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## ORIGINAL STUDY

# Neuroticism as a leading component of perceived stress and dysfunctional coping mechanism among nurses

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### Abstract

**Background:** Nursing staff often deal with critical situations, e.g. accidents, violent deaths, and painful deaths, which make them vulnerable to developing PTSD. Personality traits influence how individuals perceive stress and cope with stress. This study aimed to examine how personality traits specifically neuroticism impact the perception of stress and adaptation of coping strategies among critical care nurses, using a five-factor model of personality. Literature reflects a positive relationship between neuroticism and perceived stress among nurses' staff, especially those with higher neuroticism.

**Methodology:** A total of 100 nursing staff was recruited through purposive sampling, with an age range, of 20-45 with mean age (Mean= 3.01, SD=6.02), minimum qualification graduation. Data was collected through the BFI-big Five Personality Inventory, Brief Cope Scale, and Perceived Stress Scale from tertiary care hospitals. Demographic characteristics were examined using descriptive statistics. To determine if personality traits and coping mechanisms would affect perceived stress, regression analysis was used.

**Results:** Neuroticism has an influencing role in the perception of stress and adaptation of coping strategies. Findings reflect that nursing staff rate high traits of neuroticism and tend to adopt coping strategies that are maladaptive and lead to neurotic symptoms. The study highlights the significant role of personality traits (neuroticism) that impact coping strategies and perception of stress among critical care unit nurses, nurses who scored high on neuroticism are more likely to experience high stress and utilize unhealthy coping strategies.

**Conclusion:** The finding highlights the importance of addressing personality traits in managing stress, interventions, emphasizing mental health support, and training to develop healthy coping strategies that improve well-being and job performance.

### Keywords

Personality traits, coping strategies, psychological stress, nursing staff



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## Introduction

All of us experience stress in day-to-day life, everyone defines stress according to their characteristics. The transactional theory of stress has explained stress response as a result of interaction between individual and environmental factors<sup>1</sup>. This individualistic perspective is explained through trait theory where he focuses on habitual patterns of thoughts and actions<sup>2</sup>.

Researchers explain the relationship between personality traits and stress related to work, non-work, and personal experience through different frameworks. The framework presented by Bolger and Zuckerman reflects the effect of personality on both dimensions of stress, stress display and reactivity to stress, health, and physiological results. Obrien and Delongin's framework presents personality dimensions and situational factors as core factors in developing three forms of responses to stress problems- emotion and relationship concerns. Five-factor model of personality traits is a prevalent model of defining personality structure<sup>3</sup>. The big five dimensions can be used to highlight the connection between individual differences and stress response, as well as to understand the role of individualistic stable characteristics in threatening situations, thanks to their widely accepted confirmed structural features and favorable psychometric properties.

The present research aimed to find the leading role of neuroticism in the adaptation of coping strategies and perceived stress among nursing staff in emergency and critical care units. Neuroticism is one of the important factors in the five-factor model of personality traits. There has been a positive association between neuroticism and perceived stress in previous studies<sup>4</sup>.

Personality traits are one of the major factors in emotional exhaustion, two major personality traits are neuroticism and extraversion. Individuals who are neurotic tend to develop neurotic anxiety which results in suffering from burnout and emotional exhaustion. Individual who are extroverts tends to have a better level of personal achievement and more satisfactory

approach towards life and job. Low job satisfaction, low level of satisfaction with the EOL care approach, feelings of loneliness following end-of-life care, and personality variables presence of neuroticism and lack of extraversion were five independent factors that were found to predict a higher level of emotional tiredness<sup>5</sup>.

Immature and neurotic defense mechanisms result in emotional exhaustion, however mature and healthy coping mechanisms result in better dealing with stress and improved outcomes<sup>6</sup>. This individualistic perspective reflects on the cognitive appraisal of the stimulus<sup>7</sup>.

Cognitive appraisal of any stimulus defines any situation as threatening non-threatening or neutral to well-being. This evaluation of the situation not only specifies the response but also helps in the adaptation of strategy to cope with the stress if perceived as stressful or challenging. Better mental health is attained by defining the stress, bringing it into the consciousness, and propagating a plan to deal with it instead of avoiding and denying the stress<sup>8</sup>.

