

Relationship between Academic Stress and Mental Health: Moderating Influence of Emotional Regulation and Perceived Social Support

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Abstract

This study examined the moderating influence of emotional regulation and perceived social support in the relationship between academic stress and mental health among undergraduate students using cross-sectional data from two hundred and four (204) students. Their ages ranged between 18-25 (Mean = 21.56; SD = 2.32). The results of the moderated regression analysis using PROCESS Macro revealed a significant negative correlation between academic stress and mental health. Emotional regulation was also found to be a significant moderator between academic stress and mental health, and there was no statistically significant moderation influence of perceived social support in the relationship between academic stress and mental health among undergraduates. The study implied that academic stress negatively affects mental health, but this relationship can be significantly weakened if students have strong emotional regulation skills. This points to the importance of holistic student development, combining personal coping strategies with supportive environments.

Keywords: academic stress, mental health, emotional regulation, perceived social support

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Introduction

Academic stress coupled with low social support from family, friends, and others could have a negative impact on the health of students which often results in poor academic performance. Several studies (e.g., Agyapong-Opoku et al., 2026; Barbayannis et al., 2022; Córdova Olivera et al., 2023) have linked academic stress with mental well-being of students, but research that explored whether emotional regulation and social support moderate this relationship has not been sufficiently examined. Stressful events mostly arise when an individual appraises a situation as threatening or challenging and does not have the appropriate coping skills to deal with it. It is essential for educational institutions to develop strategies to reduce stress levels and support students in managing academic pressures to safeguard their psychological well-being. Researchers have identified protective variables that may shield students from the negative psychological effects of study-related stress. But most research has focused on identifying the psychological symptoms of academic stress, rather than looking at strategies to protect students from these demands. Mental health was identified as a dynamic condition of effective teamwork that enables people to use their skills in line with the society's widespread norms (Fatima et al., 2024). Cavioni et al. (2020) claimed that mental health is a way of thinking, feeling, and acting in the person's everyday life. The people with healthy relationships recognize their abilities, are ready to tolerate defeat, able to regulate respect and appreciate their sentiments.

Stress is one of the most important factors in psychological research since it has an impact on the well-being and health of individuals, the psychological well-being of students is significantly harmed by academic stress, which is caused by work, high performance, tests, and challenging assignments. Therefore, it is essential to fully understand the complex relationship between academic stress and psychological well-being in order to develop effective treatments. Academic stress refers to the stress experienced by individuals in educational settings due to numerous variables. It is a mental distress associated with any anticipated dissatisfaction correlated with student failure, or even awareness of possibility of such a failure (Busari, 2014). Pascoe et al. (2022) defined academic stress as a requirement linked to academics that taxes or exceeds existing resources (explicit or implicit). Academic stress can be a burden that mostly happens during an academic performance due to a person's extra work relative to his/her capacities or abilities. According to earlier research, academic stress arises from the inability to cope with academic related tasks, leading to negative impacts such as smoking behaviour, mental health issues, poor sleep quality, depression, insomnia, substance addiction, self-harm, and suicidal ideation. Also, other factors contributing to academic stress include self-inflicted stress, parental expectations, academic queries, lack of time for revision, low parental education levels, and poor exam grades. Therefore, understanding academic stress is crucial for implementing interventions at various levels to mitigate its negative effects on students' well-being and academic performance.

Academic stress is the product of a combination of academic-related demands that exceed the adaptive resources available to an individual. Researchers agree that students face common academic stressors, such as family-pressures, scholarship demands, financial burdens, competition in class, examination, time-management and course-related stress. The main causes of academic stress are academic results, admissions, student transfer, exams, load of extra classes, social comparison, exams stress, expectations from teachers and parents. Academic stress has been shown to have a negative impact on students' mental health, researchers indicate that high levels of academic stress are correlated with an increased probability of experiencing mental health issues, such as weakening mental health and feelings of anxiety and depression. Studies have highlighted the importance of addressing academic stress to enhance students' overall mental well-being, as stress from academic

pressures, family circumstances, and other sources can significantly impact mental health. Furthermore, interventions like wellness training have shown promise in improving mental wellness and reducing the negative impact of academic stress on students' mental health. Higher stress levels, particularly related to academic tasks and concerns like grades, exams, and competition with peers, are predominant among younger students. These psychological consequences highlight the importance of addressing and managing academic stress effectively to safeguard students' mental health and well-being. Academic stress significantly impacts the psychological well-being of students in both public and private institutions.

