

## Impact of stress among students during Nursing Education

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### ABSTRACT

The demanding and competitive nature of nursing education can lead to high levels of stress, affecting students' mental and physical well-being. The article highlights the unique stressors faced by nursing students, including heavy workloads, clinical placements, cultural expectations, and social and economic factors. Understanding these stressors is essential for developing targeted interventions to support student well-being and academic success.

The article also explores the influence of stress on learning, emphasizing the negative effects of stress on memory, motivation, and academic achievement. It discusses the Yerkes-Dodson Law, which suggests that moderate levels of stress can enhance focus and learning, while excessive stress impairs cognitive function. Stress management techniques and coping mechanisms are highlighted as important strategies for optimizing learning potential.

The article concludes by emphasizing the need for further research to explore effective stress-reduction strategies within educational settings and to identify individual differences in stress responses among nursing students. By addressing stress and promoting well-being among nursing students, this research aims to contribute to the development of a healthier and more resilient nursing workforce in Sri Lanka, ultimately improving patient care.

## Introduction

In contemporary education, students must negotiate a challenging and complicated academic environment (Harrison & Owens, 2018). Even though education can lead to both professional and personal improvement, it can also be a major cause of stress (Chernomas & Shapiro, 2013). WHO (2023) defined stress as a state of worry or mental tension caused by a difficult situation.

The demanding and competitive educational environments cause stress among students which has detrimental effects on students' mental and physical health (Cook & Crewther, 2019). Understanding the prevalence and sources of this stress is crucial for developing effective interventions to foster a positive learning environment and promote student success (Moscaritolo, 2009).

Since the nursing profession is a noble calling, demanding both intellectual and deep compassion, the path to becoming a nurse is often accompanied with stress. Nursing students face a multitude of challenges, from demanding academic coursework to the emotional intensity of clinical placements. This constant pressure can take a significant toll on their mental and physical well-being (Evans & Kelly, 2004). Nursing students around the world face a demanding academic environment, but the specific stressors they encounter can vary depending on cultural and educational contexts. In Sri Lanka, aspiring nurses navigate a unique set of challenges that contribute to high-stress levels (Jagoda & Rathnayake, 2021).

Two different studies at the University of Peradeniya and the University of Sri Jayewardenepura suggested a significant prevalence of stress among Sri Lankan nursing students, with studies reporting moderate to severe levels in a majority of participants (Damayanthi, 2014; Nasath & Ilankoon, 2022). This highlights the need for a focused exploration of the factors contributing to stress reference to the Sri Lankan Nursing students.

Several factors within the Sri Lankan nursing education system likely contribute to student

stress (Jagoda & Rathnayake, 2021). The nursing curriculum demands a heavy workload and extensive theoretical knowledge acquisition. Additionally, cultural expectations of academic excellence can add significant pressure on students. Beyond academics, Sri Lankan nursing programs often place a strong emphasis on clinical placements, where students confront real-world patient care scenarios. This exposure can be emotionally demanding, especially for those encountering challenging medical situations or ethical dilemmas for the first time (Jagoda & Rathnayake, 2021). Furthermore, social and economic factors specific to Sri Lanka might exacerbate stress. Financial constraints, limited access to resources, and a competitive educational environment can all add to the burden faced by students (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2011).

This review explores the conceptualizing of stress among nursing students and how stress influences on their learning.

## Influence of Stress on Learning

Stress is highly prevalent among students in the context of higher education. Exams, deadlines, and interpersonal conflicts can all contribute to heightened stress levels, which research suggests can significantly impact the learning process (Bayram & Bilgel, 2008).

Existing evidence highlights the detrimental effects of stress on learning. Stress hormones like cortisol can impair memory consolidation, making it difficult to retain new information (Wolf, Atsak, de Quervain, Roozendaal, & Wingenfeld, 2016). Studies suggest that stress disrupts the formation of new memories and the retrieval of existing ones, potentially leading to academic underperformance (Sandi & Pinelo-Nava, 2007).

Chronic stress can also lead to decreased motivation and engagement in learning. Students experiencing learned helplessness, a feeling of powerlessness in the face of perceived uncontrollable stressors, may exhibit reduced effort and a decline in academic achievement (Sandi & Pinelo-Nava, 2007).

