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Effects of academic programs on stressors and coping strategies among university students

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ABSTRACT

This study investigated the psychological aspects of stress and coping strategies among college students in the post-implementation period of Ghana's free senior high school (SHS) policy. Focusing on the Department of Teacher Education at the University of Ghana, the research surveyed 270 students from diverse programs. Using psychological tools like the perceived stress scale and the brief coping orientation to problem experienced (COPE), the study employed statistical methods, including mean, standard deviation, Pearson product correlation, and hierarchical linear and multiple regression, to analyze the data. The findings revealed commonalities and differences in stressors and coping techniques across academic programs, indicating that the unique demands of each program influenced students' experiences. The study did not find a significant moderating effect of gender on the stressor-coping relationship. The results highlighted the importance of recognizing program-specific variations for targeted stress management support, illustrating the interplay between stressors, coping mechanisms, and academic programs. The study concluded by emphasizing the psychological implications of these findings, offering valuable insights into the complexities of stress and coping among college students, particularly within the context of educational reforms.

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1. INTRODUCTION

Stress is prevalent among college students, impacting academic performance and overall well-being. Nathan *et al*. [1] highlighted the global concern of workplace stress, affecting both business productivity and employee health. However, Ghani *et al*. [2] argue that stress can motivate students, especially students. The American College Health Association [3] reports widespread anxiety among students, with concerns about coursework and time management, particularly evident in first-year students [4], [5].

Teacher stress has garnered significant attention [6]. Mathew [7] emphasizes teaching as the most stressful profession, and Ganesan *et al.* [8] notes high-stress levels globally among teachers. The teacher turnover rate has risen in some regions due to occupational stress, and student teachers are considered particularly vulnerable [9]. Coping mechanisms, such as exercise and support networks, are crucial for teachers [9], [10]. Student teachers also face stress, with recommendations to focus on psychological readiness alongside academic training [11]. Coping strategies vary, including developing support networks, talking to supervisors, and engaging in various activities [8], [9].

Despite research on stress and coping strategies, the Ghanaian context should have more attention, particularly within traditional teacher education. This study addresses this gap, exploring stress and coping among regular undergraduate students. Moreover, it examines the impact of the recently introduced free senior high school (SHS) policy on students' experiences and coping mechanisms, considering the potential implications for educational quality [12], [13]. Additionally, the study employs advanced statistical techniques like multiple linear regressions to provide a rigorous analysis and interpretation of results, contributing to the existing literature.

Enrolling in university courses can be stressful as students embark on their journey toward independent adulthood [14], [15]. The beginning of academic pursuits involves challenges such as forming new social networks, adapting study methodologies, managing academic workload, mastering time allocation, and, often, changing residence [14], [15]. Thus, students employ various coping mechanisms to navigate these challenges. The correlation between stressors, coping mechanisms, and emotional intelligence (EI) is complicated and mutually reliant. The effectiveness of managing these stressors relies on one's coping mechanisms. These coping mechanisms are crucial tools that equip individuals to handle stress effectively. Thus, EI is essential in this process, as individuals with elevated EI are more adept at identifying, comprehending, and controlling their own emotions as well as the emotions of others. These features lead to more efficient coping strategies and diminished adverse effects from stressors [16], [17]. Studies suggest that students may experience psychological and physical exhaustion, burnout, unhappiness, and remorse about their aspirations [18], affecting communication in various aspects of their lives [19].

Coping skills are essential to mitigate the impact of stress on physical health resulting from academic demands [20]. Programs supporting learners in teacher education aim to help them reflect on coping behaviors and their influence on learning and abilities [21]. However, despite the potential of adaptive coping strategies to alleviate stress and aid prospective educators, factors such as cultural backgrounds, education level, life experiences, role stress, environment, and gender can shape students' approaches to managing academic stress [21].

To prevent degradation due to stress, resources, and perspectives should be employed to encourage coping mechanisms or buffer their effects [20]. This study raises awareness of student coping mechanisms and stressors among university employees and teacher education lecturers in different programs, aiming to provide supportive services when needed. It explores the relationship between students' experiences with stressors and coping techniques, considering the impact of the program of study, specifically in the Department of Teacher Education at the University of Ghana. The findings inform the development of strategies to support students' transition to becoming teachers.

