

Effects of Stress and Coping Mechanisms: The Case of Pre-Service Teachers in Selected Colleges of Education in Ghana

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Abstract This research examined the effects of stress on pre-service teachers in selected colleges of education in Ghana and the coping techniques they use to address stress. The purpose of the study was to assess the impact of stress on academic performance as well as the coping mechanisms of pre-service teachers in selected colleges of education in Ghana. This study adopted the positivist paradigm and a quantitative cross-sectional descriptive survey design. One hundred and fifty (150) second-year (degree) and third-year (diploma) students were randomly selected to take part in the study. There were 74 male and 76 female participants, with an average age of 21.9 years. The study results showed significant effects of stress on students that included tiredness, headaches, and insomnia. Males differed from females in depression, anxiety, isolation, and loss of appetite, with males experiencing high degrees of these compared with their female counterparts. Also, degree and diploma students differed on tiredness, concentration, restlessness, absentmindedness, seclusion, and motivation. To cope with stress, pre-service teachers employed a variety of methods, specifically adaptive coping strategies. Overall, pre-service teachers experience academic, health, and psychological-related effects of stress and mostly use adaptive coping strategies to manage stress.

Keywords: *adaptive coping mechanisms, colleges of education, effects of stress, maladaptive coping mechanisms, pre-service teachers*

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1. Introduction

Stress has been a topical issue of late, and so much research has been investigating issues relating to it in order to help address the challenges associated with it. Accordingly, some researchers have indicated that the aggregate of an individual's physical, cognitive, and psychological burden is stress [1]. It is also defined as a psychological and physical pressure characterised by mood disorders or high blood pressure that may develop in reaction to a scenario in which an individual feels endangered, pressurised, or both [2]. The assumption that stress negatively influences people's physiological and mental health has a lot of empirical backing [3,4,5]. According to [6], the liver can be strained due to obesity, dyslipidemia, diabetes, gastrointestinal disorders, or the overuse of some medications, causing it to accumulate more fat than is necessary. When one is stressed,

it is natural to feel nervous, which indicates short-term stress.

Chronic stress is characterised by episodes that persist over time, such as difficulty breathing and diminished desire. The body's response to stress is predictable and can be studied, and there are relaxation practices to help lessen its effects. Still, if it persists, it can have an irreparable impact on the human body, resulting in significant illnesses [5].

Stress affects everyone, regardless of age, educational background, geographic region, or socioeconomic class. People need a moderate or medium level of stress and arousal to perform at their peak. A small amount of stress may be beneficial for people to perform well in school [5] [7]. How people cope with stress is primarily determined by their coping skills. "Coping" is a behaviour that offers protection from being hurt psychologically due to a negative social encounter. Finding answers to some of these problems can be unpleasant and time-consuming, so it would be necessary to investigate the effects of their stress.

Most learners, including pre-service teachers in colleges of education, endure some type of stress during their pursuit of higher education, particularly while transitioning to new learning environments [3,8]. Learners in colleges of education in Ghana, like their counterparts in universities, are subjected to rigorous academic work such as doing assignments and subject projects, studying for quizzes, and sitting for end-of-semester examinations. Meeting deadlines for assignment submissions and other social commitments necessitates a great deal of effort to manage these roles [9,10]. Yet, their counterparts at the universities are more recognised than they are, as it is believed that most students in colleges of education are not necessarily there by choice. Also, most of the literature reviewed relates to occupational stress among college of education tutors [11,12,13,14] with little or no available literature regarding pre-service teachers in the colleges of education in terms of stress. Most of the literature is related to students in universities, both regular [3,8] and distance [10,15]. This suggests that work in this area regarding colleges of education students is limited.

The effects of these stressful events on learners and the coping mechanisms used to decrease or stop them are of significant consequence and should be researched since this will contribute to a better understanding of the coping techniques' success. If these stressful conditions persist without an effective plan to mitigate or manage them, the learners will have a tough time managing them psychologically, physiologically, or cognitively. In the light of the changes in programmes in colleges of education (COEs) from 3-year diploma-awarding institutions to 4-year Bachelor of Education degree-awarding institutions, having the same tutors and facilities, the literature search revealed that there is a scarcity of research on the causes and effects of stress on pre-service teachers, as well as the coping strategies they employ to mitigate the effects of stress. This study was undertaken in this context to assess the impact of stress on academic performance as well as the coping mechanisms of pre-service teachers in selected colleges of education in Ghana.

1.1. Objectives of the Study

1. To find out the effects of stress on pre-service teachers in colleges of education.
2. To compare the gender differences in the effects of stress regarding pre-service teachers in colleges of education.

3. To compare the differences in the effects of stress among degree and diploma pre-service teachers in colleges of education.
4. Examine the coping strategies pre-service teachers in colleges of education employ to manage stress.

