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Association Between Depression and Self-Reported Academic Outcomes Among Secondary School Students in Kenya

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Peter Maina Kisa, Kennedy Bota & Joel Ogutu
Masinde Muliro University of Science and Technology, Kenya

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Abstract
Depression negatively impacts students' academic outcomes globally; however, empirical evidence in Kenya remains limited. Nakuru North Sub-County continues to experience low academic achievement despite Kenya mental health policies (Ministry of Health, 2015). This study investigated the influence of depression on academic outcomes among students in public secondary schools in Nakuru North Sub-County, Kenya. This study used a convergent parallel mixed-methods design involving 307 students sampled, 13 class teachers, and 13 school counsellors from 13 public secondary schools. We collected quantitative data through questionnaires and analysed them using descriptive and inferential statistics, including linear regression, ANOVA, and regression analysis. We analysed qualitative data from semi-structured interviews using thematic analysis. The study found a strong negative correlation between depression and academic outcomes ($R = -0.756$, $p < .001$). Regression analysis showed depression significantly predicted academic outcomes ($B = -.76$, $t = -20.17$, $p < .001$), explaining 57.1% of the variance in self-reported academic outcomes. Qualitative findings supported these results, with teachers and counsellors reporting reduced motivation, social isolation, irritability, and academic hopelessness. Depressive symptoms were significantly and negatively associated with self-reported academic outcomes among the secondary school students sampled. The findings suggest that school-based mental health support merits strengthening, although policy implementation was not evaluated in this study.

Introduction

Depression is increasingly recognised as a critical issue in education globally due to its substantial impact on students' academic outcomes and well-being (Yan et al., 2024). It is a mood disorder characterised by persistent sadness or loss of interest, low energy, difficulty concentrating, hopelessness and withdrawal, which can impair daily functioning and academic performance (Gichohi, 2019; Bitew, 2020). Investigating depression among secondary school students is essential because it shapes psychological well-being and influences academic outcomes and future work performance (Global Burden of Diseases [GBD]. 2025). Additionally, depression reduces motivation and memory retention, directly compromising mental function and leading to diminished academic achievement (Ibienne, 2018).

Secondary school students, predominantly adolescents, are in a developmental stage characterised by psychological, cognitive, and physiological changes that influence psychological well-being and social interactions, potentially leading to depression (Misigo, 2021).

According to the World Health Organisation (WHO, 2025), the prevalence of depression among students is directly related to the risks encountered during adolescence. This finding is consistent with Yan et al. (2024), who reported a high prevalence of depression among rural students in China, which adversely affects mental health and academic outcomes.

Internationally, depression has been consistently associated with academic difficulties. For instance, Fernández-Castillo (2021) reported that Spanish students with depression exhibited increased absenteeism and higher dropout rates. Similarly, research from China demonstrates that depression impairs memory processes essential for academic achievement (Jorge et al., 2025). In the United States, Bitsko et al. (2017) found that approximately 20% of adolescents are affected by depression. A cross-cultural study in Switzerland by Sommet and Montastruc (2024) indicated that academic pressure intensifies competition and fosters doubt, stress, and depression regarding learning abilities, ultimately harming students' academic outcomes. Collectively, these findings suggest a cross-cultural consistency in the negative association between depression and academic outcomes.

In Nigeria, Osagiede (2018) reported that 9.5% of adolescents are affected by depression, attributing this prevalence to limited government investment in school-based depression mitigation. Similarly, Shochet and Ham (2004) are cited as reporting that 20% of secondary school students in South Africa experience depression, which the authors attribute to poverty, which increases the risk of mental illness and manifests as behavioural, emotional, and social difficulties, including self-harm, suicidal behaviours, and reduced quality of life. These challenges can also lead to poor academic outcomes.

In Nakuru West, Kenya, depression is linked to hopelessness, isolation, fatigue, and suicidal ideation, which can hinder a student's ability to engage positively in learning, concentrate in class, and perform well academically (Waweru et al., 2025).

