Original Article

OPEN ACCESS

Role of Perceived Stress in Depression Among Trainee Nurses in Pakistan

Rabia Mushtaq[1*] and Riaz Ahmad[1]

[1]Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan

ARTICLE INFO

ABSTRACT

Stress has been defined as a threat to one's quality of life and physical and psychological well-being. Nursing students are more likely to suffer from stress due to the nature of their work, which may play a significant role in the development of psychological illnesses specifically depression. **Objective:** To find the role of perceived stress in depression in trainee nurses in Pakistan. **Methods:** The correlational research design was used in this study and the sample was selected by using purposive sampling technique. 555 female trainee nurses of age between 19 to 30 years (mean age of 21.41 years; SD= 2.25) participated in this study. Perceived stress was assessed using Urdu version of Perceived Stress Scale, while for Depression, indigenously developed Siddiqui-Shah Depression Scale was utilized. **Results:** The findings discovered that perceived stress plays a significant role in depression [R^2=.30, β= .55, $F(1, 553)$= 245.54, $p<.00$]. **Conclusions:** Globally, Nurses are taken as a vital part to healthcare system, including Pakistan where mental health issues among the population are noteworthy. The study concluded that perceived stress predicts depression among hospital trainee nurses. The findings may also have substantial implications in the imminent interventions to preclude nursing students experience stress and its inverse impacts of psychological nature.

INTRODUCTION

Nursing students play a role, as the generation of healthcare professionals based on them. The readiness of a nurse is influenced by how they adapt to and handle the challenges of an academic and clinical setting. A smooth transition for student trainees in an environment can positively impact the quality of patient care in hospitals[1]. In the realm of studies, nursing students encounter a number of stressors throughout their academic journey and are more prone to experiencing symptoms of depression compared to other students [2]. Nursing students face stressors during their path, which can affect their physical and mental wellbeing potentially impacting their academic performance adversely [3]. The occurrence of stress in nursing students has been widely discussed[4]. Stress is defined as the interaction between an individual and their environment that is perceived as straining or exceeding one's capabilities and posing a threat, to their wellbeing[5]. Perceived stress refers to how individuals assess the intensity of stressors and their capacity to deal with them. Students may experience stress both in academic as well as in clinical domain of learning. Deficient theoretical training, long study hours, shifts during examination, lack of free time, and lack of timely feedback may become reasons for their stress[6]. In the nursing field, stress has been a focus in studies and continues to be a prevalent subject[7-8]. Practical training during a nursing education is often perceived as stressful as compared to the coursework. Studies find that perceived deficiency of information and skills adds to their stress levels. Additionally, the initial clinical practice experience considers very important for students' professional life which if negative, can be upsetting for

students and cause stress. During clinical practice, trainees are prone to face various challenges such as being in a complicated environment, relationship with clinical staff and instructors, manages changes in patients' status, fear of errors while managing emergency situations, to perform interventions on real patients, and visits to units and all these situations can turn into stressors [9]. While nursing students may not bear the level of patient care responsibility as registered nurses, during training they still encounter similar stress inducing factors [10]. Several studies have also discussed regarding the difference in the levels of stress that may be influenced by differing perspectives on stress and individual perceptions, as well as the programs offered worldwide and the use of varying measurement scales [11-12]. Unlike academic programs, nursing students often find themselves deeply connected to the demands of the workplace, where they must take on significant responsibility for the wellbeing of their patients. This can sometimes lead them to prioritize their duties over participating in campus life and social events relished by their peers [13]. It has also been studied that a certain degree of stress can boost students' motivation and drive encouraging them to persevere in their studies and work towards achieving goals, while excessive stress levels may contribute to feelings of depression and hopelessness among students ultimately impacting both their health and academic performance [14]. Depression, according to the American Psychological Association is a mood state that can be a source of disruption in daily functioning, such as lack of interest in activities, sorrow, reduce appetite and sleep, concentration issues, irritability and, in some cases, suicide. In the realm of studies, it has been noted that nursing students encounter levels of stress and are more prone, to experiencing symptoms of depression compared to students, in other disciplines [4-15]. Depression is a condition that can be impacted by a combination of genetic and environmental influences [16]. Increased stress levels can adversely affect student's capacity to learn. Excessive stress could lead to both physical as well as and psychological issues such as depression, that in turn potentially impacting a student's self-esteem and performance [17]. Research examining the strain resulting from prolonged exposure to stress has shown that students experience rates of depression more compared to the students of other discipline [18]. During their time in nursing school, students undergo a period of alteration in their cognitive, physiological, and physical domains, and this phase may put them at risk of experiencing despair due to challenges in managing stressors and coping with psychosocial changes [1]. The challenging demands of nursing particularly in Pakistani context create pressure on aspiring nurses, heightened by academic demands, clinical duties and systemic healthcare obstacles [19].