Additionally, coping strategies like emotional regulation and perceived social support can play crucial roles in mitigating the effects of academic stress on psychological well-being. The capacity to control or adjust emotional expressions to promote performance, growth and or self-improvement is known as regulating emotion (ER) (Ononye et al., 2022). Students with a high level of emotional intelligence (EI) may be able to regulate their emotions, which implies that they may be able to make wise judgments and, consequently, be motivated to behave appropriately because of a knowledge of the situation (Di Lorenzo et al., 2019). The importance of coping with stress in university students based on flexible strategies that harmonize with beliefs of self-perceived competence. Inadequate stress management can trigger other effects on neolithic behaviors. Stress when it is especially chronic and severe is related to suicide risk by the prevalence of disorders such as anxiety and depression (Agyapong-Opoku et al., 2026). The estimate that someone dies by suicide roughly every 40 seconds is still widely used in advocacy and by the WHO to emphasize the scale of the issue (World Health Organization, 2025). Based on this, it must be taken into account that there is a greater predisposition to carry out these risk behaviors in people who do not have adequate strategies that allow them to face the situations and manage the emotional overflow that the stressful event can cause them. In such disabilities the importance of emotional regulation stands out.

The academic context is usually associated with multiple activities and demands of the training period; however, in various circumstances the excessive number of jobs and the limited time to carry them out, the concern for academic performance, peer competition and the sum of tasks outside the university environment generate an overload on the student. In relation to the population considered for this research, students of the last cycles face greater pressure since as they advance in the formation of their professional career, the demands take on a greater complexity and must assume new challenges when carrying out external practices where they show all the knowledge, abilities, skills and attitudes that they have been perfecting throughout their academic preparation to be able to properly exercise their profession. The constant presence of tension that students experience, consequently, triggers a series of manifestations such as: loss of motivation, sense of failure, frustration, guilt and self-distrust, as well as difficulties in presenting effective coping strategies, causing the person to perceive their life as exhausting and uncontrollable. This in complex cases can lead initially to absenteeism and in the long term to academic dropout, interfering with professional success (Estrada, 2021).

Hence the importance of emotional self-regulation conceptualized as the capacity that allows the subject to manage what he feels and efficiently face the demands of the environment; this in turn, is considered a support strategy that facilitates the person to have a better development in his environment and well-being with himself, as well as cope with stressful events that can generate dysfunctional behavior. It is known that, throughout their existence, the person is faced with different requirements of an academic, work, family and social nature; which sometimes and due to the demand, can generate abuse, apathy, irritability and/or loss of interest as a result of physical and mental exhaustion. One

of the most vulnerable populations to suffer from the aforementioned symptoms are university students by virtue of the level of cognitive sophistication and the deployment of socio-emotional skills for emotional regulation. It should be noted that many university students can be placed in the adolescent development stage, which, together with the multiple activities they perform in university settings, can become a risk factor that triggers a significant stress situation. Additionally, Hassan and Masood (2022) reported that emotional regulation is essential for academic performance since they affect one's capacity to influence others, communicate with others, cooperate and function in various academic contexts. Since emotions might extend students' attention and cognition for academic learning (Hassan & Masood, 2022), it makes sense to infer that it would probably lead to attaining the desired results. In these situations, it is essential that people have resources and strategies that enable them to face the demands of day to day. The current study therefore attempts to investigate the moderating roles of emotional regulation and social support in the relationship between academic stress and mental health. To achieve this, we draw on the Job Demands-Resources theory (JD-R; Demerouti et al., 2001). The JD-R theory activates two opposing processes, the health impairment process and the motivating process. It entails that job demands (e.g., academic stress) depletes individual limited resources leaving the individual with insufficient resources resulting in negative attitudes and behaviours. On the other hand, if there is availability of resources such as high emotional regulation and social support, will most likely compensate for the lost resources. Given this situation, such individuals even though they perceive academic stress, but may experience better mental health score when compared with their counterparts with low job resources.