Research shows the prevalence of depression among secondary school students in Kenya ranges from 10% to 50.5% (Musau, 2023), adversely affecting attendance, discipline, and academic outcomes (Nyongesa et al., 2021). The HIV and COVID-19 pandemics have worsened depression-related challenges in Kenya, especially in Nakuru North, increasing psychological illness (UNICEF, 2021). Students in Nakuru North may also be exposed to ethnic tensions, insecurity, poverty and academic pressure, which may undermine psychological well-being (Forman et al., 2007). High-stakes end-of-year exams are linked to depression marked by low motivation and hopelessness, which reduce concentration and harm academic outcomes (Gichohi, 2019).

Kenya, like other sub-Saharan countries, faces legislative challenges that hinder the effective implementation of policies to address depression, widening the mitigation gap and sustaining negative academic outcomes (Clay et al., 2020).

Despite the documented prevalence of depression among Kenyan secondary school students, empirical evidence on its influence on academic outcomes in Nakuru North Sub-County remains scarce. This study seeks to address this gap by providing localised evidence to inform targeted interventions.

The Government of Kenya established education sector policies, such as the National School Health Policy (2018), the Kenya School Health Policy (2nd ed.) (2015), and the Basic Education Act (2013), to address learning issues and improve academic outcomes. However, academic performance in the K.C.S.E national Form 4 KCSE exam in Nakuru North Sub-County remains

low, with 57% of candidates scoring D+ and below, compared to 54% in Nakuru County (Kenya National Examinations Council [KNEC], 2024).

These low KCSE results have caused concern among education stakeholders in the Sub-County. Nakuru North also faces issues like ethnicity, crime, poverty, and academic pressure, which affect students' psychological well-being and can cause depression. Ethnicity-related challenges, including perceived discrimination and cultural isolation, are linked to increased depressive symptoms among Kenyan students (Osborn er al., 2024; Osborn et al., 2020). Similarly, poverty-related stressors increase vulnerability to depression (Marangu et al., 2021), lowering motivation, increasing fatigue, and reducing memory retention, which directly compromise mental function and lead to declining academic outcomes. Studies in Nakuru County show that 25% to 40% of secondary school students suffer psychological challenges like depression (Ministry of Education & Ministry of Health, 2018).

To the authors' knowledge, no study has quantitatively examined the relationship between depression and academic outcomes in Nakuru North Sub-County using a mixed-methods approach that includes both student perspectives and educator observations. Consequently, local evidence to guide targeted interventions remains limited. This study investigates how depression affects academic outcomes among students in public secondary schools in Nakuru North Sub-County.

Research Hypothesis

H_{01}: There is no statistically significant relationship between depression and academic outcomes among secondary school students in Nakuru North Sub-County.

Theoretical Framework

This study is grounded in Bandura's Social Cognitive Theory and Bronfenbrenner's ecological systems theory, both of which elucidate how personal and environmental factors influence depression and academic outcomes.

Bronfenbrenner's ecological systems theory

Bronfenbrenner's ecological systems theory conceptualises development within five interconnected environmental levels. The microsystem (immediate family, peer, and classroom interactions) directly shapes students' psychological well-being and may influence depression. The mesosystem covers interactions between microsystem elements, such as family-school connections. The exosystem includes broader influences like parental employment, the macrosystem encompasses cultural values and socio-economic conditions and finally chronosystem representing dimension of time and socio-historical context that influences human development across a person's lifespan (Bronfenbrenner, 1979; Rahman, 2025)). This framework is relevant to Nakuru North Sub-County, where ethnic tensions, poverty, and academic pressure at multiple ecological levels may contribute to student depression and affect academic outcomes (Mutai & Maina, 2026).

Bandura's Social Cognitive Theory

Albert Bandura developed Social Cognitive Theory (SCT), which integrates the interplay among personal internal factors, behavioural factors, and environmental influences on human learning and behaviour (Bandura, 1986). In this study, SCT helps explain how depression, behaviour, and academic outcomes influence one another.

