation, which are increasingly understood as interrelated through shared mechanisms such as rumination, cognitive hyperarousal, and emotional dysregulation (Harvey, 2002; Ribeiro et al., 2018). Globally, one in seven adolescents experiences a mental health condition, with most receiving no formal intervention (WHO, 2021). In Nigeria, the burden is substantial, with depression affecting approximately 27%, anxiety 30%, and behavioural disorders being the most prevalent diagnostic category among adolescents (Ogunlade et al., 2025). Despite this, the treatment gap in sub-Saharan Africa remains around 90% (WHO, 2022), while school-based services in the FCT remain limited, with only 37% resource availability reported and persistently low help-seeking due to stigma and poor awareness (Momoh et al., 2025; Chukwuemeka et al., 2026). These gaps underscore the need for brief, scalable, school-deliverable interventions.

Sleep disturbance is increasingly identified as a critical and proximal risk factor in the development and escalation of suicidal ideation among adolescents. Longitudinal evidence indicates that insomnia and other forms of sleep disturbance predict suicidal ideation independently of depression severity, suggesting that sleep disruption is not merely a symptom of underlying psychopathology but a distinct and modifiable risk pathway (Liu et al., 2020). Mechanistically, sleep disturbance contributes to prolonged cognitive hyperarousal, heightened emotional reactivity, impaired executive functioning, and reduced distress tolerance, all of which collectively increase vulnerability to maladaptive cognitive processes such as rumination and hopelessness (Harvey, 2002). These processes create a self-reinforcing cycle in which poor sleep intensifies negative cognition, which in turn further disrupts sleep, thereby escalating psychological distress and increasing the likelihood of suicidal ideation. Despite this well-established theoretical and empirical linkage, there remains a notable absence of controlled intervention studies within secondary school settings in low- and middle-income countries that directly target the sleep–suicidal ideation pathway.

Mindfulness-Based Cognitive Therapy (MBCT), developed by Segal, Williams, and Teasdale (2002), integrates mindfulness meditation practices with cognitive therapy techniques to interrupt maladaptive cognitive patterns such as rumination and cognitive reactivity. By cultivating non-judgmental awareness of thoughts and bodily states, MBCT helps individuals disengage from automatic negative thinking processes that sustain both insomnia and suicidal ideation. Evidence from adolescent populations in high-income settings suggests that MBCT is effective in reducing insomnia severity, depressive cognition, and suicidal ideation (Ames et al., 2014; Raes et al., 2014). In contrast, Mental Health Literacy Education (MHLE), developed by Jorm et al. (1997), focuses on improving knowledge of mental health conditions, reducing stigma, and enhancing help-seeking behaviour through structured psychoeducation. While MHLE has demonstrated effectiveness in improving mental health awareness and reducing stigma among Nigerian secondary school students (Oduguwa et al., 2017), it does not directly engage with the cognitive and

affective mechanisms underlying sleep disturbance and suicidal ideation. This theoretical divergence makes a direct comparison between MBCT and MHLE particularly important for determining whether mechanism-targeted interventions yield superior outcomes in school-based settings.

Research Questions

1. What is the effect of Mindfulness-Based Cognitive Therapy (MBCT) on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja?
2. What is the effect of Mental Health Literacy Education (MHLE) on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja?
3. Is there a significant difference between the effects of MBCT and MHLE on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja?

Statement of Hypotheses

H_{01}. Mindfulness-Based Cognitive Therapy has no significant effect on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja, at the 0.05 level of significance.

H_{02}. Mental Health Literacy Education has no significant effect on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja, at the 0.05 level of significance.

H_{03}. There is no significant difference between the effects of MBCT and MHLE on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja, at the 0.05 level of significance.