In alignment with extant literature, we formulated four research objectives, they are: i) examine the differences in stressors students encounter according to their program of study; ii) explore the differences in coping mechanisms employed by students according to their program of study; iii) evaluate the relationship between the stressors encountered by students and coping mechanisms employed according to their program; and iv) examine how gender moderates the relationship between stressors and coping strategies.

2. LITERATURE REVIEW

2.1. Conceptual framework

Stress, a psychological and physiological reaction to overwhelming demands, is a ubiquitous phenomenon with profound effects on health and performance [22]–[25]. It impacts memory, attention, decision-making, and academic/professional achievements, yet moderate stress can enhance motivation, learning, and problem-solving abilities, aiding in adaptation to new situations [26], [27]. Coping strategies, cognitive and behavioral techniques, aim to mitigate stress's adverse effects, encompassing problem-focused, emotion-focused, and avoidant approaches [22], [28], [29]. Research indicates that coping tactics can either ameliorate or exacerbate health and well-being outcomes, with problem-focused coping typically improving physical and mental health, while avoidant coping tends to worsen it [29], [30]. This conceptual framework diagram provides a visual representation of the variables and relationships explored in the study, helping to clarify the research questions. Figure 1 illustrates the relationships investigated in the study regarding college students' experiences with stressors and coping techniques.

For example, the study explored whether the type and level of stressors experienced by college students vary according to their program of study, as shown by the arrow between program of study and stressors. The research also examined whether students in different programs of study use different coping strategies to manage stress, as shown by the arrows between the course of study and coping strategies. Finally, the study explored the relationship between the stressors experienced by students and the coping strategies they use, as shown by the arrow between stressors and coping strategies.

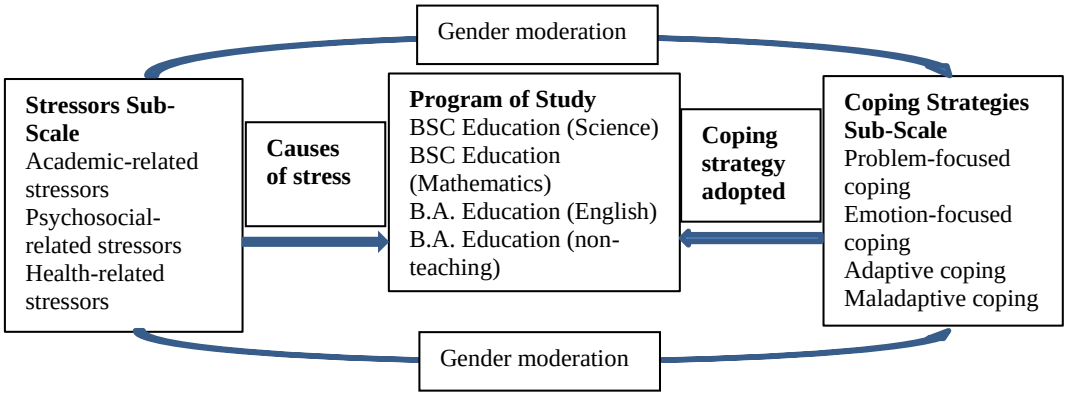

Figure 1. College students' experiences with stressors and coping techniques used between the variables represent the relationships investigated in the study

2.2. Theoretical framework

The theoretical framework of stressors and coping strategies draws from several perspectives, including transactional model [22], social cognitive theory [31], and biopsychosocial model [32]. These theories posit that stress arises from perceived threats, influenced by cognitive appraisal, coping strategies, and environmental factors. Lazarus and Folkman [22] transactional model highlights the role of cognitive appraisal in stress perception and response. Individuals assess situations for relevance, meaning, and impact on well-being, with stress arising from perceived threats, losses, or risks. Primary appraisal evaluates the situation's significance, while secondary appraisal assesses personal resources and control [33]. Bandura's social cognitive theory emphasizes observational learning and self-efficacy in coping. Individuals acquire coping skills through observation, cognitive evaluation, and situational factors, shaping their responses to stressors [31]. Engel [32] biopsychosocial model posits that stress stems from biological, psychological, and social factors. Coping strategies involve cognitive and physiological processes aimed at managing stressors [32]. In summary, these theories underscore the role of perception, appraisal, and coping mechanisms in shaping individuals' responses to stressors, emphasizing the interplay between cognitive, physiological, and environmental factors in stress management.