Theoretical background and development of hypotheses

Academic stress and mental health

Academic stress refers to a mental distress associated with any anticipated dissatisfaction correlated with student failure, or even awareness of possibility of such a failure (Busari, 2014). Pascoe et al. (2022) defined academic stress as a requirement linked to academics that taxes or exceeds existing resources (explicit or implicit). The impairment process of the JD-R is suited for explaining that academic stress as a job demand can consume individual resources, leaving the individual with fewer resources to cope and therefore may experience poor mental health. According to earlier research, academic stress arises from the inability to cope with academic related tasks, leading to negative impacts such as smoking behavior, mental health issues, poor sleep quality, depression, insomnia, substance addiction, self-harm, and suicidal ideation. It can also lead to poor mental health. Mental health is seen as a level of real well-being in which people understand their capacity, can cope with ordinary life pressures, can function productively and credibly, or can contribute to society (Salari et al., 2020). Mental health was identified as a dynamic condition of effective teamwork that enables people to use their skills in line with the society's widespread norms (Fatima et al., 2024). However, previous studies (e.g., Barbayannis et al., 2022; Córdova Olivera et al., 2023) revealed a significant correlation between high academic stress and poor mental well-being in all the students who also reported an exacerbation of stress in response to the pandemic. Chen et al. (2024) showed that academic stress had a significant impact on depression in college students. Zhang et al. (2025) reported that stress significantly positively predicted academic burnout among college students and significantly negatively predicted their perceived social support.

Hypothesis 1: Academic stress will relate negatively to mental health.

Emotional regulation as a moderator

Karam et al. (2023) provided evidence that adequate use of emotional regulation skills such as high level of cognitive reappraisal and low level of expressive suppression with presence of social support would remarkably decrease psychological distress. Gross (1998) stated that emotions can be modulated or changed, and this flexibility determines the final emotional response of individuals, and determines what emotions are experienced as well as when and how they are experienced. Emotion regulation consists of the internal and external processes involved in monitoring, evaluating, and modifying emotional reactions (especially their intensity and temporal features, such as speed of onset and recovery) to accomplish one's goals. In another study, Xu et al. (2023) showed that emotional empathy was significantly and positively related to the challenges and dissatisfaction dimensions of higher education-related stress. Emotional intelligence was negatively correlated with the challenges dimension of higher education-related stress and positively correlated with the dissatisfaction dimension. Mitsopoulou et al. (2024) that Late Positive Potential (LPP) amplitude moderated the relationship between attachment anxiety and lack of emotional control: individuals with high LPP responses and higher attachment anxiety showed greater emotion dysregulation. This suggests that heightened neural reactivity may exacerbate the regulatory difficulties associated with attachment-related emotional vulnerabilities. Pop et al. (2025) in a meta-analysis revealed that maladaptive strategies (e.g., suppression, rumination) had strong positive correlations with anger levels, while adaptive strategies (especially cognitive reappraisal and acceptance) were negatively correlated. Krafft et al. (2025) found that cognitive reappraisal significantly moderated the relationship between life stress and resilience. Individuals high in reappraisal reported better emotional outcomes in high-stress contexts. Interestingly, suppression showed no such moderating effects. Durham et al. (2025) showed that limited access to emotion regulation strategies, difficulty engaging in goal-directed behaviour, lack of emotional awareness, lack of emotional clarity, nonacceptance of emotional responses, and use of cognitive reappraisal were associated with trait anxiety.

Hypothesis 2: Emotional regulation will significantly moderate the negative relationship between academic stress and mental health.

Perceived social support as a moderator

Grey et al. (2020) reported that individuals experiencing self-isolation had significantly higher rates of depression, irritability and loneliness compared to those who were not. The risk for elevated levels of depression symptoms was 63% lower in individuals who reported higher levels of social support compared to those with low perceived social support. Similarly, those with high social support had a 52% lower risk of poor sleep quality compared to those with low social support. Social support was found to be significantly associated with elevated risk for depression and poorer sleep quality. High social support has also been found to moderate stress and promoting resilience among university students during the COVID-19 pandemic. Hayati et al. (2025) showed a significant relationship between perceived peer support and mental health scores. The research further revealed that peer support accounted for 25% of the variance in students' mental well-being. McLean et al. (2023) evaluated the impact of gender differences on perceived social support and their association with mental health outcomes among first-year college students and found a significant gender difference in perceived support levels, with female students reporting higher support from friends but lower support from family. Correlation analysis showed a weak negative relationship ($r = -0.43$) between perceived support and mental health issues, consistent across genders. Fronda et al. (2025) showed that social support alleviate stress and improve overall well-being, but insufficient support is linked to poor mental health outcomes.

