

## Stress And Coping Strategies Among Nursing Students: And Impact on The Immune System

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Copyright © 2026 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.	<p><i>This was a cross-sectional descriptive study among 63 undergraduate nursing students of the West End University, Accra, Ghana, to ascertain stress and coping strategies among nursing students: impact on the immune system. Majority of them are of the West End University college, 59(93.7%), who were mostly aged 18-22 years old, 33(52.4%), mostly females, 57(90.5%) and unmarried. They were mostly neutral about academic workload being overwhelming, 30(47.8%), majority agreed that clinical practice requirements are stressful, 24(39.1%), they strongly agreed and agreed that financial challenges increase stress, 35(56.5%) and 22(34.8%) respectively, and is similar for language barrier contributing to stress, with cultural differences mostly contributing to stress 14(21.7%) and majority been neutral about having difficulty balancing academic and personal life, 21(34.8%). Many of them experienced headaches, fatigue or body weakness, 30(47.8%), many rarely and sometimes find it hard to concentrate in class, 25(39.2%) and 22(34.8%) respectively, the stress rarely negatively affected the academic performance of many, 22(34.8%), many also never or sometimes experienced sleep disturbances, 17(30.4%) and 16(26.1%) respectively, while most of them were never, rarely or sometimes withdrawn from friends or social activities, 16(6.1%). The coping strategies of nursing students to stress was mostly to pray or engage in spiritual/religious activities, 23(34.8%), many sometimes or always talk to friends, colleagues or family members for support, 25(39.1%) and 23(34.8%) respectively and majority rarely sought help or advise from academic advisors, 30(43.5%). Similarly, many sometimes or rarely participated in sports or physical activities to relieve stress, 29(47.8%) and 23(34.8%) respectively, majority rarely employed relaxation techniques, such as sleep to reduce stress, 27(39.1%), majority always engaged in lectures to reduce stress, 23(34.8%) and mostly often or always try to manage their time effectively during stress, 27(39.1%) and 28(43.5%) respectively. In conclusion, the study observed that there were different sources of stress among undergraduate nursing students, such as academic workload, finance and clinical training requirements, with the effects of such stress being headaches, lack of concentration and sleep disturbances, while the coping strategies were mainly engagement in spiritual exercise, support from family, friends and colleagues, and relaxation.</i></p>
	<b>Keywords:</b> Nursing, students, stress, coping, strategies, training.

### Introduction

Professional healthcare courses are often associated with stressful and exhaustive procedures and regimens, especially during training. It is to ensure that the product of such training is not only qualified, but well equipped to assuage the challenges that may present itself during

practice. The nursing student is usually exposed to these stressful and rigorous situations and expected to adapt to them (Nebhinani, Kumar, Parihar & Rani, 2019) in order to withstand such rigours when they present themselves in the course of practice.

The nursing profession is regarded as challenging, and this commences as early as from training, where stringent measures are formulated and implemented (Nebhinani *et al.*, 2019), to ensure that the quality and standard of healthcare delivery is maintained. Nursing profession is occasionally regarded as one of the most demanding and stressful professions in the world (Ching, Cheung, Hegney & Rees, 2020). The challenges are often associated with diverse stressors, which on their own require coping strategies to navigate, as failure can lead to consequences such as psychological breakdown.

Stress is a dynamic interaction between a person and the environment (Alharbi, 2023). It is a collection of the occurrences or conditions in the environment of a person that puts the mental, physical and psychological capabilities to test. It can be perceived as a collection of contemporary lifestyles, with a negative effect and adversely impairing the performance of an individual (Alharbi, 2023). Stress is documented as one of the most significant challenges of the contemporary society (Madian, Abdelaziz & Ahmed, 2019). It is defined by Selye (1976), as the non-specific response of the body to any kind of demand (Hamadi, Zakari, Jibreel, Al Nami, Smida & Ben Haddad, 2021).

The consequence of the various stressors and the often poor coping strategies has elicited interest among researchers from public health, clinical medicine and the sociology disciplines. According to Alharbi (2023), the student nurse is trained in diverse theoretical and clinical procedures in preparation for the future expectation and to ensure that when such and similar situations present in the course of practice, they can readily cope, having encountered and navigated through it in their younger years of training.