Experiencing levels of stress may result in depression, impacting abilities, academic achievements, and patient care negatively. Recognizing this connection is essential for designing interventions to enhance the wellbeing of trainee nurses. Addressing stress perception and its influence on depression, among trainee nurses can bring advantages to institutions, healthcare policymakers, clinical practices, and public health initiatives. Introducing health programs and support mechanisms in nursing schools and healthcare environments can elevate care standards, enhance educational results, and contribute to the overall effectiveness of the healthcare sector.

The present study aims to offer insights by focusing on the role of perceived stress in depression in trainee nurses that could guide strategies to bolster the health and professional growth of nurses in Pakistan.

METHODS

A correlational research design was employed in the present study in which a sample of 555 nursing students of age ranges between 19-30 years (Mean age 21.41; SD=2.25) were selected from various nursing schools in Karachi, Pakistan by using non-probability purposive sampling technique. The study was conducted from December 2022 to April 2023. In this study, only female students of ages 19 to 30 years, with Pakistani nationality were participated. The sample size was calculated through G*power version 3.1.9.7. Based on calculation, a sample size of 518 was deemed sufficient to detect the effect size of 0.03 with a power of 0.95 and an alpha level of 0.05. The full-time registered nurses, and the trainee nurses with age below 19 years, or above 30 years, and those who were not Pakistani nationals were excluded from the study. Current research was reviewed and approved by the Ethical Review Committee of the Institute of Clinical Psychology, University of Karachi, Pakistan [Letter No: ICP-1(101)6195]. In order to study the variables, Urdu version of the Perceived Stress Scale and Siddiqui-Shah Depression Scale were used. Perceived Stress Scale is a self-reported measure contained 10 items with a 5 point rating scale. The scores range from 4 "Very often" to 0 "Never", and the total score is obtained by reversing the scores on positive items [20]. The score of PSS ranges from 0 to 40, where high scores indicate high levels of stress. The PSS-10 has good psychometric properties (Cronbach's α = 0.78). The Urdu version of PSS is also psychometrically sound tool (internal consistency = .727, p<.01; test-retest reliability= .730, p<.01) [21]. The Siddiqui-Shah Depression Scale was used quantify the level of depression in clinical and non-clinical samples of Pakistani populations [22]. SSDS consists of 36 items with 4 point Likert type rating scale. The total score can be obtained by summing up the score on all items, where 0 is a minimum and 108 is the maximum score. The internal consistency of the scale of were found as .91 and

13

.89 respectively. Research questionnaires were administered in small groups in classrooms setup. Before administration, participants were informed about the aims and significance of the research, their voluntary participation, and they were assured regarding no harm related to the research. Participants were given informed consent forms for their written consent before filling up the forms. Throughout the study, strict ethical guidelines were followed to ensure the confidentiality of the participants and compliance with established research standards. Data were carefully analyzed by using SPSS version 25.0, and the Linear Regression analysis was applied to find out the predictive correlations between PS and depression among student nurses.

R E S U L T S

As shown in table 1, the X age of the participants was 21.41 years. From total sample, 27.9% were in 1st year, 34.6% were in 2nd year, 24% were in 3rd year, and 13.5% were in 4th year. Total of 54.4% were Muslim, while remaining 45.6% were belong to other religions. 78.2% of the participants were awarded with scholarship on regular basis, while 21.8% trainee nurses were on self-finance. Among the total sample, 68.3% participants were living in nuclear family system, while other 31.7% were living in joint family system.