2.3. Empirical review of related literature

2.3.1. Differences in stressors encountered by students according to their program of study

This review examines stressors experienced by students across different academic programs. The literature indicates that stressors vary based on the nature of the program. For instance, Caroll [34] found that music education majors reported issues like substance abuse, sleep deprivation, high-stress levels, and relationship difficulties. Learner athletes, as per Lu *et al.* [35], face stressors such as demanding coaches, conflicting schedules, and financial strain. Jacobs *et al.* [36] highlighted stressors among collegiate flight students, including inadequate preparation, injury concerns, and performance expectations. Similarly, Lee *et al*. [37] noted stressors for electrical engineering students, including academic pressure, practical challenges, and time management issues. Lastly, Stubbe *et al*. [38] identified stressors for performing arts students, including physical strain, social disconnection, and psychological withdrawal. Overall, while some stressors are common among students, differences emerge based on their academic programs.

2.3.2. Differences in coping mechanisms employed by students according to their program of study

This review explores variations in coping mechanisms among students based on their academic programs. Overall, it found several effective coping strategies, including problem-solving, seeking support, community engagement, and tolerance. However, Valenti and Faraci [39] highlighted problem-focused coping as most beneficial for university adjustment, while avoidance and emotion-focused strategies proved less effective. Klonoff-Cohen [40] emphasized the efficacy of skill enhancement programs, contemplation, reflective awareness, and physical activity for improving psychological well-being. Amponsah *et al.* [17] identified activities like fidgeting, learning from experienced teachers, and acquiring new skills as effective stress management strategies. Åsebø and Løvoll [41] similarly identified various coping mechanisms, including problem-solving and seeking knowledge, as valuable for stress management. These findings underscore the importance of tailoring coping strategies to specific program requirements and evaluating their effectiveness in helping students manage stress effectively.

2.3.3. Relationship between stressors encountered by students and coping mechanisms employed according to their program

A growing body of research links student stressors and program-specific coping methods. Regehr *et al*. [42] examined medical students' stressors and coping mechanisms. Medical students coped with stress from academic workload, clinical training, and personal issues by seeking social support, problem-solving, and self-care. Crego *et al*. [43] examined dentistry student stressors and coping techniques. According to the authors, dental students relied on social support, problem-solving, and leisure activities to cope with academic pressures, clinical training, and personal issues. Other research has examined stressors and coping techniques in nursing [44], engineering [45], and business students [46]. This research indicated that students in these programs employ various coping mechanisms to handle stress from academic responsibilities, clinical or practical training, and personal variables. These studies demonstrate that student pressures differ by academic Program, but coping techniques are often comparable. Social support, problem-solving, and self-care are common coping mechanisms. More research is needed to uncover appropriate coping strategies for students in diverse programs and to understand their pressures.

2.3.4. How gender moderates the relationship between stressors and coping strategies

Several studies [47], [48] consistently found that stressors impact coping mechanisms uniformly across diverse populations, irrespective of gender. These results support the notion of a consistent stressor-coping relationship regardless of gender. However, dissenting views exist within academia. Other research [48], [49] challenge this consensus by identifying a significant gender moderating effect on stressor-coping dynamics. They suggest variations in coping strategies between genders, adding complexity to our understanding of this interaction. The literature reflects an ongoing discourse on the role of gender in moderating stressor-coping relationships, highlighting the need for continued investigation and consideration of contextual factors. These diverse perspectives underscore the dynamic nature of this interaction, emphasizing its complexity in various academic and cultural contexts. Further exploration is necessary to gain a comprehensive understanding of how gender influences stressor-coping dynamics.