Hypothesis 3: Perceived social support will significantly moderate the negative relationship between academic stress and mental health.

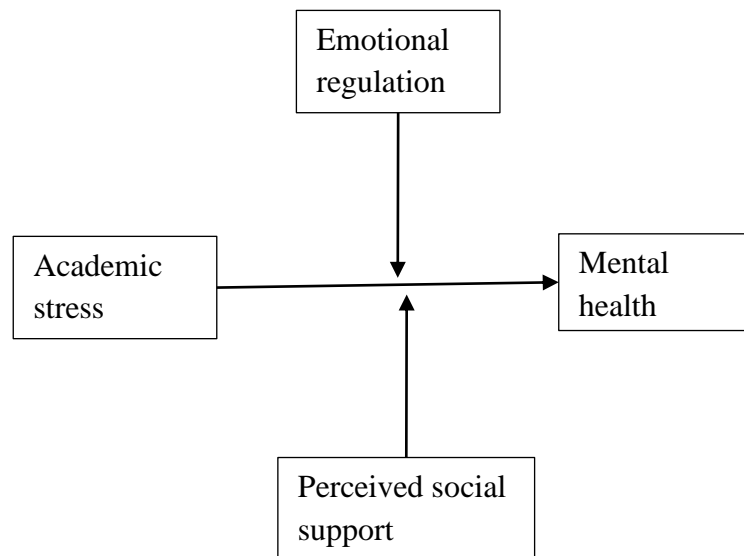


Figure 1. Conceptual model of the moderating influence of emotional regulation and perceived social support on the relationship between academic stress and mental health

Method

Participants and Procedure

The participants of the study consisted of 204 undergraduate students of Nigerian universities. They comprised both genders (95 male and 109 female) aged between 18 to 25 years with the mean age of 21.56 ($SD = 2.32$). The sample was randomly selected from across different faculties of a federal university in Southeast Nigeria. Participation was voluntary and there was no incentive to encourage participation. The copies of the questionnaire were distributed to 250 undergraduate students. Out of the 250 copies of the questionnaire distributed, 233 copies were completed and returned representing 93.2% response rate. During the sorting a total number of 29 e copies were discarded due to improper completion, leaving us with 204 valid copies of the questionnaire that were eventually used for data analysis. Each participant was required to tick a consent form before proceeding to fill the questionnaire. The consent form was on the first page of the questionnaire, briefly explaining the nature of the study. The consent form contained information concerning gender. Anonymity was promised and adhered to, to encourage participation.

Instruments

The instrument consists of three parts, Part A consists of demographic information of the students which include; age, gender, academic level, school and marital status. Part B is made up of measures of other study variables.

Academic stress was measured using the Academic Stress Inventory of Students at Universities and Colleges adapted from Lin and Chen (2009). academic stress measure consists of five (5) academic stress factors, namely; Teacher's stress factor with five (5) items, examination stress factor with five (5) items, studying in groups stress factor with five (5) items, peer stress factor with five (5) items, time management stress factor with five (5) items. The total items consist of 25 questions, and the response was based on five point

Likert scales, ranging from 5 strongly agree, to 1 undecided. This instrument was validated by Ahmed (2018) with a Cronbach's alpha of 0.93.

Mental health was measured using the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS) developed by Stewart-Brown et al. (2009). The WEMWBS is a 7-item measure developed to enable the monitoring of mental well-being in the general population and the evaluation of projects, programs and policies which aim to improve mental well-being. The seven statements are positively worded with five response categories from 'none of the time' to 'all of the time. The SWEMWBS is designed to be completed by individuals either on paper or on a computer. The questionnaire is scored by first summing the scores for each of the seven items, which are scored from 1 to 5. The total raw scores are then transformed into metric scores using the SWEMWBS conversion table. Scores range from 7 to 35 and higher scores indicate higher positive mental well-being. This scale has been validated by Sydney-Agbor et al. (2018) for use in Nigeria with a reliability coefficient of .79.