Table 1: Demographics Characteristics of Study Participants

Variables	Description	N (%)
Total Sample Size	Female Trainee Nurses	555
Age	Mean (SD)	21.41 (2.25)
Education	1st year	155 (27.9)
	2nd year	192 (34.6)
	3rd year	133 (24.0)
	4th year	75 (13.5)
Religion	Muslim	302 (54.4)
	Non-Muslim	253 (45.6)
Scholarship	Yes	434 (78.2)
	No	121 (21.8)
Family System	Nuclear	379 (68.3)
	Joint	176 (31.7)

Table 2 and 3 presented the prevalence of study variable among trainee nurses

Table 2: Prevalence of Perceived Stress in Student Nurses

Levels of Stress	Frequency (%)
Severe	121 (21.0)
Moderate	150 (27.9)
Mild	133 (23.1)
No Stress	151 (28.0)

Table 3: Prevalence of Depression in Student Nurses

Levels of Depression	Frequency (%)
Severe	49 (8.8)
Moderate	63 (11.4)
Mild	127 (22.9)
No Depression	316 (56.9)

Table 4 showed the significant predictive relationship between perceived stress and depression in the study sample. Perceived stress accounts for 30% of the variance in the outcome variable i.e., depression, and the model demonstrates significance as (R^2=.30, β=.55, P<0.001).

Table 4: Predictive Association of Perceived Stress and Depression in Student Nurses

Predictor	R^2	β	F	Sig
Depression	.30	.55	245.54	.00*

Note. p<.001* (1-tailed); Perceived Stress= PS (Predictor); Depression: (Dependent variable)

D I S C U S S I O N

The current study was aimed at investigating the role of perceived stress in depression among trainee nurses in Pakistan. Results reflect that PS plays a significant role in the development of depression in nursing students. These findings are consistent with the research conducted by which found a significant positive correlation between stress, depression and anxiety [23]. This strong association highlights the heightened susceptibility to health challenges, among nursing students. These negative emotional signs not only affect wellbeing but also disturb the educational journey and impede academic success [3]. In addition, it was also found that nursing students experience more stress than their counterparts that may be attributed to their juggling responsibilities between study, clinical work and family roles [24]. The health and happiness of healthcare professionals play a role in ensuring the wellbeing of patients and the overall functioning of the healthcare system. This is especially true, for nurses, who make up the group directly involved in patient care globally and are considered as at-risk population in terms of mental as well as physical wellbeing, which in turn affect their work including increased risk of medical errors, and compromised care of their patients [25]. Findings of the current research show that perceived stress and depression are prevailing among undergraduate student nurses and have positive association between these variables. Undergraduate nursing students often face elevated stress, anxiety, and depression, and these emotions can cause significant influence on their wellbeing, academic achievements as well as on their interactions with patients, during clinical training, and the effectiveness of provided care [26]. Furthermore, the findings of a study proposed a link where stress can trigger anxiety, which in turn may lead to depression [26]. Studies conducted in countries like Brazil, Vietnam and Thailand have shown stress plays a role in causing and predicting depressive symptoms in nursing students [2-27]. Another study found a link between feeling stressed and

experiencing depression, suggesting that high level of PS is connected to depression [28]. The connection between stress and depression is well documented and revealed that student's perception of stress was connected to depression [29]. Moreover, findings also reflected that stress and other factors are the contributory agents in depression among nursing students such as issues related to their training in the field of health [30-31]. In this context, prevalence of stress, depression and anxiety is quite common worldwide [32]. Several studies identified many factors leading to stress which in turn cause mental health issues such as depression in nursing students. These factors may be related to academics and/or to clinical work [10-33]. Academic stressors include long study hours, assignments, attendance, research projects, exams, poor grades and relationship with academic staff. While on the other hand, clinical stressors include adjustment to clinical environment, limited knowledge and skills, fear of making errors, relationships with peers and senior staff, worries related to patients' health, excessive workload, trauma experiences, and dealing with the attendants of patients [33].

CONCLUSIONS

Findings of this study conclude significant role of PS in the progression of depression among trainee nurses in Pakistan. The results also underscore the need for stress management interventions and mental health support services, specifically designed for cater the needs of trainee nurses in Pakistan.

Authors Contribution

Conceptualization: RA
Methodology: RM, RA
Formal analysis: RA
Writing-review and editing: RM, RA

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

REFRENCES

[1] Shdaifat EA. Stress and coping strategies among nursing students. Global Journal of Health Science. 2018; 10(5): 33-41. doi: 10.5539/gjhs.v10n5p33.