A study revealed that the prevalence of stress among nursing students ranges from 56% to 72%, depending on the environment and equipment available to work with, and this stress commenced from their earliest years of training, being an inherent component of the processes and procedures that culminate in their training as qualified nurses (Pulido-Martos, Augusto-Landa & Lopez-Zafra, 2012). Upon completion of their training, many nurses may have developed coping strategies that will enable them adapt to different kinds of stress or stressors. This could have been imbibed right from their training days as students. Lavoie-Tremblay, Sanzone, Aubé & Paquet (2022) assert that the diverse principles, theories and procedures associated with the nursing training, is in fact, designed to ensure that the nurse can wade off majority of the stressful conditions they may encounter following the successful completion of their training.

Clinical practice, of which almost all nursing students are inclined towards, is a challenging area of health care practice and this may be attributed to its peculiarity and the

stress associated with it. Some authorities view clinical practice (including nursing practice) as the specialties entrenched with stress and the nursing student must develop coping strategies to effectively mitigate the stress (Labrague, McEnroe-Petitte, Gloe, Thomas, Papathanasiou & Tsaras, 2017).

In a study conducted by Chan, So & Fong (2009) to ascertain the causes and level of stress among 205 nursing students, they asserted a moderate level of stress ( $M=2.10$ ;  $SD=0.44$ ) during nursing training by their trainers. They reported that the observed stress was mainly associated with inadequate knowledge and proper skills of procedures required of them. Another related cross-sectional study by Manti, Mastrogiovannis, Mantzorou, Adamakidou, Mantoudi, Stefanidou & Timmins (2022) among 424 Greek nursing students on the causes of stress and their coping mechanisms revealed that 81.7% complained about financial pressure contributing to their feeling of stress. Yet another related study by McCarthy, Trace, O'Donovan, Brady-Nevin, Murphy, O'Shea & O'Regan (2018) revealed that there was stress in virtually all aspects of nursing training, including nursing education, with suggestions that nursing educators should be aware of this and make practicable approach to lighten such for their trainees, as this will transcend to practice.

Stress impacts the immune system negatively, depending mainly on the nature, intensity and duration. According to a meta-analysis of more than 300 empirical studies emanating from different parts of the world, Segerstrom and Miller (2004) inference that acute stress (lasting minutes) is associated with potential adaptive upregulation of natural immunity and down-regulation of specific immunity, brief natural stressors (as is tenable in exams and related to students) tends to suppress cellular immunity but preserves humoral immunity, while chronic stressors suppressed both cellular and humoral immunity. It is to note that many of the stressors encountered by nursing students are of the acute type.