The theory holds that a student's behaviour, including learning outcomes, is shaped by personal factors (internal psychological factors like depression), environmental factors such as school and peer interactions, and behaviour itself, all interacting reciprocally to determine academic outcomes (Bandura, 1997). It encompasses observational learning and self-efficacy. In Nakuru North Sub-County, factors like ethnicity, crime, poverty, and academic pressure may contribute to

depression, which affects students' self-efficacy, psychological well-being and academic outcomes. By integrating these two theories, this study offers a more comprehensive analysis of depression's influence on academic outcomes among students in public secondary schools in Nakuru North Sub-County, Nakuru County, Kenya.

Integrating the two theories is warranted because Bandura's Social Cognitive Theory explains how depressive cognitions influence learning behaviours, while Bronfenbrenner's theory situates these processes within multiple environmental systems relevant to Nakuru North students. Together, these frameworks enable an examination of how depression and academic outcomes are shaped by both individual psychological processes and contextual factors specific to the study area.

Conceptual Framework

The conceptual framework examines depression as a factor influencing academic outcomes among secondary school students in Nakuru North Sub-County, Kenya. The study's dependent variable was academic outcomes. It was measured using students' self-reported behavioural experiences in learning that influence those outcomes like consistent performance, academic confidence, and timely completion of schoolwork. Depression, the independent variable, is assessed through indicators such as low motivation, irritability, isolation, and hopelessness. Peer support, school type, and family background serve as confounding variables. These confounding variables were controlled through Research Design Controls. A Matched-Pair Design was applied by pairing each male student with a female student, thus ensuring perfect balance. Homogeneous Sampling was used as a control method by sampling students from public schools only. The conceptual framework is as illustrated in Figure 1.

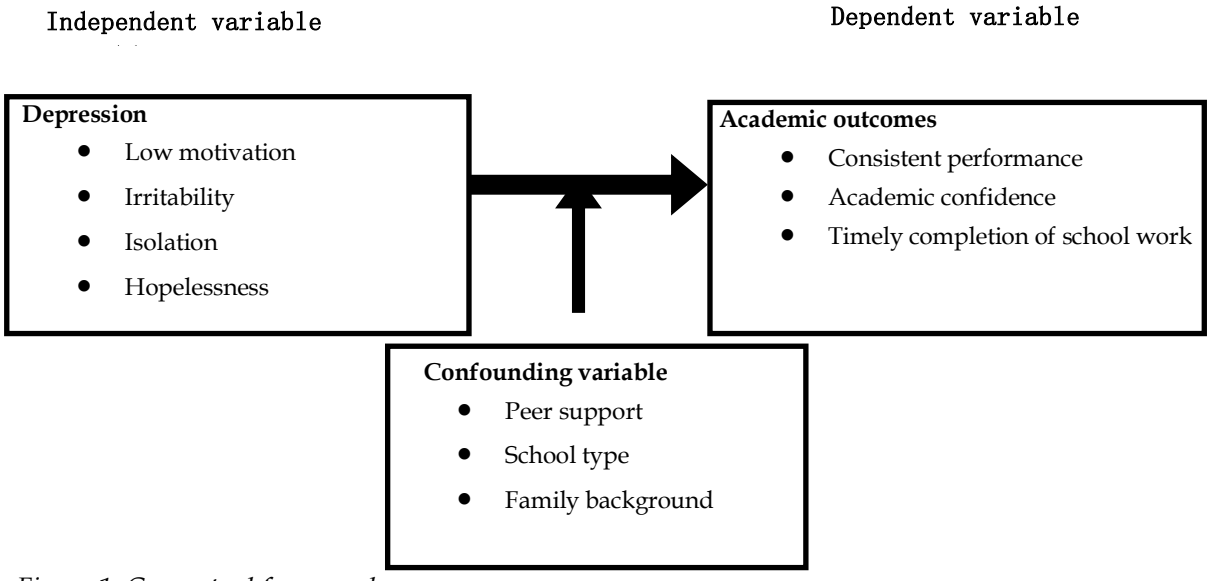


Figure 1: Conceptual framework

Research Methodology

This section outlines the study design and methodology, detailing the research paradigm, study area, target population, sampling procedures, instruments, data collection, data analysis, and ethical considerations.