3. METHOD

3.1. Study design

This study aimed to examine the stress levels experienced by students and the coping strategies they use to at the University of Ghana, focusing on how they cope with stress based on their academic program. The study utilized a quantitative approach with a descriptive, cross-sectional design. The researchers collected data through self-reported questionnaires, including the perceived stress scale [50] and the brief coping orientation to problem experienced (COPE) [51] as stress and coping techniques. Additionally, the questionnaire contained a demographic section to collect information about the participants' characteristics.

3.2. Population

The study aimed to investigate a group of students from the Department of Teacher Education at the University of Ghana, specifically those enrolled in the School of Education and Leadership. The target population initially included all 2,469 students in the Department of Teacher Education. However, due to accessibility issues, the study focused on a subset of 494 students from various levels within the department.

3.3. Demographic information of respondents

The researcher obtained demographic information from the respondents to understand their distribution and gain insight into their characteristics. Table 1 displays the demographic details of the study sample, including age, gender, academic level, employment status, marital status, religious affiliation, and academic program—this data collection aimed to create a participant profile. Notably, the questionnaire achieved a 100% response rate, and the internal consistency of the items was confirmed with a Cronbach’s alpha coefficient of .78. This indicates that the questionnaire demonstrated internal consistency, ensuring reliable measurement of the intended constructs. The high response rate suggests active engagement from participants, enhancing the validity of the study's findings.

The study, with a substantial sample size of 270 participants, included 126 males (46.7%) and 144 females (53.3%). The majority were in level 200 (65.2%) and the rest in level 300 (34.8%). Most were unmarried (95.2%) and unemployed (89.3%), predominantly identified as Christian (80%), and primarily enrolled in B.A. Education programs (68.9%). The mean age was 20.98 years (SD=1.633).

Table 1. Demographic data of respondents

Variables	N=270	N (%)
Gender	Male	126 (46.7)
	Female	144 (53.3)
Level	200	176 (65.2)
	300	94 (34.8)
Employment status	Employed	29 (10.7)
	Unemployed	241 (89.3)
Marital status	Married	13 (4.8)
	Unmarried	257 (95.2)
Religious denomination	Christianity	216 (80)
	Islamic	44 (16.3)
	Traditional	3 (1.1)
	Others	7 (2.6)
Program pursuing	B.A. Education (Non-teaching)	186 (68.9)
	B.A. English Education	48 (17.8)
	BSC Mathematics Education	11 (4.1)
	BSC Science Education	25 (9.3)
Age	Mean (SD)	20.98 (1.633)

3.4. Sample and sampling techniques

Non-probability sampling was used. Specifically, the study employed the purposive sampling technique. The purposive sampling involves selecting specific individuals or elements from the population based on predefined criteria or characteristics. The sample was drawn from all the students in the department. However, students reading different programs were purposely identified, and their responses were received. Yamane [52] proposed a formula for estimating sample size in 1973. The formula gave a sample size of 270. Therefore, a sample size of 270 was used due to the number of questionnaires returned through Google Forms.

3.5. Instrumentation

The study employed three research instruments to collect data from a student sample. The data encompassed demographic information, sources of stress, and self-reported coping styles. Stress was measured using the perceived stress scale [53], and coping strategies were assessed through the adapted brief coping orientation to problems experienced (COPE) inventory, grounded in conceptual framework [28]. The adaptation process involved meticulous item selection and the generation of supplementary inquiries, followed by a thorough validation procedure, including face validity, pilot testing, and principal components analysis (PCA) to establish reliability coefficients.

A 17-item self-report instrument with three sub-scales (academic-related, health-related, and psychosocial) was utilized for stressors. Academic-related stressors comprised eight subscales, health-related stressors had two, and psychosocial stressors were examined broadly. The brief COPE tool assessed coping strategies, categorizing them into adaptive, emotion-focused, problem-focused, and maladaptive coping. Adaptive coping involves acceptance and hum, or emotion-focused coping includes emotional support, positive reframing, and religion, while problem-focused coping is centered on actively addressing the problem. Maladaptive coping encompassed unhelpful strategies like venting, behavioral disengagement, self-distraction, substance use, and denial. Notably, the maladaptive coping scale had no reverse coding, enhancing the clarity of data interpretation. The study's methodology aimed to enhance comprehension of students' stressors and coping mechanisms, offering valuable insights into the broader field of stress research within academic contexts.

