




RESILIENCE AS A MEDIATOR IN RELATIONSHIP BETWEEN ANXIETY AND PERSONALITY AMONG PHYSIOTHERAPISTS-A CROSS-SECTIONAL STUDY

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ABSTRACT

Background and Aims: The COVID-19 outbreak is the biggest global crisis in generations having severe and far-reaching repercussions for the health system, creating high prevalence of severe posttraumatic stress symptoms for physical therapists, highlighting the need for psychological help. Therefore, this study aimed to investigate how resilience functions as a mediator in the relationship between anxiety and personality among Karachi based physiotherapists.

Methodology: A cross-sectional study was conducted among physiotherapists of Karachi using a convenience sampling technique from August to December 2021. The data was collected using a 10-Item Personality Inventory, Brief Resilience Scale, and Hamilton Anxiety Rating Scale questionnaire.

Results: Among 70 participants, the emotional stability trait (7.6 ± 1.4) had higher

mean values on the TIPI. On the HAM-A scale, 81.4% physiotherapists had moderate to severe anxiety followed by 15.7% mild to moderate anxiety whereas 92.9% were shown to have normal resilience. Despite all correlations being negligible, only the association between agreeableness and resilience was non-significantly higher ($r=0.83$).

Conclusion: It was concluded that there was no association between the anxiety state and resilience among physiotherapists, although there was a non-significantly higher relationship between agreeableness and openness to experiences personality traits. A high prevalence of moderate to severe anxiety was noted while using a standard resilience strategy.

Keywords: *Mental health, Personality, Depression, Resilience, Covid-19, Anxiety, Physiotherapist*

Introduction

The outbreak of the COVID-19 pandemic is the biggest global crisis in generations that have severe and far-reaching repercussions for the health system, economies, and societies to date^[1]. This pandemic had a profound effect on all aspects of society, including physical and mental health¹. A mental disorder or mental health issues impair an individual's intellect, and emotional control². As per Mental health statistics, in 2019, 301 million people worldwide experienced anxiety disorders while 280 million people were afflicted with depression, its symptoms were severe enough to cause significant suffering or functional impairment³. The COVID-19 epidemic significantly increased the number of people who experience anxiety and depressive disorders. In 2021, depression represented 4.3% of all diseases' global burden.

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It is also vital to note that depression is one of the top 20 causes of disability⁴. The soaring COVID-19 cases placed an enormous load on healthcare professionals that imposes severe post-traumatic stress symptoms, with front-line or quarantined healthcare personnel being at higher risk⁵. The main challenges experienced by healthcare professionals during the COVID-19 outbreak included an excessive workload, fear to spread the disease, a sense of pressure, lack of appropriate medications, and community isolation that accentuated widespread psychological disorders including anxiety and depression related to COVID-19⁶. Anxiety and fear of infection were shown to be the top concerns for both healthcare staff and the general public, highlighting the need for psychological help measures⁷. However, healthcare professionals assisting COVID-19-infected patients experience additional stress⁸. On the other hand, sadness and employment insecurity appear to be strongly associated with the dread of COVID-19⁹. The prevalence of depression, anxiety, and distress among a sample of 1257 Chinese healthcare workers was found to be 50.4%, 44.6%, and 71.5%, respectively, with a frontline worker with COVID-19 patients in Wuhan being associated with a higher risk¹⁰. Whereas in Pakistan, depression, stress and anxiety are common among physical therapists. According to the DASS 42 score, 70.1% of research participants had depression, 53.17% had anxiety, and 60.05% had stress¹¹. Financial challenges, less paid employment and work discontent were determined to be the main causes of depression, stress, and anxiety¹¹. The state of one's mental health may be influenced by a wide range of personal, familial, social, and structural elements¹². Those individuals who are subjected to adversity such as poverty, violence, handicap, and inequality, including personal psychological and biological traits like emotional intelligence and genetics are at greater risk but also are more resilient¹³. Resilience is the ability to recover, rebound, bounce back, adjust, or even the following misfortune, change, or adversity. It was considered an enduring personality trait in early studies but is viewed as a complex, dynamic and multi-dimensional phenomenon now¹⁴. It is possible to cultivate some traits that are associated with resilience; these traits help people withstand stress and protect them from it¹⁵. The way individuals react to stress varies greatly between individuals. Different personalities are observed to cope in different manners with stress and in certain personalities. Although there is no research on the long-term psychological effects of COVID-19, resilience can be developed; these abilities guard against stress and strengthen one's resistance. According to studies, personality variations between people may contribute to the emergence of anxiety symptoms¹⁶. Extraversion, neuroticism, conscientiousness, agreeableness, and openness are the five general traits that make up the five-factor model (FFM) of personality traits, which acknowledges that personality traits are hierarchically arranged from many specific characteristics to five general traits¹⁷. According to past studies, anxiety has been linked to personality traits, especially neuroticism and extraversion. Extraversion in particular seems to guard against anxiety symptoms, but neuroticism has been shown to be a predictor of such symptoms for many personalities. Resilience increases one's resistance to stress and safeguards against it.^{18,19} The association between personality qualities and anxiety has not yet been investigated; however, resilience may have a mediating function. Yet Studies on the mental health of healthcare professionals are still few and far between. The purpose of this study is to investigate how resilience functions as a mediator in the relationship between anxiety and personality among Karachi-based physical therapists.