## Stress Threshold

The Yerkes-Dodson Law (1908) proposes an inverted U-shaped relationship between stress and performance. Moderate levels of stress can enhance focus and learning, while extreme stress has the opposite effect. This suggests that a certain level of stress might be beneficial, motivating individuals to focus and prioritize learning tasks. However, exceeding this threshold leads to a decline in cognitive function (Corbett, 2015).

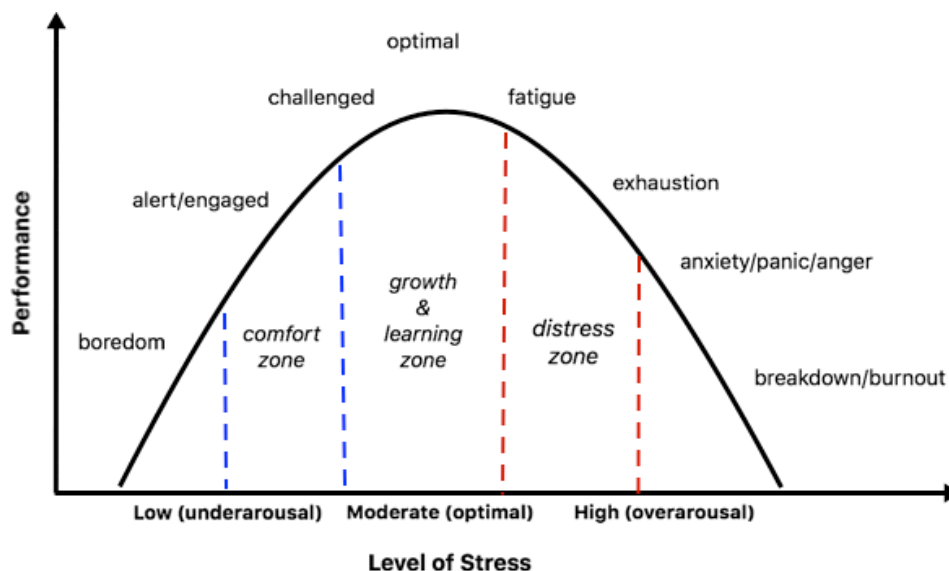


Figure 1: Yerkes-Dodson Law

## Importance of Stress Management

Given the negative impacts of stress on learning, research emphasizes the importance of stress-management techniques for students and educators alike. Developing healthy coping mechanisms like exercise, relaxation techniques, and time management can help individuals maintain stress within a manageable range, optimizing their learning potential (Berger, 1994).

Stress poses a significant challenge to learning and academic achievement. Understanding the mechanisms by which stress disrupts memory and motivation can inform the development of educational practices that promote stress management and foster a more supportive learning environment. Further research is needed to explore effective stress-reduction strategies within educational

settings and to identify individual differences in stress responses (Quaedflieg, Stoffregen, Sebalo, & Smeets, 2019).

## Prevalence of stress level among nursing students

Psychosocial stress is a reality for nursing students in the workplace. Based on an analysis of 15 publications with a sample size of 9202, the average stress score for nursing students was 3.70. According to this study, the majority of intern nursing students had

moderate levels of stress (Zheng, 2022). A Chinese study revealed that nursing students perceived medium-level stress. In addition to that, they found that female students had more stress than males (Zheng et al., 2022).

## Associated factors in the development of stress among nursing students

In a study conducted in Iran, gender differences in stress levels among nursing students were observed, with female students reporting higher levels of stress compared to male students. This finding underscores the importance of considering demographic factors in understanding stress among nursing students (Jafari et al., 2019).

Chronic stress can lead to physical, psychological, emotional, and behavioral changes that compromise well-being. It is also thought to be a major risk factor for cardiovascular disease. As a result, in recent decades, several studies have proposed to investigate the physical and psychological

symptoms, coping modes, and factors associated with stress in various contexts and population groups. Stress arises from an individual's interaction with environmental factors when he perceives challenging situations as exceeding his capacity for coping (Bublitz et al., 2016).