1.2. Research Questions

1. What impact do the effects of stress have on pre-service teachers in colleges of education?
2. What are the gender differences in the effects of stress regarding pre-service teachers in colleges of education?
3. What are the differences in the effects of stress among degree and diploma pre-service teachers in colleges of education?
4. What coping strategies do pre-service teachers in colleges of education employ to manage stress?

2. Literature Review

Circumstances and events in life can put our health in jeopardy. When someone has too many expectations and stress on themselves, it can cause insomnia. Anxiety about tests and schoolwork, beginning to look for a job, having a baby, and getting a degree are all stressful situations because any change in your life, good or bad, is stressful to your body. According to [16], stress is a stimulus, and it comprises external pressures that trigger autonomic responses. Later researchers have accepted this approach, which has resulted in a number of investigations into how diverse life events, such as divorce or job loss, influence people. Stress is a physiological response associated with elevated heart rate and blood pressure, rapid breathing, dilated pupils, and impaired salivation and digestion. According to some studies [17] positive life events such as talking with friends or getting a good night's sleep can be stress absorbers. Other areas of study, emphasising physiological reactions, were sparked as a result of this. Furthermore, certain cognitive theorists describe stress as the relationship between the stimuli and the person's assessment, which determines the individual's behaviour [18].

The conceptual framework for the study is presented in Figure 1. The framework suggests that stress can affect all categories of pre-service teachers, who might use adaptive or maladaptive coping strategies to manage it.

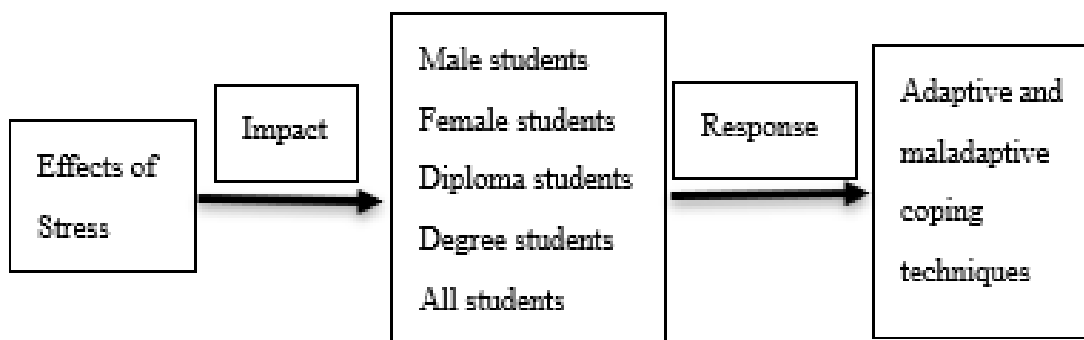


Figure 1. Model of conceptual Framework

A reason for the different definitions is that a situation that causes stress for one person may have no effect on another. For instance, both persons A and B may fail an examination. Person A may interpret his/her failure as a result of his/her inability to prepare adequately and, therefore, need to work hard and pass at another time. Person B, on the other hand, may interpret his/her failure as a significant setback to the extent that it can never be reversed. In general, a situation may have different stress levels on individuals, which affect them both physiologically and psychologically.

2.1. Effects of Stress

Stress, a phenomenon that affects every individual, has both positive and negative sides that affect our well-being. The effects of stress influence our psychological, behavioural, and physical reactions to situations.

2.1.1. Negative Effects of Stress

Biological Effects: The first and foremost effect on anyone under stress would be a biological one. This is where the biological make-up of the individual reacts to the situation. The stressor causes the adrenaline glands to generate hormones that cause a rise in heart rate, blood pressure, and changes in the skin, which are triggered by electrical impulses [17,19]. Due to the ongoing secretion of stress-related hormones, continued vulnerability to stress will reduce the body's overall level of biological functionality. It would cause the blood vessels and heart rhythm to deteriorate with time. As our capability to combat pathogens deteriorates, we will become more prone to disease [20].

Psychological problems and disorders: Anxiety is a feeling of impending danger that is not fully understood. Frustration leads to fury, and fear leads to despair when a stressor poses an actual threat. The long-term effect of prolonged stress would affect the mental health of the individual [21].

Physical and behavioural effects: Stress can contribute to nervous difficulties such as trembling, gulping meals, smoking or drinking excessively, feeling weary for no reason, and even attempting suicide. Physical arousal for an extended period can result in health issues such as trouble breathing, sleeplessness, migraines, headaches, urine and bowel abnormalities, muscular pains, perspiration, and mouth dryness [22].