3.6. Method of data collection and ethical clearance

To collect data from participants who met the inclusion criteria, the researchers utilized Google Forms distributed by course representatives. The forms were shared among students in the Department of Teacher Education taking courses in BSc Education (Science), BSc Education (Mathematics), B.A. Education (English), and B.A. Education (non-teaching). The author requested and received ethical clearance from the institution of study's ethics committee before starting the study with approval number ECH 028/2023. Additionally, the author received formal approval from the department's head, who oversees teacher preparation. Also, the Author ensured that each participant read and signed our consent forms before participating in the research. The participants' identities were protected because we ensured they anonymously finished the consent forms and questionnaires.

3.7. Method of data analysis

After the data collection period, the participants' responses underwent processing and analysis with SPSS version 27, a statistical software program employing appropriate statistical methods. The steps in the data analysis process included determining the measurement scale for each variable, giving codes to forms that were filled out, and performing identification tests to ensure correctness while entering the data. Descriptive statistics like percentages, frequencies, means, and standard deviations and inferential statistics like multivariate analysis of variance or MANOVA (Wilk's Lambda) and multiple linear regression were used to address the research objectives. The researchers analyzed the data thoroughly and derived valuable insights from the results thanks to this method.

4. RESULTS AND DISCUSSION

4.1. Results

This section of the study provides a detailed analysis of this research paper based on the study's objectives. In line with the first objective of this study, the study employs the MANOVA (Wilk's Lambda) statistical measure to explore the differences in stressors encountered by students according to their program. About the study's second objective, the paper employs the MANOVA (Wilk's Lambda) statistical measure to explore the copying strategies employed by students per the program of study. Regarding the third objective, the study employed multiple linear regression to explore the relationship between the stressors encountered by students and the coping mechanisms they employ considering their academic program.

4.1.1. Differences in stressors encountered by students according to their program of study

The main goal was to identify stressor variations among students across different programs within the Department of Teacher Education at the University of Ghana. These are students offering BSC Education (Science), BSC Education (Mathematics), B.A. Education (English), and B.A. Education (non-teaching). Table 2 presents the differences in stressors encountered by students according to their program of study.

Table 2. Differences in stressors encountered by Students according to their program of study

Variables	Programs	BA-Education			BA-English Ed.			BSC-Math Ed.			BSC-Science Ed.		
		M	SD	P	M	SD	P	M	SD	P	M	SD	P
Academic related	(F=6.450, p<.001)	27.22	5.71		30.23	6.58		31.83	4.17		30.36	4.78	
	BA-Education						.007			.050			.052
	BA-English Education			.007						.841			1.00
	BSC-Math Education			.050			.841						.896
	BSC-Science Education			.052			1.00			.896			
Psychosocial related	(F=3.675, Sig=.013)	24.46	6.76		28.04	6.40		25.91	7.73		25.80	6.85	
	BA-Education						.006			.900			.788
	BA-English Education			.006						.780			.534
	BSC-Math Education			.900			.780						1.00
	BSC-Science Education			.788			.534			1.00			
Health related	(F=4.579, Sig=.004)	6.38	1.93		7.54	1.68		6.45	2.73		6.76	2.12	
	BA-Education						.002			.999			.799
	BA-English Education			.002						.342			.365
	BSC-Math Education			.999			.342						.973
	BSC-Science Education			.799			.365			.973			

The multivariate Wilks Lambda test indicated significant disparities in student stressors across programs, with BSC Education (Mathematics) exhibiting the highest levels of academic-related stress. B.A. Education (English) reports the most substantial psychosocial and health-related stress and notable variations were observed among programs in all categories of stressors.