Five factors associated with the development of stress among nursing students are environmental factors; intrapersonal factors; academic factors; clinical factors and interpersonal factors (Sharma & Kaur, 2011). Environmental factors emphasize the perceived stress level because of living conditions, insufficient telephone facilities, improper safety and security, lack of accessibility for food and absence of recreational facilities. The term intrapersonal facilities refers changes in eating pattern, getting marriage or engagement, home sickness, altered sleep patterns, having new responsibilities for parent's expectations, financial problems and altered religious beliefs. Few vacations, lack of leisure time, heavy burden with study, inability to concentrate in studies, scoring low due to poor academic performances etc. can be considered under the academic factors. As well pressure on performing procedures, fear of doing mistakes, limited time, facing different kind of patients and lack of experiences are considered under the clinical factors. Interpersonal factors are social activity changes, fight with close ones, inadequate cooperation with peers, lack of intimacy etc. (Gomathi & Jasmindebora, 2017).

Labrague et al., (2017) found that academic-related stressors, such as workload and examinations, were significant contributors to stress in Philippines. Similarly, Saipanish (2003) investigated stress among nursing students in Thailand and identified clinical-related stressors, such as patient care responsibilities and fear of making mistakes, as prominent sources of stress.

### **The impacts of stress among nursing students**

Regardless of physical, mental, and behavioral problems, stress causes restrain the ability of a

nursing student to meet their academic objectives. Chronic stress or long-term stress among nursing students can lead to a variety of health issues, including burnout, chest pain, an irregular heartbeat, difficulty in concentrating during studies, and sleep disturbances (Khamisa, Oldenburg, Peltzer, & Ilic, 2015).

Stress can affect the learning process of a nursing student in various ways - lack of attention; decreased self-esteem; less confidence; disorganized thoughts; diminished sense of meaning in life; lack of control or the need for too much control. Furthermore, the behaviors of the victims can be altered as poor socialization, substance abuse, eating too much or too little, injuries due to carelessness (Gomathi & Jasmindebora, 2017).

### **Conclusion**

Nursing education is a demanding journey, and nursing students worldwide experience significant stress. However, research suggests that Sri Lankan nursing students face a unique set of stressors compared to their international counterparts.

Studies conducted in Sri Lanka report that majority of nursing students experienced moderate to severe levels (Damayanthi, 2014; Nasath & Ilankoon, 2022). This indicates a critical issue requiring focused attention through new research.

Moreover, existing literature reveal that unmanaged stress can have detrimental effects on students' mental and physical health, leading to burnout, decreased academic performance, and potentially impacting the quality of future patient care. Understanding the factors influencing stress is crucial to developing interventions that promote student well-being and academic success.

### **References:**

Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social Psychiatry and Psychiatric Epidemiology*, 43(8), 667–672. doi:10.1007/s00127-008-0345-x

