



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**Available online at: <http://www.iajps.com>

Research Article

**THE ROLE OF PERSONALITY IN PATIENTS WITH
FIBROMYALGIA- A RANDOMIZED CONTROLLED TRIAL**¹Dr Abid Ullah,²Dr Hamayoon Ishaq,³Dr Muhammad Iftekhhar Ud Din.¹MBBS, Rehman Medical College, Peshawar.^{2,3}MBBS, Khyber Medical University Institute of Medical Sciences, Kohat.**Article Received:** April 2020**Accepted:** May 2020**Published:** June 2020**Abstract:**

This condition does not have specific treatment according to its neuropathological disorder. There is only symptomatic treatment cognitive behavioral therapy, and exercise. (2,4) There is further exploration needed for better understanding the complex nature of fibromyalgia. A multidimensional set of characteristic present in a person which affects its cognition and behavior is known as personality. Hardship and any discomfort greatly depend upon the ability of an individual to cope up with these conditions. The current study has shown that personality is associated with the clinical symptoms of fibromyalgia and psychosocial health outcomes. The treatment of comorbid mood disorders may potentially reduce the symptoms of fibromyalgia. Because the ability of any personality has great role in coping up with the stressful conditions, its assessment guide in the treatment plans and improving patient outcomes.

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Please cite this article in press Abid Ullah et al., The Role Of Personality In Patients With Fibromyalgia- A Randomized Controlled Trial., Indo Am. J. P. Sci, 2020; 07(06).

INTRODUCTION

An extensive chronic pain syndrome which is musculoskeletal in nature pervade by muscle tenderness, fatigue, sleep disturbance, and physical and psychological impairment (1).

This condition does not have specific treatment according to its neuropathological disorder. There is only symptomatic treatment cognitive behavioral therapy, and exercise. (2,4) There is further exploration needed for better understanding the complex nature of fibromyalgia. A multidimensional set of characteristic presents in a person which affects its cognition and behavior is known as personality. Hardship and any discomfort greatly depend upon the ability of an individual to cope up with these conditions. (5)

The Big Five Personality Theory, also known as the Five Factor Model, is a widely recognized model describing five personality traits that are considered stable throughout adult life: agreeableness, conscientiousness, extraversion, neuroticism, and openness. The relationship of fibromyalgia an effect on personality has gaining the interest from recent years. Literature has shown that inability to cope up with stress is familiar among fibromyalgia patients. (6,7) And it has been recommended that the personality give more way to the transformation of stressors to stimulate the physiological response which consequently increases the symptoms of fibromyalgia. Many studies have shown that personality dimensions are associated with certain health outcomes related to fibromyalgia. (8)

Four studies was in favor of positive relation between neuroticism and pain whereas two studies have demonstrated that there was remarkable associations between neuroticism and fatigue, stress, sleep, and anxiety. Another study has revealed that of pain catastrophizing, while neuroticism, openness, and agreeableness are significant predictors of pain anxiety. (9, 10)

Previous literature has also reported that some of the personality characteristics are strongly linked with anxiety and depression. (11, 12) and the prevalence of these comorbid disorders in fibromyalgia patients is well documented. However, whether personality directly affects an individual's fibromyalgia condition or if its effects are mediated through other psychosocial variables is unknown. Previous literature has shown that anxiety and depression are directly proportional with the severity of fibromyalgia symptoms, higher the levels of these correlating factors there is more severe pain and fatigue. (13, 14) Meanwhile any change in the personality of an individual suffering from fibromyalgia condition may potentially act through either anxiety and/or depression. However,

there is less evidence on the examination of association between personality and other psychosocial and related health outcomes.