Disruption of social reaction: This normally results from post-traumatic stress disorders (PTSD) in which the actual events and the feelings associated with them are re-experienced in vivid flashbacks [23] for example, those who have suffered from child abuse or rape, or victims of natural disasters or accidents. Symptoms of PTSD include insomnia, alcohol and drug abuse, and, in some cases, suicide. People's ability to deal with future stress declines as a result of past stress [24].

Burnout: This normally occurs among people in service occupations such as social workers, nurses, doctors, counsellors, and clinical psychologists. Burnout is an emotional state that one experiences after enduring continuing stress, and the individual suffers from

emotional exhaustion. They seem to lose a sense of themselves as effective individuals. They may believe that their work is pointless and that there is nothing they can do; they may believe that they have nothing left to give to others [25]. [26] also sees family, financial, and social pressures as possible causes of burnout. Burnout people often become uncaring, depersonalised, and unproductive.

Shock and disorientation: News of a disaster might cause fainting, dry mouth, a fast pulse, or a pounding heart resulting from stress. [27] is of the view that severe stress can leave students dazed and confused. Sometimes shock results in the feeling that everything is going to pieces and calls for immediate help [28].

2.1.2. Positive Effects of Stress

Personal growth, or the journey toward better psychological health, is aided by stress. People need a moderate or medium level of stress and arousal to perform at their peak. According to [29], having a stressful event forewarns one of oncoming traumatic situations.

2.1.3. Coping Strategies

Coping strategies are linked to the idea of cognitive dissonance and, as a result, to stress-related individual-environment interactions. Much coping research follows [30] conceptualisation of coping as psychological and behavioural attempts to control, tolerate, or reduce overt and covert presumption and stresses. The following are the consequences of this conceptualisation: (a) Coping acts are classified according to various aspects of the coping process; (b) The coping process entails an individual's psychological and behavioural responses; (c) Coping usually consists of a series of discrete activities that are structured consecutively, producing a coping experience. Coping is generally defined by the emergence of many action processes simultaneously, resulting in the interconnectivity of coping experiences; The focus of coping mechanisms on various components of traumatic circumstances varies [18]. Individuals might utilise problem-focused coping in an attempt to alter the individual-environment dynamics that are at the source of negative feelings or stress. The Lazarus model is an example of one form of coping theory. Individuals can also connect with inner aspects to improve their psychological state or alter their perception of a challenging situation [31]. This study examines the connections between an individual's coping techniques and result factors like self-reported or objectively measured coping effectiveness.

The research technique employed in this study aims to lay the framework for a comprehensive programme to improve coping efficacy. Macroanalysis appraisal operates at a higher degree of abstraction, emphasising more fundamental elements, whilst microanalytic techniques are based on a wide range of distinct coping mechanisms. [32] Freud's (1926) concept of "classic" defence techniques exemplifies a state-oriented macro analytic approach [33], [34]. Sigmund Freud recognised a wide range of defence mechanisms, but he eventually narrowed them down to repression and intellectualisation. A trait-oriented association of these two primary defences is the repression-sensitisation personality element [33,34].

2.1.4. Empirical Review

Financial difficulties, health issues, social hurdles, and academic challenges can all cause stress [3,7]. Academic considerations appear to be more important than social aspects in causing stress in pre-service teachers [3]. According to studies, persistent and ongoing exposure to stressful events is associated with students' emotional, physical, and mental disorders [35]. Adolescents with chronic stress have low self-esteem, difficulty coping in a variety of situations, sleep difficulties, impaired attention, and unusual hunger, all of which affect academic performance and personal development [3].

Stress can also lead to improved performance, due to the students' stress management skills [36]. According to an OECD survey, secondary learners who experience high levels of academic-related stress also report lower levels of well-being as evaluated by emotional, psychosocial, intellectual, and physical elements [37]. According to a comprehensive evaluation of 13 research works, self-reported stress levels are linked to lower quality of life and well-being among college students [38]. More severe mental health conditions, such as anxiety and depression, can be exacerbated by stress [39,40].

Stressed people are less inclined to be physically active, such as during test periods. Academic stress has been connected to a host of detrimental physical health effects that may be interlinked [41]. [42] assert that, stress can promote noncommunicable illnesses like metabolic syndrome, overweight, and insulin sensitivity. Hunger [43] and a rise in obesity have also been linked to stress [43], [44]. Academic stress has been linked to the development of health problems [40].

Coping strategies' situational uniqueness is demonstrated because they are defined as responses to a specific issue. This has led to the development of a flexible coping technique in recent years, based on the assumption that a single person can mix several coping techniques, depending on the situation, using one or the other [45,46]. When a person uses problem-focused or emotion-focused techniques, it depends on how well the stressor they are experiencing may be controlled. The advantages of methodological coping strategies are augmented [47]. Individuals with a limited repertoire of coping mechanisms, on the other hand, are less adept at responding to the situation's specific requirements [48].