Methodology

A cross-sectional survey was conducted on a total of 100 physiotherapists recruited through a non-probability convenience sampling technique from primary and tertiary care settings in Karachi from August to December 2021. The sample was selected based on of following criteria.

Inclusion Criteria

Both Male and female physical therapists aged between 25 to 40 years of age, working in primary or tertiary care units during COVID-19 for > 1 year.

Exclusion Criteria

Refusal of participation, or those individuals who haven't worked in the industry for more than six months.

Data Collection Tool

10-Item Personality Inventory (TIPI): is a self-reported scale that measures extraversion, agreeableness, conscientiousness, emotional stability and openness, which are the Big Five personality qualities. The TIPI's items are scored on a 7-point Likert-type scale, with 1 denoting strong disagreement and 7 denoting strong agreement with a total score of 10-70. The scale has excellent test-retest reliability (ICC = 0.92, $p = <0.00$)^[20].

The Brief Resilience Scale (BRS): measures one's perception of their resilience under stress. It has six items to evaluate resilience with 3 potential score ranges: 1-2.99 (low resilience), 3-4.30 (normal resilience), and 4.31-5 (high resilience). The scale has an internal consistency reliability of $\alpha = 0.80$ to 0.91 ^[21].

HAM-A (Hamilton Anxiety Rating Scale): assesses the severity of anxiety symptoms in clinical contexts. The scale has 14 items with a total score range of 0-56 and evaluates both somatic and mental anxiety (physical complaints associated with anxiety). A score of 17 suggests mild severity, a score of 18–24 shows mild to moderate severity, and a score of 25–30 indicates moderate to severe severity. The scale has an internal consistency reliability of $\alpha = 0.77$ to 0.92 ^[22].

Data Collection Procedure

Participants were recruited through a convenience sampling technique from primary and tertiary care hospitals in Karachi. Questionnaires TIPI, HAM-A, and BRS respectively were administered after In order to give the participants thorough information about the study, an informed consent form was given to them. These self-administered Questionnaires were shared via email, and WhatsApp to analyze their response.

Data Analysis

Data was entered and analyzed on SPSS (Statistical Package for Social Sciences). Mean and standard deviation descriptive statistics were used to show participant demographic information, and frequency and percentage descriptive statistics were used to show replies. For any such association with anxiety and personality traits with resilience, the Chi-square test of association was used at a significance level of $p < 0.05$.