Emotional regulation was assessed with the Emotion Regulation Questionnaire (ERQ), developed by Gross and John (2003). The ERQ is a 10-item scale designed to measure respondents' tendency to regulate their emotions and to assess individual differences in two ways: (1) Cognitive Reappraisal; measures how often individuals reinterpret a situation to change its emotional impact, 6 items (Items 1, 3, 5, 7, 8, 10) and (2) Expressive Suppression; measures how often individuals suppress the expression of their emotions, 4 items (Items 2, 4, 6, 9). Respondents will be required to rate how often they felt in a certain way each on a 7-point Likert-type scale (1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Neutral / Neither agree nor disagree, 5 = Slightly agree, 6 = Agree, 7 = Strongly agree). Each sub-scale score will range from 1 to 7 and higher scores indicate greater habitual use of that strategy. Scores are interpreted independently for each subscale. This scale was validated by Chukwuorji et al. (2017) for use in Nigeria with a reliability coefficient for Cognitive Reappraisal $\alpha = 0.79$ and Expressive Suppression $\alpha = 0.73$.

Multidimensional Scale of Perceived Social Support (MSPSS), a widely used psychological assessment tool developed by Zimet et al. (1988) was used to assess perceived social support. It is designed to measure an individual's perception of social support from three sources: family, friends and significant others. The MSPSS consists of 12 items, divided equally into three sub-scales: Sample Items "My family really tries to help me" (Family), "I can count on my friends when things go wrong" (Friends), and "There is a special person who is around when I am in need" (Significant other). Each sub-scale has 4 items. Respondents indicate how much they agree with each statement on a 7-point Likert scale (1 = very strongly disagree to 7 = very strongly agree). The questionnaire is first summing the scores for each of the 12 items which are scored from 1 to 7. Scores for each sub-scale and total will fall between 1.00 and 7.00 and higher scores means the person feels a high level of social support overall. This scale has been validated for use in Nigeria by Ekeroma et al. (2012) with a reliability coefficient of .85.

Results

Table 1: Means, Standard Deviations and Correlation Coefficients of the Study Variables

Variable	Mean	SD	1	2	3	4	5	6
Mental Health	24.45	3.75	1					
Age	21.56	2.32	.01	1				
Gender	1.53	.50	-.02	-.28**	1			
Perc. Sos. Support	56.71	14.19	.30**	.03	.01	1		
Academic Stress	77.53	13.67	-.07	-.03	-.05	-.05	1	
Emotional Reg.	39.64	9.67	.14*	.00	.08	.11	-.00	1

Note, ** = p<.01; SD = Standard Deviations

The result in Table 1 showed that age, gender and academic stress did not have significant correlations with mental health. These were at $r = -.01, p > .05$; $r = -.02, p > .05$ and $r = -.07, p > .05$, respectively. However, there was a negative correlation between academic stress and mental health. This was at $r = -.07, p < .05$. Thus, hypothesis one of the study was accepted. By this implication, this means that academic stressed students may not drift completely to decreased mental health, given the fact that they wield stronger emotional regulation and as well perceive high social support from significant others. This made us test this model in our hypotheses two and three as presented in our Table 2 (Models 1 and 2).

Table 2.

*Moderated regression analyses for the interactions of: **Model 1:** Emotional regulation in academic stress and mental health and **Model 2:** Perceived social support in academic stress and mental health*

Predictors	R ²	Df1(Df2)	F	Effect	SE	T	LLCI	ULCI
Model 1	.05	5(198)	2.3*					
Age				-.00	.11	-.07	-.23	.22
Gender				-.38	.54	-.71	-1.46	.68
Acad. Stress (A)				-.02	.01	-1.3	-.06	.01
Emo. Reg. (B)				.06*	.02	2.31	.00	.11
A x B				-.00**	.00	-2.33	-.00	-.00
Model 2	.10	5(198)	4.45**					
Age				-.00	.11	-.06	-.23	.21
Gender				-.30	.53	-.57	-1.35	.74
Acad. Stress (A)				-.01	.01	-.95	-.05	.01
Perc. SoS (B)				.08*	.01	4.5	.04	.11
A x B				-.30	.53	-.57	-1.35	.74