The study adopted a pragmatic paradigm prioritising practical solutions and real-world outcomes. This paradigm supports mixed-methods research and facilitated integrating quantitative and qualitative approaches to examine depression's influence on academic outcomes (Creswell, 2017).

This study used a convergent parallel mixed-methods approach, combining quantitative and qualitative data. Specifically, according to Creswell (2017), this design allows simultaneous collection and concurrent analysis of quantitative and qualitative data, enabling direct comparison of results. This approach facilitated analysis of student questionnaires alongside teacher and counsellor interviews.

The study area was Nakuru North Sub-County, in northern Nakuru County, Rift Valley Region. It covers 374.3 square kilometres. The area has low KCSE Form 4 results and limited local evidence on how depression influences academic outcomes in its 82 secondary schools.

The study's target population was 28,084, comprising 27,920 students, 82 Form Three class teachers, and 82 school counsellors (Professional counsellor or a teacher appointed by the principal to be in charge of counselling in the school), across 82 public secondary schools in Nakuru North Sub-County, Nakuru County.

The study used stratified random sampling, categorising schools into four strata: National, Extra-County, County, and Sub-County, based on official classification. Schools were randomly selected from each stratum in proportion to their size. From each sampled school, we purposively selected one class teacher and one counsellor based on experience and their role in student welfare. We randomly selected Form Three students using simple random sampling, with 30 students per school. We determined the sample size using Slovin's formula (primary source for Slovin's formula to be cited) to obtain a representative sample from the finite student population of 27,920 students in Nakuru North Sub-County. This yielded a sample of 13 schools and 390 students and not 394 so as to have equal number of sampled students (30) per sampled school, as shown in Table 1.

Table 1: Sampling Frame

Students	**27,920**	**390**	**1.40**
Class Teachers	82	13	15.85
School Counsellors	82	13	15.85
Total	28,084	416	1.48

The study used two instruments: student questionnaires and interview schedules for Form Three class teachers and counsellors. The questionnaire was adapted from a validated instrument measuring depression, which is the Beck Depression Inventory-II (BDI-II), and academic outcomes by self-reported Student Readiness Inventory (SRI) was. Content validity was established through expert review by three educational psychologists. Cronbach's alpha coefficients assessed internal consistency: depression scale $\alpha = .82$, academic outcomes scale $\alpha = .79$. Pilot-testing with 30 students from a non-participating school led to minor revisions for clarity.

Student respondents indicated their agreement on a five-point Likert scale, from SD (Strongly Disagree, score 1) to SA (Strongly Agree, score 5).

We analysed quantitative data using SPSS Version 26. Descriptive statistics (means, standard deviations) summarised depression and academic outcome variables. Inferential statistics included linear regression, ANOVA and regression analysis to assess depression's predictive power for academic outcomes.

Braun and Clarke's (2006) thematic analysis framework were used to analyse qualitative data. Triangulating was done by comparing the combined narrative-and-numerical finding against prior studies showing how the qualitative evidence strengthens or challenges the quantitative data. The researcher repeated reading transcripts three times to familiarise themselves, inductive coding was used to generated initial codes, and identified, reviewed, and defined themes. Two senior most assistant researchers coded independently to enhance reliability and resolved

disagreements through discussion. This promoted trustworthiness by the 4 established criteria: credibility, dependability, confirmability, and transferability.