Openness, extraversion, and conscientiousness were related to engagement coping and neuroticism was associated with disengagement coping in a meta-analysis<sup>1</sup>. Meta-analysis also links personality traits and coping strategies at both levels; independent and associative levels in impacting mental health. However other factors for example age, gender, and severity level of stress are also have been studied as moderators<sup>9</sup>. Age, gender, workload, quality of working conditions, impaired relationships between personnel, caring for dying patients, and making difficult decisions regarding not opting for life-sustaining treatment are most of the pathogenic factors that have already been studied and highlighted in many studies<sup>10,11</sup>.

Compared to other professions, the nursing profession has a variety of qualities. Dealing with death and dying on a regular basis makes this profession difficult and demanding, but there are also many other elements that make it more

stress-prone. The importance of research in this field is highlighted by the long hours, shift work, organizational demands, shift schedule supervisory obligations, and other occupational stressors<sup>12</sup>.

Increased stress and burnout can affect nurse's productivity and can result in a lack of concentration, lack of attention, and compromised patient care. Researchers reflect that nurses cope with work stress through absenteeism<sup>13</sup>. There are significant coping strategies healthy or unhealthy, positive or negative, active or inactive which help individuals deal with stressful situations. Lazarus and Folkman's stress model has a prevalent framework regarding the psychological perception of stress<sup>7</sup>.

Several researches have been conducted to study psychological stress, personality traits coping strategies, and association among these factors in rescue providers in different countries but most of the studies held in this domain used a sample population of Europeans. Data from higher-income countries reflected the prevalence of post-traumatic stress. Due to differences in the healthcare system, cultural differences economic differences, and social systems around the world, findings from other countries might not be generalized to Pakistan healthcare professionals and nursing staff. The findings of this study will help nurses become more aware of mental health issues and lay the groundwork for projects to be started for them.

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## Methodology

The survey entailed administering questionnaires to gather information about personality traits and coping strategies of nursing staff and how these factors affect one's mental well-being. Surveys are extensively utilized for doing research and

gathering data on people's opinions, perceptions, and attitudes.

The focus of this research is on personality characteristics, coping strategies, and psychological stress and rescue providers. The sites of the study were hospitals, in Karachi, Pakistan.

A total of 100 nursing staff were included in the sample. Participant's ages ranged from 20-45. Mean age=30.01 SD=6.72. At the very least, they had a high school diploma and graduation

A demographic questionnaire comprised on gender, age, academic level, marital and socioeconomic status, family structure, occupation, post, organization, and duration of services was used to collect demographic information.

Big Five Inventory was a fully functioning instrument. It is a self-report questionnaire made to assess the big five personality traits. It has a total of 44 items and has five subscales: extraversion, agreeableness, conscientiousness, neuroticism, and openness. The responses are given a Likert scale score of 1 (strong disagreement), 2 (moderate disagreement), 3 (neither agree nor disagree), 4 (moderate agreement), and 5 (strong agreement). The concurrent and convergent validity of this 75 was found to be sufficient through factor analysis. The reliability of the factors was evaluated using the coefficient alpha, which was 77.

Brief-COPE is the abbreviation for the COPE (Coping Orientation to Problems Experienced) Inventory, a self-report questionnaire designed to examine a variety of coping responses. It is a short scale with 4 subscales and a total of 28 items. 1 Active coping strategy 2) Problem-solving technique 3) Dysfunctional Coping strategy. It is a 4-point Likert scale, where 0 means "never" and 4 means "a lot." Internal consistency showed a significant level of reliability, 70.

The Perceived Stress Scale (PSS) is a well-known tool for measuring stress and consists of ten items. This scale asks you about your emotions and thoughts from the previous month. The total score of a person reflects their level of stress. Stress levels can range from low to high. The reliability coefficient produced acceptable values of 77.

The purpose, methodology, and materials of this study have received approval from the Board of Advanced Study and Research at the University of Karachi in Pakistan. The BASR Declaration and its editions' ethical standards were followed in all processes. Participants received written informed consent, a right to withdraw, and information about confidentiality before the trial even began. Participants received assurances about the security and proper use of their data.