4.1.2. Differences in coping mechanisms employed by students according to their program of study

Objective two aimed to assess if students in various programs within the Department of Teacher Education at the University of Ghana employed different coping mechanisms. The results, as outlined in Table 3, revealed significant variations in coping strategies across programs (Wilks Lambda test, p=.028). Notably, differences were observed in problem-focused (F=4.12, P=.007) and emotionally-focused (F=2.81, Sig=.040) coping mechanisms among programs. Further analysis showed significant differences in some coping mechanisms, while others remained consistent across programs. Adaptive coping (F=.299, Sig=.826) and maladaptive coping (F=2.04, Sig=.109) did not vary based on the program of study, suggesting students utilize similar coping strategies regardless of their academic focus in the Department of Teacher Education.

Table 3. Differences in coping mechanisms employed by students according to their program of study

Variables	Programs	BA-Education			BA-English Ed.			BSC-Math Ed.			BSC-Science Ed.		
		M	SD	P	M	SD	P	M	SD	P	M	SD	P
Problem-focused	(F=4.12, P=.007)	7.27	1.90		7.43	1.92		7.82	1.33		6.00	1.92	
	BA-Education						.947			.785			.009
	BA-English Education			.947						.931			.012
	BSC-Math Education			.785			.931						.040
	BSC-Science Education			.009			.12			.040			
Emotion-focused	(F=2.81, Sig=.040)	11.30	2.45		11.21	2.02		11.91	2.32		9.92	2.66	
	BA-Education						.995			.847			.036
	BA-English Education			.995						.818			.131
	BSC-Math Education			.847			.818						.102
	BSC-Science Education			.036			.131			.102			
Adaptive coping	(F=.299, Sig=.826)	5.77	1.94		6.00	1.64		6.00	1.41		6.00	1.86	
Maladaptive coping	(F=2.04, Sig=.109)	14.42	3.53		15.73	4.36		15.91	2.88		14.52	3.55	

4.1.3. Relationship between the stressors encountered by students and the coping mechanisms they employ regarding their program of study

This objective seeks to identify if there is some relationship between the stressors students encounter and the coping mechanisms they employ according to their program. In this regard, the study used multiple linear regression to assess the relationship between student stressors and the coping mechanisms employed, considering the moderating role of the program of study. Initially, the analysis satisfied multicollinearity assumptions, as evidenced by tolerance values ranging from .497 to 1.00. In contrast, the value inflation factor (VIF) ranges from 1.00 to 2.01, indicating that multicollinearity is not a problem in the analysis. Table 4 shows the results of the multiple regression analysis (model summary) examining the relationship between predictors and the dependent variable, coping strategies. The results of model 1, as in Table 4 show that the kind of stressors faced by students explains 10.9% of the variation of the copying mechanisms employed by the students (β=.185, CI=.43, .64, P<.001). Table 5 demonstrates that the analysis of variance or ANOVA results establish the model's significance at a 1% level. This underscores the collective significant impact of the variables included in the model on the outcome.

Table 4. Multiple regression analysis (model summary[c])

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Change statistics					Durbin-Watson
					R^2 change	F change	df1	df2	Sig. F change	
1	.330[a]	.109	.106	6.01196	.109	32.617	1	267	.000	
2	.335[b]	.114	.112	6.01170	.0456	1.024	1	266	.000	1.172

Note: a. Predictors: (constant), stressors; b. Predictors: (constant), stressors, the moderating role of the program of study; c. Dependent variable: coping strategies

Table 5. Significance of the models for the regression model

	Model	Sum of squares	df	Mean square	F	Sig.
1	Regression	1,178.901	1	1,178.901	32.617	.000[b]
	Residual	9,650.371	267	36.144		
	Total	10,829.271	268			
2	Regression	1,215.892	2	607.946	16.822	.000[c]
	Residual	9,613.379	266	36.141		
	Total	10,829.271	268			

The inclusion of the moderating role of the program of study, as indicated in model 2, as in Table 4, the inclusion accounted for a 4% variance in the copying strategies adopted by students (β=.036, CI=.29, .42, P<.001). This finding indicates that the program of study plays a moderating role in the relationship between student stressors and the coping mechanisms employed. In this regard, the study confirms objective three that there is a statistically significant relationship between the stressors encountered by students and the coping mechanisms they employ, contingent on their academic program.