Note, ** = p<.01, * = p<.05; these represents the significant values of the test; R² = R square

The result of the moderated regression analysis, using Process Macro showed that in model 1, age and gender were included as covariates to control for the extraneous factors and the adjusted R^2 for the model was .05. This was statistically significant at $F(5,198) = 2.30, p < .05$. Furthermore, emotional regulation predicted mental health at $\beta = .06; t = 2.31, p < .05$. This indicated that strong emotional regulation prompted increased mental health. Again, there was an observed significant interaction effect of emotional regulation in the relationship between academic stress and mental health. This was at $\beta = -.00; t = -2.33, p < .05$ level of significance. Hence, hypothesis two of the study was accepted. Again, the result of the moderated regression analysis, using the PROCESS Macro also showed that in model 2, age and gender were included as covariates to control for the extraneous factors and the adjusted R^2 for the model was .10. The general model fit showed was statistically significant at $F5(198) = 4.45$. Specifically, perceived social support increased mental health at $\beta = .08; t = 4.5, p < .05$. This implied that perceived social support is a vital tool to maintain good mental health. However, there was no statistically significant effect of perceived social support in the relationship between academic stress and mental health. This was at $\beta = -.30; t = .53, p > .05$ level of significance. This means that the presence of perceived social support at this instance was not strong to play any role in mitigating the effects of academic stress on mental health.

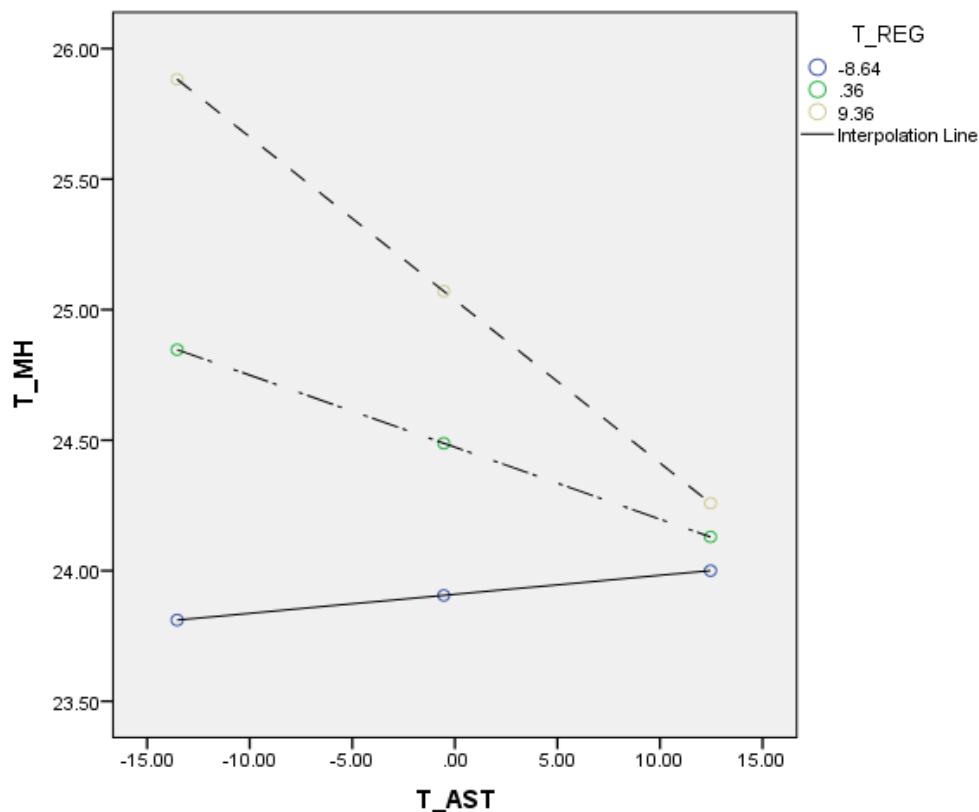


Figure 1. Moderation graph explaining the negative interaction influence of emotional regulation in the relationship between perceived academic stress and mental health of university students.