- Berger, B. G. (1994). Coping with stress: The effectiveness of exercise and other techniques *Quest*, 46(1), 100–119. doi:10.1080/00336297.1994.10484112.
- Bublitz, S., Guido, L. de A., Lopes, L. F. D., & Freitas, E. de O. (2016). Association between nursing students' academic and sociodemographic characteristics and stress. *Texto e Contexto Enfermagem*, 25(4), 1–7. <https://doi.org/10.1590/0104-07072016002440015>
- Chernomas, W. M., & Shapiro, C. (2013). Stress, depression, and anxiety among undergraduate nursing students. *International Journal of Nursing Education Scholarship*, 10(1), 255–266 doi:10.1515/ijnes-2012-0032
- Cook, C. J., & Crewther, B. T. (2019). The impact of a competitive learning environment on hormonal and emotional stress responses and skill acquisition and expression in a medical student domain. *Physiology & Behavior*, 199, 252–257. doi.org/10.1016/j.physbeh.2018.11.027
- Corbett, M. (2015). From law to folklore: Work stress and the Yerkes-Dodson Law. *Journal of Managerial Psychology*, 30(6), 741–752. doi:10.1108/jmp-03-2013-0085
- Damayanthi, H. D. W. T. (2014). Perceived stressors among undergraduate Nursing Students, University of Peradeniya, Sri Lanka. *International Journal of Scientific and Research Publication*, 4(6).
- Evans, W., & Kelly, B. (2004). Pre-registration Diploma Student Nurse Stress and coping measures. *Nurse Education Today*, 24(6), 473–482. doi:10.1016/j.nedt.2004.05.004
- Gomathi, S., & Jasmindebora, S. (2017). Stress and both negative and positive events in our lives such as. *International Journal of Innovative Research and Advanced Studies*, 4(4), 35–38.
- Harrison-White, K., & Owens, J. (2018). Nurse link lecturers' perceptions of the challenges facing student nurses in Clinical Learning Environments: A qualitative study. *Nurse Education in Practice*, 32, 78–83. doi:10.1016/j.nepr.2018.07.012
- Jafari, H., Aghaei, A., & Khatony, A. (2019). Relationship between study habits and academic achievement in students of medical sciences in Kermanshah-Iran. *Advances in Medical Education and Practice*, 10, 637–643. doi.org/10.2147/AMEP.S208874.
- Jagoda, T., & Rathnayake, S. (2021). Perceived stress and learning environment among nursing students: A cross-sectional study. *Collegian*, 28(5), 587–594. doi.org/10.1016/j.colegn.2021.03.003.
- Labrague, L. J., McEnroe-Petitte, D. M., Gloe, D., Thomas, L., Papathanasiou, I. V., & Tsaras, K. (2017). A literature review on stress and coping strategies in nursing students. *Journal of Mental Health*, 26(5), 471–480. doi.org/10.1080/09638237.2016.1244721
- Khamisa, N., Oldenburg, B., Peltzer, K., & Ilic, D. (2015). Work related stress, Burnout, job satisfaction and general health of Nurses. *International Journal of Environmental Research and Public Health*, 12(1), 652–666. doi:10.3390/ijerph120100652.
- Moscaritolo, L. M. (2009). Interventional strategies to decrease nursing student anxiety in the Clinical Learning Environment. *Journal of Nursing Education*, 48(1), 17–23. doi:10.3928/01484834-20090101-08.
- Nasath, S. F., & Ilankoon, I. M. (2022). Stress and resilience and associated factors among nursing undergraduates in the early stages of the COVID-19 pandemic. *International Journal of Public Health Science (IJPHS)*, 11(3), 836. doi:10.11591/ijphs.v11i3.21698
- Pulido-Martos, M., Augusto-Landa, J. M., & Lopez-Zafra, E. (2011). Sources of stress in nursing students: A systematic review of Quantitative Studies. *International Nursing Review*, 59(1), 15–25. doi:10.1111/j.1466-7657.2011.00939.
- Quaedflieg, C. W. E. M., Stoffregen, H., Sebaló, I., & Smeets, T. (2019). Stress-induced impairment in goal-directed instrumental behaviour is moderated by baseline working memory. *Neurobiology of Learning and Memory*, 158, 42–49. doi:10.1016/j.nlm.2019.01.010

Saipanish, R. (2003). Stress among medical students in a Thai medical school. *Medical Teacher*, 25(5), 502–506. doi.org/10.1080/0142159031000136716

Sandi, C., & Pinelo-Nava, M. T. (2007). Stress and memory: Behavioral effects and neurobiological mechanisms. *Neural Plasticity*, 2007, 1–20. doi:10.1155/2007/78970

Sharma N, Kaur A. Factors associated with stress among nursing students. *Nursing & Midwifery Research Journal*. 2011;7(1):12-21. doi:10.1177/0974150X20110102

Wolf, O. T., Atsak, P., de Quervain, D. J., Roozendaal, B., & Wingenfeld, K. (2016). Stress and memory: A selective review on recent developments in the understanding of stress

hormone effects on memory and their clinical relevance. *Journal of Neuroendocrinology*, 28(8). doi:10.1111/jne.12353

World Health Organization. (2023). Stress. World Health Organization. Retrieved from <https://www.who.int/news-room/questions-and-answers/item/stress>

Zheng, Y.-X., Jiao, J.-R., & Hao, W.-N. (2022). Prevalence of stress among nursing students: A protocol for systematic review and meta-analysis. *Medicine*, 101(31), e29293. doi.org/10.1097/MD.00000000000029293

Zheng, Y. (2022). Stress levels of nursing students. *Medicine Open*, 1, 1–6