Ethical considerations

The researcher obtained necessary authorisation and permission from various departments before collecting data. First, the researcher obtained an introductory letter from the Directorate of Post-Graduate Studies and the MMUST Institutional and Ethics Review Committee (IERC). The researcher also obtained a letter of authorisation from the National Commission for Science, Technology and Innovation (NACOSTI) (Licence number – NACOSTI/P/25/4179934. The Ministry of Education, Science and Technology of Nakuru North Sub-County then granted permission. The researcher scheduled appointments with sampled schools and principals, who set the days for administering questionnaires.

Participants were assured anonymity and confidentiality. The research team stored data securely, accessible only to the research team. Participants were informed of their right to withdraw at any time without penalty. The researcher obtained permission from school principals and parents/guardians for student participation.

The researcher avoided inappropriate words when administering the questionnaire and clarifying respondents' issues, creating a warm, friendly environment. The study was voluntary; respondents gave consent before participating, and no one was penalised for declining. Sampled Form Three class teachers helped organise students and arrange the venue, ensuring the room was well lit, ventilated, and clean. These steps reduced risk and protected participants from physical, mental, or social discomfort.

Findings and Discussions

This section presents the findings and discusses both descriptive statistics and inferential analyses.

Of the 390 questionnaires distributed, 307 were returned and fully completed, for a response rate of 78.7%. The 21.7% of the questionnaires were completed wrongly by respondents despite clarification by research assistants. Some wrote their response in sentence form instead of putting a tick, others made more than one tick while others only responded to 2 out of the 4 items.

Descriptive Statistics on Depression

Table 2 presents the mean scores of student responses on a five-point Likert scale, derived from descriptive statistics on depression and academic outcomes among secondary school students.

Table 2: Descriptive Statistics on Depression and Academic Outcomes

No.	Statements	Total	Mean	Std deviation
1.	I find it difficult to start working on my school assignments even when I know they are important.	307 100%	3.25	1.480
2.	I prefer to sit alone during group work or classroom activities rather than collaborating with my peers.	307 100%	3.49	1.399
3.	I lose my patience quickly with classmates during class lessons, group projects or discussions.	307 100%	3.38	1.506
4.	I see no point in trying to do well in school because I feel my future is bleak.	307 100%	3.14	1.426
	Average		3.315	1.45

Respondents were asked whether they find it difficult to start working on their school assignments even when they know they are important. The mean score of 3.25 (on a 5-point scale) indicates moderate agreement that they find it difficult to start working on their school assignments even when they know they are important. This finding is consistent with the possibility that depressive symptoms like lack of motivation disrupt students' cognitive engagement, which is critical for academic success (Bandura, 1986). The standard deviation of 1.480 indicates considerable variability in responses, suggesting that motivation challenges affect some students more severely than others. Bandura's Social Cognitive Theory provides a framework for interpreting these findings, highlighting how personal factors, behaviour, and environmental influences interact in learning.

Respondents were asked whether they prefer to sit alone during group work or classroom activities rather than collaborating with their peers. The results, as shown in Table 2, revealed a mean of 3.49, indicating agreement and suggesting that many students prefer to sit alone during group work or classroom activities rather than collaborating with their peers due to depressive symptom like isolation which is associated with reduced social and co-curricular engagement. This is consistent with Bandura's Social Cognitive Theory, which emphasises the interaction between personal factors, behaviour, and environmental influences. Depression may diminish students' belief in their ability to engage, resulting in avoidance behaviours and social isolation.

The study examined whether respondents usually lose their patience quickly with classmates during class lessons, group projects or discussions. The mean score of 3.38, indicating agreement, suggests that many students respondents usually lose their patience quickly with classmates during class lessons, group projects or discussions. This underscores the impact of depression on students' social interactions and sense of connectedness within the school environment. Magai and Koot (2018) similarly found that depressive symptoms are associated with impaired interpersonal functioning in adolescents, particularly in school contexts. Counsellor interviews further corroborated this finding, particularly regarding the influence of peer relationships on students' emotional well-being and ability to manage depressive symptoms. Counsellor A noted:

> Students who usually lose their patience quickly with classmates during class lessons, group projects or discussions, form poor peer relationships because of their irritable nature. Such students lack supportive friends and find it hard to cope with academic work. Positive peer anger management foster interactions, belonging and can buffer negative feelings.

