

## Brief Report

# The Relationship of Nursing Students' Personality Traits with Their Perceived Stress in Clinical Environment

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### ABSTRACT

**Background:** Clinical education is the most stressful part of education for nursing students. This study investigated the relationship of nursing students' personality traits with their perceived stress in clinical environment. **Objectives:** This study aimed at investigating the relationship of nursing students' personality traits with their perceived stress in clinical environment. **Methods:** This cross-sectional study was conducted in October 2020 on 215 nursing students. Participants were selected through stratified random sampling from Zanjan University of Medical Sciences, Zanjan, Iran. Data collection instruments were a demographic questionnaire, the NEO Personality Inventory short form, and the Perceived Stress Scale. Data analysis was done through the independent-samples *t*-test, Pearson's correlation analysis, and one-way analysis of variance. **Results:** The mean score of perceived stress was  $43.74 \pm 10.25$  out of 56, implying high level of stress. Neuroticism personality trait had significant positive correlation with perceived stress ( $P < 0.001$ ), whereas extraversion and agreeableness personality traits had significant negative correlations with perceived stress ( $P < 0.05$ ). **Conclusion:** Healthcare authorities need to employ strategies to identify nursing students who are at risk for stress and improve their psychological readiness for attending clinical environment.

**KEYWORDS:** Nursing student, personality, stress

## INTRODUCTION

Clinical education is very stressful for nursing students.<sup>[1]</sup> In clinical environment, nursing students experience varying levels of stress due to stressors such as the lack of professional knowledge and skills, theory–practice gap, inability to effectively communicate with patients, fear over making errors, sense of incompetence, and observation of patients' suffering and death.<sup>[2]</sup> Stress has negative effects on nursing students' learning and can be associated with academic failure and unhealthy behaviors.<sup>[3]</sup>

Personality traits are strong predictors of the ability to cope with stress.<sup>[4]</sup> There are five main personality traits, namely, neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness.<sup>[5]</sup> Studying the various aspects of students' personality and identifying the relationship of their personality

traits with their perceived stress can provide valuable information about their behaviors and help healthcare authorities create more appropriate clinical learning environment.

### Objectives

This study aimed at investigating the relationship of nursing students' personality traits with their perceived stress in clinical environment.

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## METHODS

This cross-sectional study was conducted in October 2020. Study population comprised three- to eight-semester nursing students of Zanjan University of Medical Sciences, Zanjan, Iran. They were selected through stratified random sampling. Initially, sample size was calculated to be 223. Then, the number of to-be-sampled students from each academic year was determined based on the total number of students in that year. Finally, the name list of students and a table of random numbers were used to select eligible students. Inclusion criteria were full-time study in nursing, no self-report history of mental disorders or drug abuse, no history of significant life events in the past 6 months, and having passed at least one clinical education course in hospital. Incomplete answering to the study instruments was the only exclusion criterion.

Data were collected using a demographic questionnaire, the NEO Personality Inventory short form, and the Cohen's Perceived Stress Scale. The NEO Personality Inventory has 60 items on five main personality traits, namely, neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Items are scored on a five-point Likert scale from zero ("strongly disagree") to 4 ("strongly agree").<sup>[6]</sup> A study in Iran confirmed the acceptable reliability of this inventory with Cronbach's alpha of 0.69–0.82.<sup>[7]</sup> The Persian Perceived Stress Scale was also used for stress assessment. This scale has 14 items scored on a five-point Likert scale from zero ("never") to 4 ("very often").<sup>[1]</sup> A former study reported that Cronbach's alpha of this scale was 0.81–0.89.<sup>[8]</sup>

Data collection instruments were uploaded on internet and the link was sent to participants' mobile phones and they were asked to complete the instruments online.

### Ethical considerations

The Ethics Committee of Zanjan University of Medical Sciences, Zanjan, Iran approved this study (code: IR.ZUMS.REC.1399.206). The online cover letter of the study instruments included explanations about the aim and methods of the study and the confidentiality of data management. All students completed an

online informed consent before answering to the study instruments.

### Data analysis

Collected data were analyzed using the SPSS software v.16.0 (SPSS Inc., Chicago, IL, USA). The measures of descriptive statistics were used for data description and the independent-samples *t*-test, Pearson's correlation analysis, and one-way analysis of variance were used for data analysis. The Kolmogorov–Smirnov test was also used to test normality.

## RESULTS

In total, 223 students answered the study instruments. Eight students were excluded due to incomplete answers to the instruments, a history of anxiety, or a history of drug abuse, and the data obtained from 215 participants were analyzed. On average, participants aged 20.73 years. Most participants were female (58.6%), single (85.1%), had a grade point average of 16–18 (61.9%), and had a moderate-to-high interest in nursing (65.2%).