Rescue workers in hospitals, emergency rooms, and critical units were subjected to measures. Through the relevant institute and organization's concerned department, permission to collect data was obtained. After receiving a letter of permission, data was gathered. Informal consent also stated that there was no risk to participants in the study. Participants were given measures after giving verbal and informed consent, including a demographic form, a perceived stress scale, a coping scale, and a Big Five inventory.

The entire sample was taken in Pakistan's Karachi. Purposive and snowball sampling techniques were used to contact participants. Participants agreed to participate. Scales and the purpose of the study were discussed before obtaining consent.

After the first phase of data collection, response sheets were graded using a standardized technique of data coding.

All of the analyses were conducted using the Statistical Package for Social Sciences (SPSS, version 25.0) and a significance level of .05. In statistical terms, Linear Regression Analyses and Descriptive Statistics were used to analyze the data.

## Result

The mean age of the sample which is 30.42 years ( $\pm$ SD = 6.72). In a sample of nursing staff (nursing staff the biological sex for the majority of the participants was male (69%). Around 31% of the participants were single and 69% of participants were married. Regarding family structure, the majority of the participants belonged to a joined family structure (72%) 25% of participants came from a nuclear family setup. Regarding education level (78%) of participants had a Bachelor's degree and 22% of participants had a master's degree. Regarding socioeconomic status majority (73%) of the participants belonged to middle socioeconomic status, (23.1%) upper middle, and (3%) participants were from upper socioeconomic backgrounds (Table 1).

The results of regression indicated that Neuroticism accounted for a 7% variance in the score of perceived stress ( $R^2=.074$ ,  $F(8, 80)$ ,  $p<.05$ ). Further, the neuroticism explained a 5% variance in the score of dysfunctional coping ( $t$  ( $R^2=.052$ ,  $F(6,424)$ ,  $p<.05$ ) (Table 2 & 3).

**Table 1: Demographic Characteristics of nursing staff (n=100).**

	n	%
<b>Biological Sex</b>		
Male	69	<b>69</b>
Female	31	<b>31</b>
<b>Marital Status</b>		
Single	69	<b>69</b>
Married	31	<b>31</b>
<b>Family Structure</b>		

Joint	72	<b>72</b>
Nuclear	25	<b>25</b>
Extended	3	<b>3</b>
<b>Education</b>		
Graduation	78	<b>78.0</b>
Masters	22	<b>22.0</b>
<b>Socioeconomic Status</b>		
Lower	3	<b>3.0</b>
Middle	73	<b>73.0</b>
Upper Middle	23	<b>23.0</b>
Upper	1	<b>1.0</b>

**Table 2: Summary of Linear Regression Analysis Neuroticism as Predictor of Perceived Stress.**

Outcome Variables	R	R <sup>2</sup>	F	p-value
<b>Perceived Stress</b>	.288	0.074	8.860	0.004*

\*p < .05, df = 1

**Table 3: Summary of Linear Regression Analysis Neuroticism as Predictor of Dysfunctional Coping Mechanism.**

Outcome Variables	R	R <sup>2</sup>	F	p-value
<b>Dysfunctional Coping</b>	0.248	0.052	6.424	0.000*

\*p < .05, df = 1

## Discussion

The purpose of this study was to identify the variables that influence nursing staff members' perceptions of stress. This study's strength comes from the fact that information was gathered from nurses who work in high-risk environments, such as emergency rooms and critical care units. Working in this environment necessitates emotional involvement and reflection on personality traits and coping mechanisms.

Studies in the early 1990s have focused on the relationship between personality characteristics and perceptions of stress. Personality traits affect's evaluation process of stressful situations. Particularly about how stress is perceived, neuroticism has been discovered to affect traits among all Big Five factors. High neurotic people

may view ordinary daily events as stressful and difficult<sup>14</sup>. Our findings of neuroticism as a leading factor of perceived stress are consistent with Eysenck's work and most research on the five-factor model of personality traits.

As a core component of general personality, neuroticism refers to a persistent propensity or tendency to feel dissatisfied or unhappy emotions. People with high neuroticism levels are more likely than the ordinary person to feel anxious, angry, guilty, and depressed. They react poorly to environmental stress, are inclined to see threats where none exist, and are capable of seeing tiny irritations as utterly overwhelming. They frequently struggle to control their urges

and impulses when they are distressed and are hesitant and self-conscious<sup>15</sup>.