Discussion

The study sought to examine the moderating influence of emotional regulation and perceived social support on the relationship between academic stress and mental health among undergraduate students. The result of the analysis revealed that there was a negative correlation between academic stress and mental health. Excessive stress reduces concentration, memory, and academic performance, which in turn increases frustration and negative emotions. This finding aligns with the JD-R theory (Demerouti et al., 2001), which states that high job demands (i.e., academic stress) siphons individual resources, leaving them with insufficient resources and thus results in poor mental health. The outcome makes sense because stress is usually harmful, and when students feel too much academic pressure, their well-being tends to suffer. This finding is in line with previous studies (e.g., Agyapong-Opoku et al., 2026; Barbayannis et al., 2022; Córdova Olivera et al., 2023) which revealed significant negative correlation between academic stress and mental health.

The result of the present study equally revealed that there was an observed significant interaction effect of emotional regulation in the relationship between academic stress and mental health. Thus while those with poor control are more vulnerable, students with good emotional control suffer less harm from academic stress. For them, stress may not damage mental health as severely because they can reframe challenges, calm themselves, and seek solutions. This finding is consistent with earlier research (e.g., Extremera & Rey, 2015; Haver et al., 2026) which reported that emotional regulation is a significant moderator between academic stress and well-being. The finding also tend to agree with Xu et al. (2023) which indicated that emotional empathy was significantly and positively related to the challenges and dissatisfaction dimensions of higher education-related stress. Emotional intelligence was negatively correlated with the challenges dimension of higher education-related stress and positively correlated with the dissatisfaction dimension.

The third hypothesis which states that perceived social support will significantly moderate the negative relationship between academic stress and mental health was not significant. Specifically, there was no statistically significant moderation influence of perceived social support in the relationship between academic stress and mental health. Academic stress can be so intense (deadlines, exams, high expectations) that even if students feel supported, the stress still strongly degrades mental health. The analysis shows no significant effect because feeling supported does not always mean the support truly protects against stress, and other factors (like emotional regulation) may play a stronger role. This current finding contradicts the study by Blessing et al. (2023) who found that perceived family support appears to be the significant component of social support that moderates the relationship between PTSD-depression symptoms and suicidal ideation.

Implications of the study

Educational institutions in their bid to nurture young adults into efficient and productive adults most times subject them to high levels of stress seen in the light of intense academic activities, examinations, intensive studying of very voluminous contents but to name a few. Stress, when left unchecked or when poorly managed, can contribute to many health challenges not just for students but for everyone on all spheres of life. Stress can cause acute and chronic changes in certain brain areas which can cause long-term damage. Over-secretion of stress hormones most frequently impairs long-term delayed recall memory (Henckens et al., 2019). In as much as academic stress cannot be entirely removed from the equation, the mental well-being of students is top priority. The study implies that academic stress negatively affects mental health, but this relationship can be significantly weakened if

students have strong emotional regulation skills and adequate social support. This points to the importance of holistic student development, combining personal coping strategies with supportive environments.

Limitation of the study and suggestions for further studies

While the current study has numerous strengths, including using standardized instruments and a fairly large sample size, this study also has several limitations due to both the methodology and sample. The study is limited by its cross-sectional design, which prevents drawing causal conclusions. Future studies should attempt to adopt the longitudinal design that guarantees causality. Our study equally relies on self-reported data that may be influenced by social desirability bias. Future researchers should involve in collecting data from multiple sources such as from colleagues, lecturers, and perhaps students' parents. The sample for the study is not representative enough. These shortcomings makes it difficult for our study to be generalized to wider population. Future studies should use large sample size to enhance generalizability of the current study.

Conclusion

This study investigated academic stress as predictor of mental health and also the moderating influence of emotional regulation and perceived social support in the relationship between academic stress and mental health. Results of this study revealed significant negative correlation between academic stress and mental health. Emotional regulation was also found to be as a significant moderator between academic stress and mental health. These findings of our study indicate that while academic stress threatens mental health, its impact is minimized by strong emotional regulation and social support, reinforcing the importance of nurturing both individual resilience and a supportive environment.

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