The highest- and the lowest-scored personality traits were agreeableness (with a mean of  $31.85 \pm 9.17$ ) and extraversion (with a mean of  $23.38 \pm 9.03$ ), respectively [Table 1]. The mean score of participants' perceived stress was  $43.74 \pm 10.25$ , indicating high level of stress. The results of the scores of perceived stress had significant positive correlation with the scores of neuroticism personality trait ( $r = 0.502$ ;  $P < 0.001$ ) and significant negative correlation with extraversion ( $r = -0.309$ ;  $P = 0.001$ ) and agreeableness ( $r = -0.294$ ;  $P = 0.001$ ) personality traits [Table 1].

Female students had significantly higher levels of stress than male ones ( $33.53 \pm 7.86$  vs.  $27.26 \pm 5.33$ ,  $P < 0.001$ ). Third-, fourth-, and fifth-semester students had significantly higher stress than the students in seventh- and eighth-semesters (respectively:  $33.38 \pm 8.32$ ,  $32.07 \pm 5.67$ ,  $33.41 \pm 6.96$  vs.  $30.55 \pm 5.32$ ,  $25.89 \pm 6.60$ ,  $P < 0.001$ ), and students with a grade point average of more than 18 had higher levels of stress than those with a grade point average of less than 16 ( $34.33 \pm 7.16$  vs.  $27.24 \pm 6.53$ ,  $P = 0.002$ ). Also, female students obtained

**Table 1: Scores of personality traits and their relationships with the score of perceived stress**

Personality traits	Mean $\pm$ SD	Range	Correlation with perceived stress	
			<i>r</i>	<i>P</i> -value
Neuroticism	29.31 $\pm$ 8.11	0–48	0.502	0.001
Extraversion	23.38 $\pm$ 9.03	0–48	–0.309	0.001
Openness to experience	27.54 $\pm$ 6.87	0–48	–0.145	0.121
Agreeableness	31.85 $\pm$ 9.17	0–48	–0.294	0.001
Conscientiousness	26.95 $\pm$ 8.14	0–48	–0.063	0.506

significantly higher neuroticism scores than their male counterparts ( $31.14 \pm 8.77$  vs.  $26.56 \pm 6.11$ ,  $P < 0.05$ ).

## DISCUSSION

The findings showed that the most and the least common personality traits were agreeableness and extraversion, respectively. A former study in Iran also reported the same finding.<sup>[9]</sup> However, another study in Iran reported other personality traits as the most common traits among nursing students.<sup>[10]</sup> This contradiction is attributable to the effects of sociocultural factors on personality traits.

The study findings showed high levels of perceived stress among nursing students. A study in the Philippines also reported that nursing students experienced high levels of stress at workplace.<sup>[11]</sup> However, a study reported moderate stress among nursing students in Saudi Arabia.<sup>[12]</sup> This inconsistency can be due to the differences between these studies in terms of their settings and their participants' personal and social characteristics.

We also found higher levels of perceived stress among students with neurotic personality. A previous study also showed that students with neuroticism personality trait suffered from more stress in academic environment.<sup>[4]</sup> Individuals with neuroticism personality trait usually have negative feelings at workplace and have negative attitudes toward their jobs.<sup>[5]</sup> In contrast, our findings showed lower levels of stress among students with extraversion and agreeableness personality traits. A study on Spanish nursing students also showed that students with extraversion and agreeableness personality traits could better cope with stressful conditions.<sup>[13]</sup> An explanation for this finding is that individuals with extraversion and agreeableness personality traits usually have stronger social interactions.

Another finding of this study was the significantly higher levels of perceived stress among female and junior students. A previous study also reported higher levels of stress among female students. However, in contradiction with our finding, junior students in that study had lower levels of stress.<sup>[14]</sup> Senior students have greater clinical experience and skills and hence they are expected to experience lower levels of stress in clinical environment. We also found higher levels of stress among students with higher grade point average. Similarly, a study in the Philippines showed that students with better academic performance had more stress in academic environment.<sup>[15]</sup>

This study had some limitations. For example, answering to the numerous items of the study instrument

items might have been associated with boredom for participants. Moreover, participants' psychological status and social problems at the time of the study might have affected their responses to the study instruments. The small sample size can also reduce the generalizability of the findings. Further studies with larger samples of students are recommended.

## CONCLUSION

Nursing students experience high levels of stress in clinical settings, and their stress level has significant relationship with their personality traits. Screening programs are needed before the onset of clinical courses in order to identify those who are at risk for stress and provide them with education about stress management. Providing pre-clinical education to nursing students in simulated clinical environments can help them better manage their stress in real clinical settings.

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## Conflicts of interest

The authors declare no conflict of interests.

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