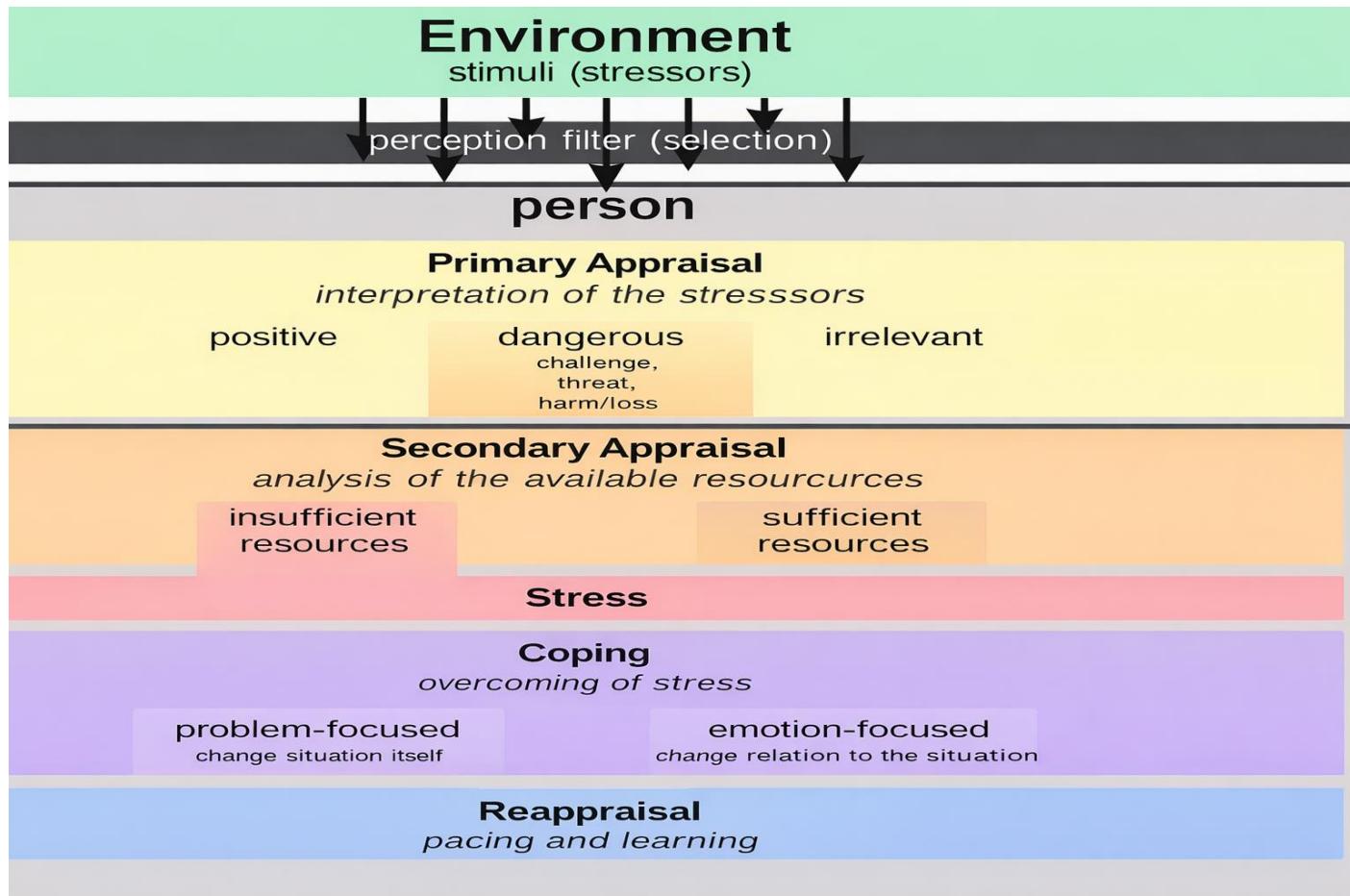
Nursing students employ diverse coping mechanisms to overcome the stress posed by their training (Shdaifat, Jamam & Alamer, 2018). Both cognitive and behavioural modifications can be adopted to quell the internal and external pressures that expose nursing students to stress. Stress can present as thoughts, emotions, sensations and behaviours. For instance, Alharbi (2023) suggested seeking social support from trained professionals and other colleagues, in order to understand the peculiarities and differences in some forms of stress. Social support protects against stress by either reducing it or enabling individuals respond better to a stressful situation in a manner that is healthy (Lavoie-Tremblay *et al.*, 2022). This study thus, sought to understand how nursing students at the West End

College, Accra, Ghana, experience stress, the common types of stress and the coping mechanisms they employ to mitigate such stress or stressors.

Over the last six decades, the transactional theory of stress and coping, formulated by Lazarus and Folkman in 1966, has been significant to the development of an understanding of stress and coping among nursing trainees and other healthcare professionals (Biggs, Brough & Drummond, 2017). The theory demonstrates that some significant life experiences impact the emotions of people. It posits that

stress is usually due to an interaction between people and the environment. It assesses the stress-coping mechanism interaction at three levels; primary, secondary and tertiary.

The transactional theory postulates that before an individual feels and reacts to stress, two stages of situational appraisal would ensue. Stress then follows the appraisal of the situation experienced. A coping approach will, thus, be adopted to handle the stress, which is the cognitive and behavioural approaches employed to deal with the stress or stressful situation (Kivak, 2020).



Source: Grieze (2017)

## Methodology

A descriptive, cross-sectional study design, employing the use of semi-structured questionnaire with four sections comprising of socio-demographic characteristics, stress-related attributes, coping strategies for stress and medical history was used to elicit responses from the participants, who were mainly international nursing students training at the West End University College, Accra, Ghana. The students were mostly from Sierra Leone, Liberia, Togo and Nigeria.