The study sought to determine whether students often see no point in trying to do well in school because of feeling their future is bleak. The mean of 3.14, as shown in Table 2, shows that many students agreed, that they often see no point in trying to do well in school because of feeling their future is bleak. Possible explanations such as limited counselling services or insufficient teacher training were not measured and should be presented as hypotheses for future research. Such academic hopelessness can contribute to declining academic outcomes, increased absenteeism, and long-term psychological challenges.

This finding is corroborated by counsellor interviews, where counsellors described students who often feel academic hopelessness in class, particularly as their academic outcomes begin to decline. Counsellor B stated that:

> Students showing signs of depression, often see no point in trying to do well in school because of feeling their future is bleak. They usually lack concentration, struggle to complete assignments and understand concepts. However, the effectiveness depends on early identification and student willingness to seek help. Once we intervene, many students show gradual improvement in concentration and participation.

This finding aligns with Bandura's Social Cognitive Theory, which emphasises the reciprocal influence of social environments on personal psychological states.

Academic Outcomes among Secondary School Students

Respondents answered questions designed to assess academic outcomes among secondary school students by measuring learning through behavioural indicators.

Descriptive Statistics on Academic Outcomes

Student respondents completed four items on a five-point Likert scale to assess academic outcomes. Table 3 summarises these results.

Table 3: Descriptive Statistics on Academic Outcomes

No.	Statements	Total	Mean	Std deviation
1.	I consistently perform well in my school subjects	307 100%	2.61	1.441
2.	I set academic goals for myself and work hard to achieve them	307 100%	2.60	1.437
3.	I feel confident in my ability to succeed academically	307 100%	2.77	1.513
4.	My grades reflect the effort I put into my studies.	307 100%	2.54	1.464
	Average		2.63	1.46

Table 3 shows an overall mean of 2.63 across the four items, indicating that respondents generally disagreed with the statements on academic outcomes. This indicates low self-rated academic outcomes in the sample; the data do not identify the factors responsible. Such barriers resulting into low self-rating, may arise from social, environmental, and emotional challenges, including depression, which interfere with learning and concentration. Students may lack confidence in their academic abilities or experience low motivation due to depression, poor time management, or insufficient support at home and in school. Musau (2023) posits that students experiencing depression often struggle to maintain consistent academic outcomes due to low motivation, limited access to support systems, and feelings of hopelessness in class.

This finding is supported by class teacher interviews. Class teacher A, Form Three, stated:

> Most students don't show consistent performance, appear less motivated, are less attentive, are isolated, and are less engaged in both classroom and homework activities. They often get irritated easily and show a low grasp of the subject content. Their academic outcomes may reflect some form of mental disturbance and interference in their commitment to their studies. I monitor this through observation, class participation and continuous assessment.

Test of Hypothesis

The null hypothesis posited that depression has no significant influence on academic outcomes among secondary school students in Nakuru North Sub-County, Kenya. To test this hypothesis, we conducted a simple linear regression analysis, with depression as the independent variable and academic outcomes as the dependent variable. The hypothesis was tested using the quantitative data from the student questionnaires only. Table 4 presents the results.

Table 4: Simple Linear Regression Analysis on depression and Academic Outcomes

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-.756[a]	.571	.565	.243

The results in Table 4 revealed an R value of R = −.756, p < .001, indicating a strong negative relationship between depression and academic outcomes. The R^2 value of .571 demonstrates that depression accounts for 57.1% of the variance in academic outcomes.

The ANOVA (Analysis of Variance) test assessed depression's influence on academic outcomes among secondary school students in Nakuru North Sub-County. ANOVA was used to determine whether group means differ significantly and whether the independent variable, depression, has a significant effect on the dependent variable, academic outcomes. The model's significance is determined by comparing the calculated F value with the critical F value from the statistical table and by examining the p-value. Table 4.8 shows the results.