[2] Nway NC, Phetrasuwan S, Putdivarnichapong W, Vongsirimas N. Factors contributing to depressive symptoms among undergraduate nursing students: A cross-sectional study. Nurse Education in Practice. 2023 Mar; 68: 103587. doi: 10.1016/j.nepr.2023.103587.

[3] Sonmez Y, Akdemir M, Meydanlioglu A, Aktekin MR. psychological distress, depression, and anxiety in nursing students: a longitudinal study. Healthcare. 2023 Feb; 11(5): 636. doi: 10.3390/healthcare11050636.

[4] Zheng YX, Jiao JR, Hao WN. Stress levels of nursing students: A systematic review and meta-analysis. Medicine. 2022; 101(36): e30547. doi: 10.1097/MD.0000000000030547.

[5] Folkman S. Stress: appraisal, and coping. In: Gellman MD, Turner JR, editors. Encyclopedia of behavioral medicine. Springer International Publishing; 1984.

[6] Öner Altiok H, Üstün B. The stress sources of nursing students. Kuram ve Uygulamada Egitim Bilimleri. 2013; 13(2): 760-766.

[7] Hamaideh SH, Al-Omari H, Al-Modallal H. Nursing students' perceived stress and coping behaviors in clinical training in Saudi Arabia. Journal of Mental Health. 2017; 26(3): 197-203. doi: 10.3109/09638237.2016.1139067.

[8] Adriaenssens J, Hamelink A, Bogaert P Van. Predictors of occupational stress and well-being in First-Line Nurse Managers: A cross-sectional survey study. International Journal of Nursing Studies. 2017; 73: 85-92. doi: 10.1016/j.ijnurstu.2017.05.007.

[9] Al-Gamal E, Alhosain A, Alsunaye K. Stress and coping strategies among Saudi nursing students during clinical education. Perspectives in Psychiatric Care. 2018; 54: 198-205. doi: 10.1111/ppc.12223.

[10] Onieva-Zafra MD, Fernández-Muñoz JJ, Fernández-Martínez E, García-Sánchez FJ, Abreu-Sánchez A, Parra-Fernández ML. Anxiety, perceived stress and coping strategies in nursing students: a cross-sectional, correlational, descriptive study. BMC Medical Education. 2020; 20(1): 370. doi: 10.1186/s12909-020-02294-z.

[11] Gazzaz ZJ, Baig M, Al Alhendi BSM, Al Suliman MMO, Al Alhendi AS, Al-Grad MSH et al. Perceived stress, reasons for and sources of stress among medical students at Rabigh Medical College, King Abdulaziz University, Jeddah, Saudi Arabia. BMC Medical Education. 2018; 18(1): 29. doi: 10.1186/s12909-018-1133-2.

[12] McCarthy B, Trace A, O'Donovan M, Brady-Nevin C, Murphy M, O'Shea M et al. Nursing and midwifery students' stress and coping during their undergraduate education programmes: An integrative review. Nurse Education Today. 2018; 61: 197-209. doi: 10.1016/j.nedt.2017.11.029.

[13] Labrague LJ, McEnroe-Petitte DM, Gloe D, Thomas L, Papathanasiou IV, Tsaras K. A Literature review on stress and coping strategies in nursing students. Journal of Mental Health. 2017; 26(5): 471-480.

doi:10.1080/09638237.2016.1244721.

[14] Riley JM, Collins D, Collins J. Nursing students' commitment and the mediating effect of stress. Nurse Education Today. 2019; 76: 172-177. doi: 10.1016/j.nedt.2019.01.018.

[15] Ching SSY, Cheung K, Hegney D, Rees CS. Stressors and coping of nursing students in clinical placement: A qualitative study contextualizing their resilience and burnout. Nurse Education in Practice. 2020; 42: 102690. doi: 10.1016/j.nepr.2019.102690.

[16] Yu X Ben, Zhang HN, Dai Y, Zhou ZY, Xu R ai, Hu LF *et al*. Simvastatin prevents and ameliorates depressive behaviors via neuroinflammatory regulation in mice. Journal of Affective Disorders. 2019; 245: 939-949. doi: 10.1016/j.jad.2018.11.086.

[17] Rahman DK, Nadeem A, Riaz B. Perceived stress, the sources, severity and coping mechanisms among undergraduate medical students in a Pakistani medical school. Pakistan Armed Forces Medical Journal. 2022 Sep; 72(4): 1379-83. doi: 10.51253/pafmj.v72i4.5682.