4.1.4. Examine how gender moderates the interaction between stressors and coping strategies

To determine the association between the continuous independent variable, stressors, and the continuous dependent variable, coping strategies, moderating the latter by a dichotomous moderator variable, gender, researchers used a moderator analysis, specifically, hierarchical multiple regression. They used the standard technique for determining whether a moderating effect exists, including a (linear) interaction term in

a multiple regression model. Table 6 presents the results of a Hierarchical Multiple Regression analysis examining the relationship between predictors and the dependent variable, Coping_Total.

From Table 6, a hierarchical multiple regression was run to assess the statistical significance of the interaction term between stressors and gender. Data mean±standard error. Gender did not moderate the effect of stressors on coping strategies, as evidenced by no increase in total variation explained by 0%, which was not statistically significant (F(1, 265)=.121, p=.728). As such, the interaction term was dropped from the model. Table 7 shows the new model run, a multiple regression procedure. This new model revealed that there was a statistically significant positive linear relationship (b=.159, SE=.029) between stressors and coping strategies (p<.001). In addition, males had statistically negatively significantly lower coping than females, b=-.007, SE=.742, p<.001. Table 7 shows the coefficients for the regression model with Coping_Total as the dependent variable. Model 1 includes unstandardized coefficients, standardized coefficients (Beta), t-statistics, and significance levels for each predictor.

The hierarchical multiple regression analysis revealed no statistically significant moderating effect of gender on the link between stressors and coping strategies. The absence of an interaction term indicated that gender did not notably influence this association. A significant positive linear relationship between stressors and coping strategies was found, indicating that higher stress levels generally corresponded with increased coping efforts. However, males exhibited lower coping strategies compared to females, suggesting a gender difference. Despite this, the lack of significant gender moderation implies consistency in the stressor-coping relationship across both genders. This gender difference adds complexity, emphasizing higher coping strategies among females and contributing to understanding stressor-gender dynamics.

Table 6. Hierarchical multiple regression (model summary[c])

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Change statistics				
					R^2 change	F change	df1	df2	Sig. F change
1	.318[a]	.101	.095	6.04862	.101	14.998	2	266	.000
2	.319[b]	.102	.092	6.05864	.000	.121	1	265	.728

Note: a. Predictors: (constant), Male_Dummy, Stressors_Total; b. Predictors: (constant), Male_Dummy, Stressors_Total, Stressors_Total_Female_Dummy; c. Dependent variable: Coping_Total

Table 7. Coefficients[a] for the regression model

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B		Collinearity statistics	
		B	Std. error	Beta			Lower bound	Upper bound	Tolerance	VIF
1	(constant)	29.415	1.848		15.920	.000	25.778	33.053		
	Stressors_Total	.159	.029	.318	5.456	.000	.101	.216	.993	1.007
	Male_Dummy	-.007	.742	-.001	-.010	.992	-1.468	1.453	.993	1.007

Note: a. Dependent variable: Coping_Total

4.2. Discussion

The findings regarding the differences in stressors students encounter according to their program of study align with previous research [34], [37], indicating that students face diverse stressors depending on their academic programs. While, some studies [38], [54] suggest no significant differences in academic stressors across programs, others indicate notable variations. These mixed results suggest that the relationship between the program of study and academic stressors is complex and context dependent. Factors such as the nature of the coursework, the level of academic rigor, and the specific challenges associated with different fields may contribute to the differences in stress levels observed among students in various programs.

Objective two discussed the differences in coping strategies employed by students according to their program of study. The findings reveal diverse coping mechanisms among Department of Teacher Education college students regardless of their programs. For instance, Collier [55] identified effective strategies like seeking support from peers or mentors and engaging in problem-solving, which can help students manage academic pressures more effectively. On the other hand, Orines *et al*. [56] noted that some students resort to avoidance methods, such as denial and substance use, which can exacerbate stress and lead to additional issues. Positive coping strategies, like regular exercise, were also highlighted in Orines *et al*. [56], alongside negative strategies, including substance use. These findings resonate with earlier research [17], [41], which similarly found varied coping approaches among students. Other research [57]–[59] underscored the interrelations between stressors across academic, health, and psychosocial domains, impacting overall well-being. For example, Rehmani *et al*. [60] linked stress across domains in Pakistani medical students, while Khan *et al.* [61] associated stress with depression in Pakistani university students.