Table 5: ANOVA test for depression and academic outcomes

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.327	1	19.327	30.01	.000[b]
	Residual	197.052	306	0.644		
	Total	216.379	307			

Source: Field Data, 2025

The results indicated an F value of 30.01, well above the critical F value of 3.86, and a p-value of 0.000, well below the 0.05 level of significance. This small p < 0.001 shows strong statistical evidence against the null hypothesis. The large F value of 30.01 shows very strong evidence of depression influencing academic outcomes. This confirms that the regression model is statistically significant, meaning depression has a substantial influence on students' academic outcomes. The findings imply that variations in levels of depression meaningfully contribute to differences in students' academic outcomes.

The regression coefficients were examined to determine the magnitude and direction of depression's influence on academic outcomes, as shown in Table 5.

Table 6: Regression Coefficient of depression and Academic Outcome

Model	Unstandardised Coefficients		T	Sig.
	B	Std. Error		
(Constant)	0.423	0.127	3.319	.000
Depression	-.76	0.029	-20.17	.000

The linear regression model is presented as follows:

Academic outcomes = 0.423 − 0.76 × Depression. Table 5 indicates that depression had a regression coefficient of B = −.76, t = −20.17, p < .001. The p-value was less than 0.05, indicating statistical significance. The t statistic exceeded the critical value in magnitude, confirming a significant negative relationship. Consequently, we rejected the null hypothesis that there is no statistically significant relationship between depression and academic outcomes. These findings are supported by Musau (2023), who found that depression among secondary school students is strongly associated with diminished academic motivation, reduced class participation, and increased absenteeism. The regression coefficient (B = -.76) indicates that each one-unit increase in the depression score is associated with a 0.76-unit lower academic outcome score.

The study findings are consistent with the two theoretical frameworks employed, although the design does not test them. Bronfenbrenner's (1979) Ecological Systems Theory describes four primary environmental levels in which individuals grow, interact, and develop. Student interactions at these levels influence both depression and academic outcomes. Bandura's Social Cognitive Theory posits that students' academic outcomes are shaped by internal psychological factors, such as depression, and environmental factors, including family and classroom interactions. The study did not test whether integrating the two theories explains more than either theory alone.

Conclusion

This study found that depressive symptoms were significantly and negatively associated with self-reported academic outcomes among secondary school students in Nakuru North Sub-County. The strong correlation are consistent with an association between depressive symptoms, including low motivation, social isolation, irritability and academic hopelessness, and lower self-reported academic outcomes.

The findings are consistent with Bronfenbrenner's Ecological Systems Theory and Bandura's Social Cognitive Theory, but neither was tested. Interview accounts point to possible roles for peer relationships, stigma and limited resources; family dynamics and socio-cultural pressures were not measured. These results suggest that interventions should address both individual psychological processes and the broader environmental systems influencing students.

This study acknowledges several limitations. First, the cross-sectional design precludes causal inferences, and longitudinal studies are needed to establish causal pathways. Second, self-report measures may be subject to social desirability bias. Third, the focus on a single sub-county limits generalizability. Fourth, researchers measured academic outcomes through student self-report rather than objective achievement data. Further limitations are the unadjusted analysis (no control for sex, age, socio-economic status, school type or peer support), the clustering of students within schools, the 21.3% non-response, the use of non-clinical, consequence-based depression items, shared-method variance, and the possibility of reverse causation (low achievement may increase depressive symptoms).

The findings suggest a need to strengthen mental health support in Kenyan secondary schools. Although this study did not assess policy implementation, they are consistent with calls to strengthen school mental health support, for example by enhancing counsellor training and deployment, integrating mental health education into the curriculum, establishing school-based mental health referral systems, and increasing parental involvement in student mental health.

Future research should employ longitudinal designs to examine causal relationships, incorporate objective measures of academic performance, and assess the effectiveness of interventions aimed at reducing depression and improving academic outcomes in this context.

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