According to research<sup>16-18</sup>, neuroticism is the most pervasive personality trait. Neuroticism frequently results in anxiety and depression, one key aspect of anxiety and depression illnesses is recurrent, negative thoughts. These thoughts may manifest as a concern in anxiety, which is the fearful anticipation of potentially unfavorable outcomes in future occurrences<sup>19</sup>.

Anxiety and the idea of rumination share many similarities since both constructs are cognitive comorbidities of psychopathology that involve unproductive, recurrent thinking<sup>20,21</sup> some factor analytic evidence suggests that concern and rumination have different characteristics, but the results of this research appear to support the notion that worry and rumination are closely connected cognitive constructs.

Some scholars have even concluded that rumination and worry are both examples of neuroticism's dispositional vulnerability component, which is thought to indicate a general propensity to experience psychopathological symptoms like anxiety and depression<sup>22</sup>. There is growing data showing that anxiety and ruminating are closely related to neuroticism<sup>23-25</sup>. Irritation, guilt, and self-consciousness because of poor self-control, impulsivity, illogical thinking, low self-esteem, and self-criticism, as well as a lack of effective coping mechanisms.

Research<sup>26</sup> also states that negative personality traits neuroticism are connected with avoidance coping positively and<sup>27</sup> high neuroticism leads to less adaptive coping strategies. Our findings are consistent with the previous work. Numerous research has looked at how personality traits and coping mechanisms relate to one another<sup>3</sup>.

Several research has demonstrated a substantial positive association between adaptable personality traits and active coping mechanisms. Coping is a critical health process that needs to be covered in this thorough study since nurses

commonly experience stressful situations and because research should concentrate on improving their performance and welfare<sup>28,29</sup>.

The relationship between personality and coping methods suggests that people with maladaptive personalities are more likely to experience psychological stress because they are more likely to employ unhealthy coping methods like avoidant coping.

The specific personality traits that are most at risk are neuroticism. The use of rumination and avoidance strategies is more common in those who are more neurotic because they tend to experience negative emotions more intensely<sup>30</sup>. The ability of a person's personality to regulate the physiological excitation brought on by stress has a particular bearing on how they perceive the situation, which in turn has a bearing on the coping techniques they select and employ. It follows that personality traits have an impact on coping<sup>31</sup>. Although personality is often unchanging, coping strategies can be patterned<sup>32</sup>.

Therefore, coping skills could be developed to lessen anxiety and enhance the welfare of healthcare personnel<sup>33</sup>. However, the assessment of personality traits and specific coping mechanisms, as well as the utilization of laboratory and daily report studies, are thought to be necessary for a greater understanding of the function of personality in the coping process<sup>9</sup>.

However, the data proved the hypothesis correct, a larger sample size would have allowed for more conclusive results. For precise results, it is advised that data be gathered from numerous organizations in Karachi and at a considerable scale.

English was employed for the measures even though it is a second language in Pakistan. There were still several topics and questions in the questionnaire that were explained to participants notwithstanding the graduation minimal requirements. A translated template of measures

was used to assure response quality and standardize the translation of items. It is advised to utilize culturally appropriate versions of the metrics.

The reliance on self-reported measures may have introduced bias, as participants could have over or underreported their stress levels.

Future research could examine how coping mechanisms and personality factors are related through the mediation of perceived stress with a larger sample size. Longitudinal and qualitative interviews could help in-depth understanding of different stressful factors.

## Conclusion

This study underscores the significant role of personality traits, particularly neuroticism, in impacting how nursing staff in critical care units perceive stress and adopt coping strategies accordingly to deal with stressful events they go through daily. Nursing staff who scored high on neuroticism are more likely to experience high levels of stress and adopt unhealthy/maladaptive coping strategies. The findings from this study align with the literature on the association between the aforementioned variables. These findings also highlight the importance of developing and introducing targeted interventions to help these individuals cope with stress that will lead to a healthy lifestyle, improved well-being, and productivity.

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