A purposeful sampling technique was used, with the sample size obtained via a data saturation level, the inclusion criteria was being a nursing student (affirmed by a sighting of their Student Identification card, which also stipulates

individual matriculation numbers) that had been a student for six months in the institution, as well as a neighbouring institution training nurses (Oanihiim Christian University, which was done to boost the sample size of the participants) while those that expressed lack of interest in the study were excluded. The reliability of the study was ascertained by conforming to the four criteria stipulated by Lincoln and Guba (1985), which includes; credibility, confirmability, transferability and dependability (Polit & Beck, 2016). Ethical approval for the study was sought from the institution under consideration, while consent was obtained from each participant before enrollment into the study.

**Table 1. Socio-demographic characteristics (n= 63)**

Variable	Frequency (n)	Percent (%)
<b>Name of Institution</b>		
Oahinim Christian University	4	6.3
West End University	59	93.7
<b>Age (years)</b>		
18-22	33	52.4
23-27	19	30.2
28-32	4	6.4
≥33	7	11
<b>Gender</b>		
Male	6	9.5
Female	57	90.5
<b>Marital status</b>		
Single	57	90.5
Married	6	9.5
<b>Level of study</b>		
Year 1	4	6.3
Year 2	16	26.1
Year 3	7	11.1
Year 4	36	56.5
<b>Country of origin</b>		
Nigeria	46	73
Liberia	6	9.5
Ghana	11	17.5
<b>Duration of stay in Ghana</b>		
Less than 1 year	11	17.4
1-2 years	8	13
3-4 years	25	39.1
≥ 4 years	19	30.4

The socio-demographic characteristics of the study revealed that majority of participants are of the West End University college, 59(93.7%). This is expected, as it is the focus of the study. They were mostly aged 18-22 years old, 33(52.4%), followed by those aged 23-27 years old, 19(30.2%), while majority were females, 57(90.5%) and is similar for the marital status of being single. They were mostly in their fourth year of study, 36(56.5%), followed by those in year two, 16(26.1%), while majority were of Nigerian descent, 46(73.0%), with the least being Liberian students, 6(9.5%) and majority had been in Ghana for 3-4 years, 25(39.1%) and the least had stayed for 1-2 years, 8(13.0%).

**Table 2. Sources of stress**

Variables	Frequency (n)	Percent (%)
Academic workload is overwhelming		
Neutral	30	47.8
Agree	25	39.1
Strongly agree	8	13
<b>Clinical practice requirements are stressful</b>		
Disagree	11	17.4
Neutral	14	21.7
Agree	24	39.1
Strongly agree	14	21.7
<b>Financial challenges increase my stress</b>		
Disagree	3	4.3
Neutral	3	4.3
Agree	22	34.8
Strongly agree	35	56.5

<b>Language barriers contribute to my stress</b>		
Strongly disagree	3	4.3
Disagree	3	4.3
Neutral	15	26.1
Agree	21	34.8
Strongly agree	21	34.8
<b>Cultural differences affect my adaptation</b>		
Strongly disagree	7	13
Disagree	14	21.7
Neutral	14	21.7
Agree	14	21.7
Strongly agree	14	21.7
<b>Homesickness and separation from family cause stress</b>		
Strongly disagree	7	13
Disagree	17	26.2
Neutral	11	17.4
Agree	14	21.7
Strongly agree	14	21.7
<b>Difficulty balancing academic and personal life causes stress</b>		
Strongly disagree	3	4.3
Disagree	11	17.4
Neutral	21	34.8
Agree	17	26.1
Strongly agree	11	17.4
<b>Limited social support in Ghana increases stress</b>		
Disagree	11	17.4
Neutral	24	39.1
Agree	11	17.4
Strongly agree	17	26.1

Table 2 is the sources of stress, which reveals that most students were neutral about academic workload being overwhelming, 30(47.8%), majority agreed that clinical practice requirements are stressful, 24(39.1%), with majority also strongly agreeing and agreeing that financial challenges increase stress, 35(56.5%) and 22(34.8%) respectively, and is similar for language barrier contributing to stress. Cultural differences contributing to stress was equally disagreed, agreed and strongly agreed by 14(21.7%) respondents each, while homesickness was mostly disagreed, 17(26.2%), with majority been neutral about having difficulty balancing academic and personal life, 21(34.8%) and majority disagreeing that limited social support in Ghana increases stress, 24(39.1%).