Methodology

A quasi-experimental pre-test post-test control group design was used to examine the effects of Mindfulness-Based Cognitive Therapy (MBCT) and Mental Health Literacy Education (MHLE) on sleep disturbance and suicidal ideation among SS2 students in the Federal Capital Territory, Abuja, Nigeria. Fifty-four students aged 15–18 years from three purposively selected public secondary schools in AMAC, Bwari, and Gwagwalada were screened using the Pittsburgh Sleep Quality Index (PSQI) and PHQ-9 Item 9. Eligible participants meeting clinical thresholds and without concurrent psychiatric treatment were assigned to MBCT (n=18), MHLE (n=18), or a waitlist control group (n=18), with one condition per school.

Both interventions lasted 12 weeks with weekly 60-minute sessions facilitated by the researcher; MBCT integrated mindfulness practice and cognitive psychoeducation, while MHLE focused on mental health literacy, sleep education, stigma reduction, and help-seeking. Sleep disturbance was measured using the PSQI (α=0.81) and suicidal ideation using PHQ-9 Item 9 (α=0.84), supplemented by teacher observations. Data were analysed using descriptive statistics and ANCOVA controlling for pre-test scores, with significance set at $p<.05$ and effect sizes reported as η^2p. Ethical approval, informed consent, confidentiality, and safeguarding procedures were maintained throughout.

Results and Discussion

Results are presented in line with the research questions and corresponding hypotheses. Descriptive statistics are followed by ANCOVA results and integrated interpretation.

Research Question One

Table 1 shows that students in the MBCT group recorded substantial improvements across both outcomes, with sleep disturbance decreasing from 12.83 (SD = 1.94) to 6.11 (SD = 1.72), representing a reduction of 6.72 points, while suicidal ideation decreased from 2.11 (SD = 0.68) to 0.72 (SD = 0.46), representing a reduction of 1.39 points. This indicates that MBCT was effective in reducing both sleep disturbance and suicidal ideation over the 12-week intervention period.

Table 1. MBCT Group.

N	Pre-Test Mean	SD	Post-Test Mean	SD	Mean Difference
18	12.83	1.94	6.11	1.72	6.72 (Sleep Disturbance)
18	2.11	0.68	0.72	0.46	1.39 (Suicidal Ideation)

Research Question Two

Table 2 shows that students in the MHLE group recorded moderate improvements in both outcomes, with sleep disturbance decreasing from 12.61 (SD = 2.07) to 8.89 (SD = 1.84), representing a reduction of 3.72 points, and suicidal ideation decreasing from 2.06 (SD = 0.73) to 1.28 (SD = 0.51), representing a reduction of 0.78 points. This indicates that MHLE had a moderate effect on both sleep disturbance and suicidal ideation.

Table 2. MHLE Group.

N	Pre-Test Mean	SD	Post-Test Mean	SD	Mean Difference
18	12.61	2.07	8.89	1.84	3.72 (Sleep Disturbance)
18	2.06	0.73	1.28	0.51	0.78 (Suicidal Ideation)

Research Question Three (All Groups Comparison)

Table 3 shows that MBCT produced the greatest reduction in sleep disturbance, followed by MHLE, while the control group showed minimal change. Similarly, Table 4 shows that MBCT produced the greatest reduction in suicidal ideation, followed by MHLE, while the control group remained largely unchanged. This indicates that both interventions were effective, with MBCT demonstrating superior outcomes across both variables.

Table 3. Sleep Disturbance (PSQI).

Group	N	Pre-Test Mean	SD	Post-Test Mean	SD	Mean Difference
MBCT	18	12.83	1.94	6.11	1.72	6.72
MHLE	18	12.61	2.07	8.89	1.84	3.72
Control	18	12.78	1.88	12.44	1.91	0.34

Table 4. Suicidal Ideation (PHQ-9 Item 9).

Group	N	Pre-Test Mean	SD	Post-Test Mean	SD	Mean Difference
MBCT	18	2.11	0.68	0.72	0.46	1.39
MHLE	18	2.06	0.73	1.28	0.51	0.78
Control	18	2.09	0.71	2.06	0.69	0.03

Hypothesis Testing

Hypothesis One

ANCOVA revealed a significant effect of MBCT on sleep disturbance and suicidal ideation after controlling for pre-test scores, $F(1, 34) = 99.24$, $p < .001$ for sleep disturbance and $F(1, 34) = 73.22$, $p < .001$ for suicidal ideation. Therefore, H_{01} was rejected. MBCT significantly reduced both sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja.