Avoiding the detrimental effects of long-term stress necessitates developing stress coping abilities [49]. Coping tactics are the approaches individuals use to master, reduce, or eliminate the negative effects of a stressful event. Coping is complex, and it necessitates a number of strategies, some of which are more effective than others [8,50]. When it comes to stress management, [51] differentiates between adaptive and maladaptive coping mechanisms. To cope with stress, individuals desire adaptive coping strategies other than maladaptive ones.

Lazarus and Folkman's as cited in [51] indicated that the problem-focused stress management solutions reinforce these attempts to interact, act on, or adjust the perceived stress and are referred to as coping strategies. According to [52] relaxation, exercise, excellent health, and time management can help manage stress. Students' most prevalent coping techniques are internet browsing, sleeping and resting, watching TV shows or movies, and

instant messaging [3,53]. [54] conducted a study on "perceived stress, sources, and severity of stress among medical undergraduates in a Pakistani medical school", and found that the most common sources of stress were "loaded academic curriculum," "sleeping problems," "raising concerns about the future," "social isolation," "achievement in examinations" and "high parental expectations." [54] study revealed, among others, that positive reframing, planning, acceptance, active coping, self-distraction, and emotional support were some of the coping tactics adopted by students at the university. A study conducted by [8] among pre-service teachers at a major university in Ghana, revealed that the females used adaptive coping methods whereas the males used maladaptive and avoidance coping strategies. Similarly, scholastic pressures and health stressors did not differ by gender, according to the study.

3. Methodology

The research investigated the "effects of stress on academic performance of pre-service teachers at selected colleges of education" in Ghana using a cross-sectional descriptive survey approach. The goal of adopting the survey design was to learn about the effects of stress on pre-service teachers in colleges of education and the coping mechanisms they use to alleviate stress. This study design is primarily concerned with describing a phenomenon. A survey questionnaire was developed and administered to determine the impact of stress on pre-service teachers in colleges of education.

A cross-sectional descriptive survey design was used because it is more cost-effective. Furthermore, findings are obtained more quickly. Sampling enables a broader range of information to be collected and a higher level of work quality because more reliable data may be collected under the right conditions. When it comes to extracting fundamental information for every population unit, sample surveys have significant drawbacks. For lower sample numbers, sampling errors are also more common. However, given the homogeneity and size of the study's target group, the benefits of a descriptive sample survey greatly exceed the drawbacks.

The study's target population includes all pre-service teachers from Ghana's various colleges of education. The study's target audience is all pre-service teachers in the Greater Accra Region's two designated colleges of education who are enrolled in diploma and degree programmes for the 2020/2021 academic year.

The sample was drawn from Level 200 students pursuing a Bachelor of Education degree and the Level 300 students pursuing a diploma programme. Because of their proximity to the researchers, the two colleges in the Greater Accra Region were purposefully chosen. From a population of over 1000 students, 150 were selected for the study. [55] developed the sampling technique, which is used to establish sample size for educational and psychological research.

A survey questionnaire was designed, developed, and administered to pre-service teachers from two colleges of education to investigate the effects of stress on their academic achievement and the coping mechanisms they

use to deal with stress. There are four sections in the questionnaire. The respondents' data and background information were elicited in Section A. Students were required to enter personal information such as their ages, level, gender, religious affiliation, and grade point average (GPA). Section B also includes fifteen statements about the effect of stress on pre-service teachers' academic performance. Students were asked to respond to each statement by indicating whether they strongly agree, agree but are undecided, disagree, or strongly disagree.

Section C also contains twelve assertions about the coping methods used by pre-service teachers in Ghanaian colleges of education. Students were requested to respond to each statement by indicating whether they strongly agree, agree but are undecided, disagree, or strongly disagree.

The Dental Environmental Stress (DES) questionnaire was adapted for the study. Some of the items were obtained, whereas the others were added as a result of an evaluation of updated versions of DES published in the literature [56] to investigate the sources and consequences of stress experienced by learners. Similarly, "The Brief COPE" by [30] was adapted to evaluate students' stress coping procedures.

As a result of the COVID-19 pandemic, data for the study was collected in May 2021 using Google forms. Permission from the Principals of the colleges was acquired to get access to the research location. To administer the instruments on their platforms, the researchers made contact with the respondents through their tutors. In each case, the researchers paid two visits to the colleges. The first step was to provide advance notice to obtain authorisation from the principals of the selected colleges and make the required arrangements for the instrument's administration. The second step was to meet with chosen tutors to present the research to the student leadership, who would then post the instrument to their WhatsApp platform to help with data gathering. The study's goal was communicated to the respondents in an introduction letter from the Head of the Department of Teacher Education, University of Ghana. The study included students at levels 300 (diploma students) and 200 (degree students).