[18] Azim SR and Baig M. Frequency and perceived causes of depression, anxiety and stress among medical students of a private medical institute in Karachi: A mixed method study. Journal of the Pakistan Medical Association. 2019; 69(6): 840-845. doi: 10.4135/9781529734348.

[19] Watson R, Rehman S, Ali PA. Stressors affecting nursing students in Pakistan. International Nursing Review. 2017; 64(4): 536-543. doi: 10.1111/inr.12392.

[20] Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. Journal of Health and Social Behavior. 1983; 24(4): 385-396. doi: 10.2307/2136404.

[21] Mushtaq R and Ahmad R. Psychometric properties of Pakistani version of perceived stress scale. Pakistan Journal of Psychology. 2020; 51(1): 51-66.

[22] Siddiqui S and Shah SAA. Siddiqui–Shah Depression Scale (SSDS): Development and validation. psychology and developing societies. 1997; 9(2): doi: 245-262. 10.1177/097133369700900205.

[23] Bapur SH, Raja, Badil. Frequency and correlation between depression, anxiety, and stress among nursing students. Liaquat National Journal of Primary Care. 2022; 4(2): 118-123. doi:10.37184/lnjpc.2707-3521.4.37.

[24] He FX, Turnbull B, Kirshbaum MN, Phillips B, Klainin-Yobas P. Assessing stress, protective factors and psychological well-being among undergraduate nursing students. Nurse Educuation Today. 2018; 68: 4-12. doi:10.1016/j.nedt.2018.05.013.

[25] Melnyk BM, Orsolini L, Tan A, Arslanian-Engoren C, D'Eramo Melkus G, Dunbar-Jacob J *et al*. A national study links nurses' physical and mental health to medical errors and perceived worksite wellness. Journal of Occupational and Environmental Medicine. 2018; 60(2): 126–131. doi: 10.1097/JOM.0000000000001198.

[26] Aloufi MA, Jarden RJ, Gerdtz MF, Kapp S. Reducing stress, anxiety and depression in undergraduate nursing students: Systematic review. Nurse Education Today. 2021; 102: 104877. doi: 10.1016/j.nedt.2021.104877.

[27] Fonseca JRFD, Calache ALSC, Santos MRD, Silva RMD, Moretto SA. Association of stress factors and depressive symptoms with the academic performance of nursing students. Revista da Escola de Enfermagem da USP. 2019; 53: 03530. doi: 10.1590/s1980-220x2018030403530.

[28] Zeng Y, Wang G, Xie C, Hu X, Reinhardt JD. Prevalence and correlates of depression, anxiety and symptoms of stress in vocational college nursing students from Sichuan, China: a cross-sectional study. Psychology, Health & Medicine. 2019; 24(7): 798-811. doi: 10.1080/13548506.2019.1574358.

[29] Romo-Nava F, Tafoya SA, Gutiérrez-Soriano J, Osorio Y, Carriedo P, Ocampo B *et al*. The association between chronotype and perceived academic stress to depression in medical students. Chronobiology International. 2016; 33(10): 1359-1368. doi: 10.1080/07420528.2016.1217230.

[30] Khan AU, Raja, Badil, Ali S. Prevalence of depression and its associated factors among nursing students in Karachi, Pakistan. Pakistan Journal of Public Health. 2019; 9(1): 34-6. doi: 10.32413/pjph.v9i1.310.

[31] Karaca A, Yildirim N, Cangur S, Acikgoz F, Akkus D. Relationship between mental health of nursing students and coping, self-esteem and social support. Nurse Education Today. 2019; 76: 44–50. doi: 10.1016/j.nedt.2019.01.029.

[32] Bartlett ML, Taylor H, Nelson JD. Comparison of mental health characteristics and stress between baccalaureate nursing students and non-nursing students. Journal of Nursing Education. 2016; 55: 87–90. doi: 10.3928/01484834-20160114-05.

[33] Labrague LJ, McEnroe-Petitte DM, De Los Santos JAA, Edet OB. Examining stress perceptions and coping strategies among Saudi nursing students: A systematic review. Nurse Education Today. 2018; 65: 192–200. doi: 10.1016/j.nedt.2018.03.012.