**Table 3. Effects of stress**

Variables	Frequency (n)	Percent (%)
<b>I experience headaches, fatigues or body weakness</b>		
Rarely	14	21.7
Sometimes	30	47.8
Often	14	21.7
Always	5	8.8
<b>I find it hard to concentrate in class</b>		
Never	8	13
Rarely	25	39.2
Sometimes	22	34.8
Often	8	13
<b>I feel anxious or depressed</b>		
Never	16	26.1
Rarely	17	26.7
Sometimes	14	21.7

Often	8	13
Always	8	13
<b>My academic performance is negatively affected</b>		
Never	16	26.1
Rarely	22	34.8
Sometimes	14	21.7
Often	8	13
Always	3	4.3
<b>I experience sleep disturbances</b>		
Never	17	30.4
Rarely	11	17.4
Sometimes	16	26.1
Often	11	17.4
Always	8	13
<b>I withdraw from friends or social activities</b>		
Never	16	26.1
Rarely	16	26.1
Sometimes	16	26.1
Often	11	17.4
Always	4	8.7

The effects of stress on nursing students reveals that majority experienced headaches, fatigue or body weakness, 30(47.8%), many of them rarely and sometimes find it hard to concentrate in class, 25(39.2%) and 22(34.8%) respectively, the academic performance of many was rarely negatively affected, 22(34.8%), many also never or sometimes experienced sleep disturbances, 17(30.4%) and 16(26.1%) respectively, while most of them were never, rarely or sometimes withdrawn from friends or social activities, 16(6.1%).

**Table 4. Coping strategies of stress**

Variable	Requency (n)	Percent (%)
<b>I pray or engage in spiritual/religious activities when stressed</b>		
Never	4	8.7
Rarely	3	4.3
Sometimes	15	21.7
Often	23	34.8
Always	18	30.4
<b>I talk to my friends, colleagues or family for support</b>		
Rarely	11	17.4
Sometimes	25	39.1
Often	4	8.7
Always	23	34.8
<b>I seek help from lecturers or academic advisors</b>		
Never	18	30.4
Rarely	30	43.5
Sometimes	11	17.4
Always	4	8.7
<b>I participate in sports or physical exercise to relieve stress</b>		
Never	8	13
Rarely	23	34.8
Sometimes	29	47.8
Always	3	4.3
<b>I use relaxation techniques (sleep, breathing, meditation, etc)</b>		
Never	8	13
Rarely	27	39.1
Sometimes	16	26.1

Often	4	8.7
Always	8	13
<b>I engage in leisure activities (music, movies, social outings)</b>		
Never	3	4.3
Rarely	8	21.7
Sometimes	18	30.4
Often	11	17.4
Always	23	34.8
<b>I try to manage my time effectively</b>		
Rarely	4	8.7
Sometimes	4	8.7
Often	27	39.1
Always	28	43.5
<b>I seek professional counseling or mental health services</b>		
Never	27	39.1
Rarely	23	34.8
Sometimes	8	13
Always	8	13

In the coping strategies of nursing students to stress, it was observed that many of them prayed or engaged in spiritual/religious activities to relieve stress, 23(34.8%), many of them also sometimes or always talk to friends, colleagues or family members for support when they are stressed, 25(39.1%) and 23(34.8%) respectively, majority rarely sought help or advise from academic advisors, 30(43.5%), many also sometimes or rarely participated in sports or physical activities to relieve stress, 29(47.8%) and 23(34.8%) respectively, while majority rarely employed relaxation techniques, such as sleep to reduce stress, 27(39.1%). It was also observed that majority always engaged in lectures to reduce stress, 23(34.8%), most of them often or always try to manage their time effectively during stress, 27(39.1%) and 28(43.5%), and many of them rarely or never seek professional counseling or mental health services when stressed, 27(39.1%) and 23(34.8%) respectively.

#### **Additional responses from study participants**

According to the participants, the greatest sources of stress for international nursing students in Ghana are as follows: language barrier, exchange rate, financial stress, balancing work with school and academic activities. The coping strategies they find most effective in managing the stress included; sleeping, deep breathing, praying and facing it head-on, talk to people, engage in school activities, talk to God, listen to music, isolation, relaxing and meditation. On this premise, they recommend that the institution can do better to support international students by: making hostel accommodation conducive and befitting, reduce the school fees for them, treat them with honour, provide feasible job opportunities, reduce academic activities/workload and provide flexible academic sessions.