There were two steps to the methodologies utilised to address the four research questions. Based on the sections of the questionnaire, the responses were grouped and scored. The first part comprised percentages, means, and standard deviations to determine how many students agreed or disagreed with the questionnaire's assertions about effects and coping mechanisms. Pre-service teachers' responses to the propositions in sections A, B, and C were represented by the percent of student responses. Finally, the independent samples t-test was used to compare responses of males and females, as well as responses of pre-service teachers pursuing degree and diploma programmes.

4. Results

4.1. Demographic Information

The study sought to elicit the following information about the respondents: age, gender, educational level,

religious affiliation, and marital status. Concerning the demographic distribution, the outcome of pre-service teachers' responses is presented in Table 1.

Table 1. Background information of pre-service teachers

Variable	N (%)	
Gender	Males	74 (49.3)
	Females	76 (50.7)
Level	200	80 (53.3)
	300	70 (46.7)
Religious Denomination	Christianity	115 (76.7)
	Islamic	35 (23.3)
Type of program	Degree	80 (53.3)
	Diploma	70 (46.7)
Age (years)	Mean (SD)	21.9 (6.4)

With a response rate of 75%, survey questionnaires were delivered to pre-service teachers using Google forms.

Cronbach's alpha determined that the questionnaires were internally consistent for all of the items (0.72). With an average age of 22 years, there were 74 (49%) males and 76 (50.7%) females (see Table 1). The majority of participants (76.7%) are Christians, followed by degree students (53.3%). A good proportion of the respondents (23.3%) were Muslims.

4.2. Effects of Stress on Pre-service Teachers in Colleges of Education

4.2.1. Research Question 1: What Impact do the Effects of Stress Have on Pre-service Teachers in Colleges of Education?

The first research question inquired into the diverse effects of stress on pre-service teachers in colleges of education. Table 2 presents the results of the responses supplied by the respondents. As presented in the Table, almost all respondents (98%) emphatically agreed with all of the consequences of stress presented. Overall, the respondents showed very high effects of stress on the following.

SD=0.50), 'I become restless' (M=4.71, SD=0.47), and 'I lose concentration at times' (M=4.70, SD=0.50). From Table 2, among the effects of stress on students' academic performance, the main issues identified were: 'I feel tired' (M=4.79, SD=0.43), 'I have headaches' (M=4.78, SD=0.43), 'I have difficulty sleeping' (M=4.71, SD=0.50), 'I become restless' (M=4.71, SD=0.47), and 'I lose concentration at times' (M=4.70, SD=0.50).

4.2.2. Research Question 2: What are the Gender Differences in the Effects of Stress Regarding Pre-service Teachers in Colleges of Education?

Research question two sought to ascertain the various effects of stress among pre-service teachers based on gender. Pre-service teachers' responses based on gender are presented in Table 3. There were 74 males and 76 females that took part in the survey. An independent-samples t-test was used to ascertain if there were any variations in the effects of stress between male and female pre-service teachers at the selected colleges of education.

According to a boxplot assessment, there were no outliers in the data.

The effects of stress scores for each level of gender were normally distributed, as shown by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of variances, as determined by Levene's test for equality of variances ($p = .564$). As seen in Table 3, statements on the effects of stress on students' academic performance, which affected students greatly, were 'I have headaches' ($M=4.79, SD=0.43$), 'I feel tired' ($M=4.78, SD=0.43$), 'I have difficulty sleeping' ($M=4.71, SD=0.50$), 'I become restless' ($M=4.71, SD=0.47$), and 'I lose concentration at times' ($M=4.70, SD=0.50$). Even

though the mean effects were high on the statements, there was no significant difference between males and females.

As indicated in Table 3, it was however observed that males and females differed significantly on the following statements on the effects of stress on academic performance of pre-service teachers of colleges of education: 'I get depressed when I get stressed up' ($M=4.68, SD=0.47, p<0.002$), 'I become anxious when I get stressed up' ($M=4.63, SD=0.49, p<0.004$), 'I am less involved with others when I get stressed up' ($M=4.61, SD=0.50, p<0.004$), and 'I lose appetite when I get stressed up' ($M=4.56, SD=0.52$).