Result

Out of 100, 70 physiotherapists participated, the majority of which were women (62.9%), whereas men were (37.1%), with ages ranging from 31 to 35 years (31.4%) and 25 to 30 years (28.6%), majority of which worked in private hospitals. The details are depicted in table 1.

| No. of Participants | n=70 |
|---------------------|------------|
| Gender | |
| Male | 26 (37.1%) |
| Female | 44 (62.9%) |
| Age (Years) | |
| 25-30 | 20 (28.6%) |
| 31-35 | 22 (31.4%) |
| 36-40 | 16 (22.9%) |
| >40 | 12 (17.1%) |
| Hospital | |
| Public | 17 (24.3%) |
| Private | 53 (75.9%) |

Table 1 Demographic Characteristics of Participants

It was found in Measures of Anxiety and Personality Traits on the TIPI in table 2 that the emotional stability trait (7.6±1.4) had higher mean values than openness to experiences (7.4±1.7) and agreeableness (7.1±1.2), which were in turn followed by extraversion and conscientiousness. On the HAM-A scale, moderate to severe anxiety was found to be common in 81.4% of physiotherapists while mild to moderate anxiety was found to be prevalent in 15.7% of physiotherapists, and 92.9% of physiotherapists were shown to have a normal resilience approach during COVID- 19 in figure 1.

| Demographic Characteristics of Participants | |
|---|------------|
| TIPI Total Score | 47.49±4.54 |
| Personality Traits | |
| Extraversion | 6.9±1.4 |
| Agreeableness | 7.1±1.2 |
| Conscientiousness | 6.8±1.8 |
| Emotional Stability | 7.6±1.4 |
| Openness to experiences | 7.4±1.7 |

Table 2 Demographic Characteristics of Participants

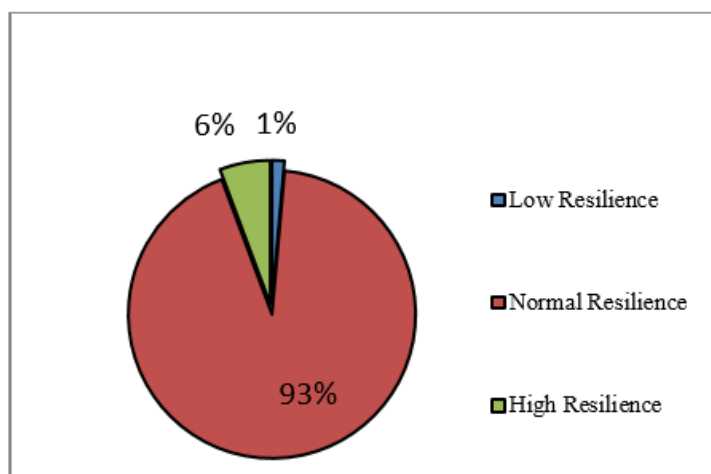


Figure 1 Resilience Approach Measured on BRS

The association of resilience and personality traits revealed the relationship between agreeableness and resilience was stronger, with a correlation of $r=0.83$, and the relationship between openness to experiences and the remaining qualities was weaker, with a correlation of $r=0.15$. All of the other correlations were negligible, and none of the results were statistically significant in table 3.

| Association of Resilience and Personality Traits | |
|--|---------------------|
| Personality Traits | Pearson Correlation |
| Extraversion | 0.03 |
| Agreeableness | 0.83 |
| Conscientiousness | 0.176 |
| Emotional Stability | 0.009 |
| Openness to experiences | 0.216 |