#### **Discussion**

The socio-demographic characteristics of the study revealed that majority of participants are of the West End University college, 59(93.7%). This is expected, as it is the focus of the study. They were mostly aged 18-22 years old, 33(52.4%), which is in agreement with Pulido-Martos *et al.*, (2012) as the age in which many persons gain admission for undergraduate studies. They were mostly females, 57(90.5%) and is similar for their single marital status. Another concept that is also in agreement with the observation of Pulido-Martos *et al.*, (2012). They were mostly of Nigerian descent, 46(73.0%), which is in tandem with the observations of Lavoie-Tremblay *et al.* (2022) regarding Nigerian students comprising the bulk of international students in most tertiary institutions in Africa, and occasionally, in some other regions of the world.

The sources of stress in this study revealed that most students were neutral about academic workload being overwhelming, 30(47.8%), majority agreed that clinical practice requirements are stressful, 24(39.1%), majority also strongly agreed and agreed that financial challenges increases stress, 35(56.5%) and 22(34.8%) respectively, and is similar for language barrier contributing to stress. These observations are in agreement with Labrague *et al.* (2017) observed in their study, for which they posited that, except, the language of teaching is same or similar or same with that of the student, it will initially form a barrier, thus, stress for the student. Also, cultural differences were mentioned to contribute to stress 14(21.7%), while homesickness was mostly disagreed, 17(26.2%), with majority been neutral about having difficulty balancing academic and personal life, 21(34.8%). The observations also agreed with the findings of Chan *et al.* (2009) in their

study, in which it was specific explained that culture played a significant role in the academic progress of an individual, but could also become a hindrance in attaining smooth sail during academic training.

Regarding the effects of stress on the training of nursing students, it was revealed that majority experienced headaches, fatigue or body weakness, 30(47.8%), many rarely and sometimes find it hard to concentrate in class, 25(39.2%) and 22(34.8%) respectively, the academic performance of many was rarely negatively affected, 22(34.8%), many also never or sometimes experienced sleep disturbances, 17(30.4%) and 16(26.1%) respectively, while most of them were never, rarely or sometimes withdrawn from friends or social activities, 16(6.1%). In a study conducted by McCarthy *et al.* (2018) they reported that, although, students may present with headaches, fatigues and similar symptoms when stressed, it rarely affects their sleep, making this to agree with the finding of this study.

The coping strategies of nursing students to stress, revealed that many prayed or engaged in spiritual/religious activities, 23(34.8%), many sometimes or always talk to friends, colleagues or family members for support, 25(39.1%) and 23(34.8%) respectively and majority rarely sought help or advise from academic advisors, 30(43.5%). Almost all of the observations in this study were in consonance with those of Segerstrom and Miller (2004), implying that setting may not play a significant role in altering the coping strategies among students. Many respondents also sometimes or rarely participated in sports or physical activities to relieve stress, 29(47.8%) and 23(34.8%) respectively and majority rarely employed relaxation techniques, such as sleep to reduce stress, 27(39.1%). Shdaifat *et al.* (2018) observed in their study that most students indulge in drinking alcohol or partying, as a way of getting out of stress, rather than sleeping, which they feel will compound the situation. Thus, the later observations are of divergence with those of this current study. This study also observed that majority always engaged in lectures to reduce stress, 23(34.8%), most of them often or always try to manage their time effectively during stress, 27(39.1%) and 28(43.5%), and many rarely or never seek professional counseling or mental health services when stressed, 27(39.1%) and 23(34.8%) respectively. These observations were also in agreement with those of Alharbi (2023), but for engaging in lectures to relieve stress, in which it differed.

## Conclusion

This study X-rayed the different kinds of stress, their effects and the coping strategies among international nursing students in Ghana. The sources of stress were mainly

academic workload, finance and clinical training requirements, while the effects of such stress on the students were mainly headaches, lack of concentration and sleep disturbances, with the coping strategies for such stressor mainly being engagement in spiritual exercise, support from family, friends and colleagues, and relaxation. It is thought that providing a conducive environment, attenuating the school fee to affordable and providing job opportunities will mitigate these stress and improve the study experience of international students.

## Recommendations

1. Similar studies on foreign students should be conducted in other African countries.
2. Institutions should enthroned approaches that will enable their foreign students cope with stress and stressors while they are in training.

## Limitations

There were no visible limitations during the study, but for the unanticipated inclusion of some Ghanaian students, who actually had dual ancestry.

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