Table 2. Percentage Distribution and Mean Ratings of Effects of Stress among Pre-service Teachers in Colleges of Education

Effects	Strongly Agree/Agree	Strongly Disagree/Disagree	Overall Mean (SD)
I have headaches when I get stressed up	100.0	0.0	4.78 (0.43)
I lose appetite when I get stressed up	98.7	1.3	4.56 (0.52)
I feel tired when I get stressed up	100.0	0.0	4.79 (0.43)
I have difficulty sleeping when I get stressed up	99.0	1.0	4.71 (0.50)
I lose concentration at times when I get stressed up	100.0	0.0	4.70 (0.46)
I lose interest in things when I get stressed up	99.0	1.0	4.64 (0.50)
I procrastinate when I get stressed up	99.0	1.0	4.61 (0.50)
I become restless when I get stressed up	99.0	1.0	4.71 (0.47)
I make poor judgments when I get stressed up	100.0	0.0	4.55 (0.53)
I become anxious when I get stressed up	100.0	0.0	4.63 (0.49)
I get depressed when I get stressed up	100.0	0.0	4.68 (0.47)
I get irritated when I get stressed up	100.0	0.0	4.68 (0.47)
I am less involved with others when I get stressed up	99.0	1.0	4.61 (0.50)
I become less motivated when I get stressed up	98.7	1.3	4.67 (0.50)
I become absentminded when I get stressed up	100.0	0.0	0.64)

Statistical significance at $p < 0.05$.

Table 3. Mean Ratings of Effects of Stress among Pre-service Teachers in Colleges of Education by Gender

Effects	Overall Mean (SD)	Male Mean (SD)	Female Mean (SD)	Sig. Level
I have headaches when I get stressed up	4.78 (0.43)	4.80 (0.44)	4.76 (0.43)	0.678
I lose appetite when I get stressed up	4.56 (0.52)	4.62 (0.49)	4.50 (0.55)	0.017*
I feel tired when I get stressed up	4.79 (0.43)	4.77 (0.46)	4.80 (0.40)	0.155
I have difficulty sleeping when I get stressed up	4.71 (0.50)	4.69 (0.47)	4.72 (0.53)	0.748
I lose concentration at times when I get stressed up	4.70 (0.46)	4.72 (0.45)	4.68 (0.47)	0.396
I lose interest in things when I get stressed up	4.64 (0.50)	4.61 (0.52)	4.67 (0.47)	0.092
I procrastinate when I get stressed up	4.61 (0.50)	4.61 (0.52)	4.61 (0.49)	0.681
I become restless when I get stressed up	4.71 (0.47)	4.72 (0.48)	4.71 (0.46)	0.937
I make poor judgments when I get stressed up	4.55 (0.53)	4.66 (0.50)	4.43 (0.53)	0.077
I become anxious when I get stressed up	4.63 (0.49)	4.69 (0.47)	4.57 (0.50)	0.004*
I get depressed when I get stressed up	4.68 (0.47)	4.74 (0.44)	4.62 (0.49)	0.002*
I get irritated when I get stressed up	4.68 (0.47)	4.66 (0.48)	4.70 (0.46)	0.361
I am less involved with others when I get stressed up	4.61 (0.50)	4.68 (0.47)	4.54 (0.53)	0.004*
I become less motivated when I get stressed up	4.67 (0.50)	4.64 (0.54)	4.70 (0.46)	0.073
I become absentminded when I get stressed up	4.61 (0.64)	4.66 (0.65)	4.57 (0.64)	0.400

Statistical significance at $p < 0.05$.

Table 4. Mean Ratings of Effects of Stress among Pre-Service Teachers by Programme

Effects	Overall Mean (SD)	Degree Mean (SD)	Diploma Mean (SD)	Sig. Level
I have headaches when I am stressed	4.78 (0.43)	4.80 (0.40)	4.76 (0.46)	0.085
I lose appetite when I am stressed	4.56 (0.52)	4.54 (0.53)	4.59 (0.53)	0.611
I feel tired when I am stressed	4.79 (0.43)	4.81 (0.39)	4.76 (0.46)	0.038*
I have difficulty sleeping when I am stressed	4.71 (0.50)	4.72 (0.45)	4.69 (0.55)	0.244
I lose concentration at times when I am stressed	4.70 (0.46)	4.66 (0.48)	4.74 (0.44)	0.033*
I lose interest in things when I am stressed	4.64 (0.50)	4.61(0.52)	4.67 (0.47)	0.112
I procrastinate when I am stressed	4.61 (0.50)	4.58 (0.52)	4.64 (0.48)	0.082
I become restless when I am stressed	4.71 (0.47)	4.75 (0.44)	4.67 (0.50)	0.035*
I make poor judgments when I am stressed	4.55 (0.53)	4.54 (0.53)	4.56 (0.53)	0.902
I become anxious when I am stressed	4.63 (0.49)	4.66 (0.47)	4.59 (0.50)	0.069
I get depressed when I am stressed	4.68 (0.47)	4.69 (0.47)	4.67 (0.47)	0.677
I get irritated when I am stressed	4.68 (0.47)	4.65 (0.48)	4.71 (0.46)	0.940
I am less involved with others when I am stressed	4.61 (0.50)	4.56 (0.52)	4.66 (0.48)	0.026*
I become less motivated when I am stressed	4.67 (0.50)	4.59 (0.53)	4.74 (0.47)	0.004*
I become absentminded when I am stressed	4.61 (0.64)	4.52 (0.76)	4.71 (0.46)	0.003*

Statistical significance at $p < 0.05$.