Hypothesis Two

ANCOVA showed that MHLE significantly reduced sleep disturbance and suicidal ideation compared to the control group, $F(1, 34) = 60.82$, $p < .001$ for sleep disturbance and $F(1, 34) = 47.28$, $p < .001$ for suicidal ideation. Thus, H_{02} was rejected.

Hypothesis Three

A significant difference was found between MBCT and MHLE groups, $F(1, 34) = 31.42$, $p < .001$ for sleep disturbance and $F(1, 34) = 23.39$, $p < .001$ for suicidal ideation. Hence, H_{03} was rejected, with MBCT demonstrating significantly greater effectiveness across both outcomes.

Discussion of Findings

This study examined the effects of Mindfulness-Based Cognitive Therapy (MBCT) and Mental Health Literacy Education (MHLE) on sleep disturbance and suicidal ideation among senior secondary school students in the Federal Capital Territory, Abuja, Nigeria. The findings showed that both interventions were effective, with MBCT producing stronger improvements across both outcome variables.

Addressing Research Question One and Hypothesis One, students who received MBCT recorded significant reductions in sleep disturbance (12.83 to 6.11) and suicidal ideation (2.11 to 0.72), which were statistically significant, $F(1,34) = 99.24$, $p < .001$ and $F(1,34) = 73.22$, $p < .001$ respectively, leading to the rejection of H_{01}. These findings align with Segal, Williams, and Teasdale (2022), who noted that MBCT reduces maladaptive rumination through structured mindfulness training. In this study, MBCT likely helped students disengage from negative cognitive cycles sustaining insomnia and suicidal ideation.

Addressing Research Question Two and Hypothesis Two, MHLE also produced significant reductions in sleep disturbance (12.61 to 8.89) and suicidal ideation (2.06 to 1.28), with statistical significance confirmed, $F(1,34) = 60.82$, $p < .001$ and $F(1,34) = 47.28$, $p < .001$ respectively, leading to the rejection of H_{02}. These findings support Jorm et al. (2019) and Oduguwa et al. (2017), who reported that mental health literacy improves wellbeing through awareness, reduced stigma, and improved help-seeking behaviour.

Addressing Research Question Three and Hypothesis Three, MBCT was significantly more effective than MHLE in reducing both sleep disturbance, $F(1,34) = 31.42$, $p < .001$, and suicidal ideation, $F(1,34) = 23.39$, $p < .001$, leading to the rejection of H_{03}. This superiority is explained by MBCT's direct targeting of rumination, emotional reactivity, and cognitive hyperarousal, whereas MHLE operates mainly through informational and attitudinal change.

From a contextual perspective, both interventions proved feasible within resource-limited FCT secondary schools, suggesting that structured psychological programmes can be effectively implemented despite shortages of trained mental health personnel.

Conclusion

This study provides evidence that both Mindfulness-Based Cognitive Therapy (MBCT) and Mental Health Literacy Education (MHLE) are effective in reducing sleep disturbance and suicidal ideation among senior secondary school students in FCT Abuja, with MBCT demonstrating comparatively stronger effects. The findings support MBCT as a viable structured intervention for school-based mental health support in low-resource educational settings, while MHLE offers a practical universal prevention strategy for early mental health promotion. Based on these findings, the study recommended among others that the FCT Education Secretariat integrate brief MBCT programmes into secondary school counselling systems through targeted training of school counsellors. MHLE should be embedded within the school curriculum as a universal mental health literacy and prevention programme. Future studies should adopt larger multi-state samples, include follow-up assessments to determine long-term effectiveness, and examine fidelity monitoring systems to support scale-up. Key limitations of this study include the small sample size, single-region design, reliance on one facilitator, and absence of follow-up data, which should be addressed in subsequent research.

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