Academic, health, and psychosocial stressors intertwine, impacting student well-being uniquely and influenced by individual and contextual factors. Objective three discusses the relationship between the stressors encountered by students and the coping mechanisms they employ concerning their program of study. As shown in Table 4, the findings align with past studies [62], [63], supporting the idea that program choice influences stress management strategies. Sreeramareddy *et al*. [63] found a moderate positive correlation between stress sources and coping among Nepalese medical students, suggesting that students in certain programs may develop specific coping skills in response to their unique stressors. Similarly, Baqutayan [62] noted a positive relationship between stress levels and coping strategies. This study suggests that the program choice can moderate stress-coping dynamics, potentially fostering the development of coping skills in response to heightened stressors. However, it is crucial to acknowledge that excessive stress can harm physical and mental health, regardless of coping abilities. These findings echo existing research, emphasizing the interplay between stress and coping mechanisms.

Several studies [47], [48] supported our findings, indicating consistent stressor-coping relationships across genders. However, contrasting studies, such as Graves *et al.* [49] that suggest potential variations in coping strategies between males and females. These variations underscore the importance of considering gender as a factor in understanding stress and coping dynamics, as it may influence the effectiveness of different coping strategies and the overall stress experience.

4.3. Implications

The results highlight the necessity of customized psychological therapies based on students' coping strategies and program-specific stressors. Acknowledging these variations emphasizes how crucial it is to offer support services that deal with difficulties. The gender variations in coping mechanisms that have been discovered also imply that individual differences should be considered in interventions. This strategy can result in the creation of focused mental health services and support networks, improving students' academic performance and general well-being. By highlighting the influence of both individual and contextual factors on stress reactions, these discoveries advance psychology and provide direction for future studies and real-world applications.

5. CONCLUSION

In conclusion, the interplay between stressors and coping strategies among students within the Department of Teacher Education at the University of Ghana holds profound implications for psychology. The observed program-specific differences in stressors and coping mechanisms, with some being statistically significant, underscore the importance of considering the program of study as a crucial determinant of the challenges students face and the strategies they employ. This understanding aligns with the core principles of psychology, emphasizing the role of individual experiences and contextual factors in shaping stress responses and coping behaviors. Moreover, identifying adaptive and maladaptive coping strategies within the study programs further enriches our psychological insight into how students navigate and manage stress. Notably, the distinct patterns in emotion-focused and problem-focused coping across different programs highlight the need for a tailored psychological approach to coping mechanisms based on the specific academic context.

The study's application of hierarchical multiple linear regression to explore the relationship between stress and coping strategies, considering the program of study, unveils the moderating role of gender in shaping students' coping responses. This finding contributes to the broader psychological discourse on how contextual factors influence the stress-coping dynamic, emphasizing the importance of tailoring interventions to the challenges of distinct academic programs. While the study did not find a significant moderating effect of gender on the stressor-coping relationship, the acknowledgment of a notable gender difference in coping strategies adds another layer to our understanding of individual differences in stress management. These findings collectively reinforce the idea that psychological considerations are integral to comprehending the dynamics of stressors and coping mechanisms among students, providing valuable insights for researchers and practitioners in psychology.

The Department of Teacher Education at the University of Ghana should launch focused support services to cater to the unique stressors and coping requirements of students enrolled in various study programs, as suggested by the study's conclusions. This could involve gender- and program-specific workshops on coping mechanisms, stress management, and mental health services. Furthermore, providing professors and staff with training on identifying and addressing the stress responses exhibited by students may improve the university's support system. This strategy aims to cultivate an academic atmosphere that is more supportive and cognizant of students' distinct problems, enhancing their overall well-being and academic performance.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
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O : Writing - **O**riginal Draft
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Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

The research related to human use has been complied with all the relevant national regulations and institutional policies in accordance with the tenets of the Helsinki Declaration and has been approved by the authors' institutional review board.

DATA AVAILABILITY

Derived data supporting the findings of this study are available from the corresponding author [EAB] on request.

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