4.2.3. Research Question 3: What are the Differences in the Effects of Stress among Degree And Diploma Pre-service Teachers in Colleges of Education?

The third research question assessed the impact of stress on pre-service teachers based on the programme they are pursuing. Table 4 displays the results of the responses regarding the respondents' programme of study. There were 80 degree and 70 diploma pre-service teachers that took part in the survey. An independent-samples t-test was run to ascertain if there were any variations in the effects of stress between degree and diploma pre-service teachers at the selected colleges of education. According to a boxplot assessment, there were no outliers in the data. The effect of stress scores was normally distributed for each programme as determined by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of variance, as determined by Levene's test for equality of variances ($p = .792$).

The impacts of stress were evaluated among degree and pre-service diploma teachers to determine how they perceived the effects. The data analysis reveals that 'I have headaches when I am stressed' is the most common response among degree and diploma students (degree, $M=4.80$, $SD=0.40$; diploma, $M=4.76$, $SD=0.46$). There was, however, no statistically significant difference between them ($p > 0.085$). This assumes that academic activities, whether for a degree or diploma, are a source of stress for students. 'I feel exhausted when I am stressed' was indicated as a significant effect of stress for both degree ($M=4.81$, $SD=0.39$) and diploma ($M=4.76$, $SD=0.46$) students, with degree students feeling more tired than diploma students ($p = 0.038$). This is not surprising given that degree students have a more extensive curriculum to cover than diploma students, but both are handled by the same tutors and use the same facilities.

At $p=0.033$, with regards to 'I lose concentration at times when I am stressed,' there was also a significant difference between degree ($M=4.66$, $SD=0.48$) and diploma ($M=4.74$, $SD=0.44$) students. Other findings

include: 'I become restless when I am stressed' for degree ($M=4.75$, $SD=0.48$) or diploma ($M=4.67$, $SD=0.50$) students at $p < 0.035$; 'I am less involved with others when I am stressed', degree ($M=4.56$, $SD=0.52$) or diploma ($M=4.66$, $SD=0.48$) students at $p < 0.026$; 'I am less motivated when I am stressed', for degree ($M=4.59$, $SD=0.53$) or diploma ($M=4.74$, $SD=0.47$) students at $p < 0.004$; and 'I become absentminded when I am stressed', for Degree ($M=4.52$, $SD=0.76$) or diploma ($M=4.71$, $SD=0.46$) students at $p < 0.003$.

4.3. Coping Strategies Pre-service Teachers in Colleges of Education Employ to Manage Stress

4.3.1. Research Question 4: What Coping Strategies do Pre-service teachers in Colleges of Education Employ to Manage Stress?

The fourth research question dealt with the various coping mechanisms used by pre-service teachers when they are stressed. Table 5 shows the results of responses supplied by pre-service service teachers.

Stress management is critical for avoiding the detrimental effects of long-term stress. Students employ a variety of coping mechanisms to cope with stress. As shown in Table 5, the majority of the pre-service teachers used positive coping mechanisms. For instance, "doing something about the situation/taking action to reduce stressors" ($M=4.71$, $SD=0.68$), "getting emotional support/advice from friends and family" ($M=3.22$, $SD=0.89$), "Learning to live with the situation" ($M=4.70$, $SD=0.50$), "Refusing to believe it happened, not accepting the situation" ($M=4.74$, $SD=0.44$), and "Praying/meditating" ($M=4.69$, $SD=0.477$). Self-distraction ($M = 4.65$, $SD = 0.51$) such as "watching TV, movies, or listening to music"; "emotional and instrumental support" ($M = 4.66$, $SD = 0.53$); and "giving up the attempt to do anything about the situation" ($M = 4.63$, $SD = 0.68$) were also important coping strategies.

Table 5. Pre-service teachers' coping mechanisms and their Mean Ratings

Category	Strategies	Mean (SD)
Active coping	Taking action to address the situation and reduce the stressor	4.71 (0.68)
Positive reframing	To see the positive side of things occurring and gain knowledge via experience	4.60 (0.88)
Substance abuse	Tobacco, drink, or drugs are used to make you feel better.	2.13 (1.59)
Humour	Laughing at the circumstance	4.17 (1.19)
Given up coping	Relinquishing on trying to make a difference in the circumstance	4.63 (0.68)
Emotional support	Receiving emotional help/advice from others relatives and friends	4.70 (0.50)
Influential help	Receiving assistance and counsel from tutors	4.66 (0.53)
Self-distraction	Doing something to divert my attention away from the issue, such as going to the cinema, shopping, listening to music, or watching television	4.65 (0.51)
Religious conviction	Praying or meditating	4.69 (0.48)
Venting	exhibiting negative emotions: exhibiting rage at things or persons	4.56 (0.37)
Acceptance	Embracing and learning to live with the situation	4.71 (0.45)
Denial	Failing to acknowledge it occurred, and refusing to accept the circumstance	4.74 (0.44)