Table 3 Association of Resilience and Personality Traits

Discussion

This study is the One of the few research that look at anxiety state and personality traits among Karachi-based physiotherapists, it evaluate the mediating role of resilience in relationships. A study concluded among a total of 476 healthcare workers including doctors, nurses, and paramedical staff participated from Pakistan, India, and Sri Lanka. A validated WHO Self-Reporting Questionnaire (SRQ-20) was used to screen for Depression. A 25.7% prevalence of depression was reported among healthcare workers²³. A study implies that 11.9% of physical therapists and 20.7% of physical therapist students experienced moderate to severe depressive symptoms^[24] Despite the significant frequency of anxiety among physiotherapists, recent research found that anxiety was also common among medical students, with prevalence rates of 29.4% in Israel, 43.7% in Pakistan, 44% in Malaysia, and 56% in India. Additionally, there have been more reported significant doctor-patient disputes in China in recent years, which may have a detrimental impact on medical students' anxieties about their future careers. Additionally, there have been more reported significant doctor-patient disputes in China in recent years, which may have a detrimental impact on medical students' anxieties about their future careers. A study that evaluated the association between psychological resilience and mental health in the general population of China revealed that depression, anxiety, and somatization symptoms were present in 47.1%, 31.9%, and 45.9% of cases, respectively²⁵. Depression and anxiety symptoms were more common during the COVID-19 pandemic's peak phase compared to non-epidemic seasons. According to recent research, public health events can contribute to poor mental health in the broader population. The study was constrained by the difficulty of ensuring the validity of the online psychological exams, which may have jeopardized the study's findings. Similar results were obtained in our study, where the majority of physiotherapists had moderate to severe anxiety. However, because the evaluations were based on self-reported questionnaires, the validity of the responses may have been jeopardized. Similarly, Resilience partially or completely mediated the associations between all of the Big Five personalities, with the exception of subjective well-being and perceived stress at the beginning of the COVID-19 outburst, according to a study that examined the relationship between personality and psychological functioning during the COVID-19 pandemic²⁴. The data gathering used an online survey platform, which had some reach issues with older participants who didn't utilize the internet. Additionally, the sample has a higher proportion of female individuals. The sample's unequal representation of men and women had an impact on the findings. The results of our study revealed similar negligible and insignificant relationships between resilience and all variables, except for agreeableness and openness to experiences, and unequal representation of male and female physical therapists. Our findings are also consistent with a study on the impact of

personality characteristics and strong social support on coping methods for the stress brought on by the coronavirus pandemic. This study, which was done among Israeli-Palestinian college students, examined how these factors can help people manage effectively, adaptively, and actively²⁶. Furthermore, the findings showed that high levels of openness, extraversion, agreeableness, and conscientiousness are associated with a tendency to use active problem-focused coping, whereas high levels of neuroticism are associated with a tendency to use maladaptive emotion-focused coping. The sample size was not gathered using a randomized sampling technique, which was one of the study's weaknesses. Second, self-reported questionnaires used to collect the data could have introduced bias. Even though the majority of physiotherapists displayed resilience levels, (22.8%) had low, (74.3%) had normal and (2.9%) had high resilience. However, the sample size restriction and the use of self-reported measures may lead to some prejudice, and coping mechanisms were not examined. However, the majority of the studies cited above-used self-reporting questionnaires to gauge psychological discomfort. Since self-reporting surveys may not fully reflect individuals' mental health, this approach has disadvantages. Due to inter-individual variations in resilience, social support, etc., psychological distress may not always result in a mental disorder. It is necessary to acknowledge a few limitations of the current investigation. First, since the study was cross-sectional, no causal links between the variables could be established. Second, all data were collected using self-reported surveys, which may have resulted in response bias. It's possible that the participants overestimated or underestimated the link between the variables. Thirdly among the relationships between the big five personality traits and anxiety symptoms among the study participants, resilience had a minor mediating function, which may in part limit the practical significance of our findings. Fourthly, it is important to use caution when extrapolating the findings from our study sample. Future surveys should be done across the entire country, focusing on Pakistan's young, old, and middle-aged populations in both urban and rural locations. The population of rural areas is more susceptible to stress and anxiety disorders due to low literacy rates and low income. Additionally, schools and institutions must offer mental health programs to students. Infirmaries, workplaces, and local communities should all host awareness campaigns. In Pakistan, there is a dearth of competent health professionals. The correct education of healthcare professionals is necessary to address this issue.

Conclusion

It was concluded that there was no association between the anxiety state and resilience among physiotherapists, although there was a non-significant relationship between agreeableness and openness to experiences personality traits. A high prevalence of moderate to severe anxiety was noted while using a standard resilience strategy. It may be more advantageous to identify at-risk individuals and apply adequate intervention techniques that place an emphasis on personality traits and resilience in order to prevent and minimize anxiety symptoms.

AUTHORS' CONTRIBUTION:

The following authors have made substantial contributions to the manuscript as under:

Conception or Design: Abia Arif

Acquisition, Analysis or Interpretation of Data: Syed Hasan Abbas Rizvi

Manuscript Writing & Approval: Amir Ishaq

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