5. Discussion

The outcome of this study is in line with previous research results, which identified academic burden and difficulties reading textbooks as some of the pressures pre-service teachers face [3,5]. Similarly, a study conducted by [57] revealed low emotions, inability to concentrate, and a lack of temper as the most common symptoms of stress, corroborating the findings of this study. However, [57] study findings differed slightly from this study in the sense that it did not find any effects of the loss of temper or bad mood, but it did find an effect of the inability to concentrate. [58] found with the exception of reduced sleep, found enhanced anxiety, conflicts in relationships, variations in grades, worse health, enhanced partying, weight variation, and mood swings in their investigation. Their findings do not support the present study either. It is also surprising that these pre-service teachers experience financial challenges because they are given allowances by the government to support their upkeep [14].

The outcome of this study indicated that males and females, as well as the different levels, experience some adverse effects of stress. The majority of both genders, as well as the levels, indicated they experience headaches, lose appetite, feel tired, find difficulty sleeping, lose concentration, lose interest in things, procrastinate, become restless, feel anxious, feel depressed, feel irritated, become less involved with others, become less motivated, and make poor judgments. According to a study on stress, depression, stigma, and students conducted by [58] stress can lead to despair, withdrawal from others, feeling pressured, loss of function, and even suicidal thoughts.

We identified some effects of stress similar to those revealed by a study conducted by [35], except for thoughts of suicide. Stress among the pre-service teachers regarding their programme of study was also interrogated. Current research shows that degree and diploma students experience some differences in the effects of stress. For instance, compared with their degree counterparts, pre-service teachers pursuing diploma become less involved with others, less motivated, lose concentration at times, and become absentminded when stressed. This is not surprising because the diploma students have similar grades as the degree students from the senior high school

level, yet the latter had the opportunity to enrol in degree courses as a result of the upgrade of the colleges of education to degree awarding institutions. However, pre-service teachers pursuing degree feel tired and become restless when stressed compared with their diploma counterparts. This could be attributed to the academic demands of their overloaded curriculum.

Regarding religion, the result is unsurprising. Religion plays a significant role in problem-solving among Ghanaians [3], particularly when dealing with challenges that lack societal frameworks to attenuate their negative impacts. Ghanaians are, on the whole, very religious and a little superstitious, and they tend to assign a spiritual reason to problems that they don't seem to be able to solve. The issue of watching TV, movies, or listening to music; emotional and influential help, such as getting help and counsel from tutors, cannot be overemphasised. These findings support a study conducted by [53] study, which found that students use five important ways to cope with stress: internet browsing, sleeping and resting, watching TV or movies, and instant messaging. In all, it is worthy of note that pre-service teachers use positive coping strategies to manage stress.

6. Conclusion

When people are stressed, they report feeling weary, losing attention and interest in tasks, having headaches, feeling anxious, and having difficulties sleeping. Less interaction with others, lack of motivation and lack of hunger, as well as absentmindedness and making incorrect judgements, were the most noticeable impacts. Respondents used a variety of coping mechanisms when they were stressed. The findings revealed the top five coping strategies of the respondents were: "doing something about the situation/ taking action to reduce stressors," "getting emotional support/advice from friends and family," "learning to live with the situation," "refusing to believe it happened," and "praying/meditating". Self-distraction, such as "doing something to divert my attention away from the issue, such as going to the cinema, shopping, listening to music, or watching television"; emotional and instrumental support, such as "seeking help

and advice from tutors”; and “giving up on trying to improve the situation” are among the other coping techniques stated by respondents. These strategies adopted by the pre-service teachers suggest that they employ adaptive coping strategies more than maladaptive ones. When a pre-service teacher, regardless of age or level, is exposed to excessive amounts of stress or chronic stress, it can impair their ability to learn, recollect, and pass exams and contribute to poor physical, psychological, and mental well-being. According to the study, when people are stressed, they report feeling weary, losing focus and interest in activities, getting headaches, feeling anxious, and having trouble sleeping. While the majority of the pre-service teachers used positive coping strategies, many were also learning to live with and accept the stress situation. However, it was discovered that a few students indulged in substance abuse to cope with stress, which is quite regrettable for health reasons. The research’s results will be added to the body of stress-related literature, perhaps benefiting learners in finding answers to their problems and allowing them to enjoy their learning without worry or anxiety.

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