Therefore, this study had two primary objectives: To evaluate the association between personality dimensions and the clinical symptoms of fibromyalgia

METHODS STUDY DESIGN:

It was a cross-sectional study. All the participants over age 21 were recruited into the study. The participants who met ACR 2010 diagnostic criteria for fibromyalgia were included into the study. Participants who were having serious medical conditions limiting ability to participate in Tai Chi or Aerobic Exercise intervention diagnosed medical conditions thyroid disease, inflammatory arthritis, systemic lupus erythematosus, rheumatoid arthritis, myositis, vasculitis, were excluded from the study. SF-36 questionnaire, Hospital anxiety and depression scale, perceived stress scale, Revised Fibromyalgia Impact Questionnaire, Symptom Severity Scale, were used for screening the patients. An informed consent was signed after explaining the purpose of the study. All analyses were performed using SPSS version 20. Significance level was set at $p \leq 0.05$.

Results

Total 90 participants were recruited into the study. Mean age was 51.3 years. There were 40 male and 50 females. The average duration of body pain was 14.2 years whereas the average BMI was 32 kg/m². The score of Revised Fibromyalgia Impact Questionnaire was 59.2 which demonstrate that there was moderate to severe fibromyalgia present among the individuals.

Levels of neuroticism were measured with overall fibromyalgia impact and symptom severity which has shown that there was remarkable association between them. Whereas, greater levels of neuroticism were significantly associated with higher levels of anxiety depression and stress. In contrast, higher levels of conscientiousness and extraversion were generally associated with better psychological health and psychosocial health outcomes.

Similarly, higher levels of neuroticism were significantly associated with depression and depression was significantly associated with FIQR. However, when controlling for depression, the previously significant association between neuroticism and FIQR became insignificant. This suggested that depression arbitrate the effects of neuroticism on overall fibromyalgia impact as well.

Discussion

The current study has found that higher neuroticism was associated with higher overall fibromyalgia impact, symptom severity, anxiety, depression, stress, and worse mental component quality of life. Higher neuroticism was also associated with lower self-efficacy, mindfulness, and social support. Of note, higher conscientiousness and extraversion were generally associated with better psychological health (less anxiety, depression, and stress, and better mental component quality of life) and health-related outcomes such as more social support, self-efficacy, outcome expectations, and/or mindfulness. In addition, the effect of neuroticism on fibromyalgia impact was mediated by anxiety and depression. Of the five personality traits, only neuroticism was associated with worse health outcomes. This finding is consistent with the results of other studies. A study conducted by Malin and Littlejohn have demonstrated that neuroticism has remarkably linked with characteristics of fibromyalgia such as pain, sleep, fatigue, and confusion (15). Similar to the current study's result they have shown that neuroticism had strong associations with common fibromyalgia comorbidities of depression, anxiety, and stress. Further studies have stated that there is direct relation of neuroticism and chronic level of pain in fibromyalgia. The main components of personality traits are conscientiousness and extraversion which have shown positive relation with better psychological health and related health outcomes (16). Higher extraversion and lower neuroticism in this study were associated with less anxiety and depression, which aligns with the findings of a previous study that showed that higher extraversion and lower neuroticism were linked with better affective states and less psychosocial problems (17). In this study, higher conscientiousness was associated with lower symptom severity and stress, which is comparable to earlier findings associating the trait with less chronic pain (18). Higher conscientiousness, for example, has been linked with pain catastrophizing rather than better health outcomes associated with fibromyalgia (19). Nevertheless, the present study has found new associations, showing that higher levels of conscientiousness was significantly associated with higher self-efficacy, outcome expectations for exercise, and mindfulness, while higher extraversion was associated with more social support and mindfulness. The effect of personality on the clinical symptoms of fibromyalgia may relate to a person's ability to cope with stress. Personality and coping has been extensively studied, and current literature suggests that the interaction between personality, stress, and coping can predict both mental and physical well-being (20). A systematic review and meta-analysis were conducted on dealing stress with extraversion, conscientiousness, and openness with effective

strategies (21). the successful strategies contain emotional regulation, acceptance, and engagement aimed at controlling, adapting, and adjusting to the stressor.

Whereas neuroticism, in associated with less effective coping techniques such as avoidance, denial, and disengagement. Insufficient management with stress is very common among participants suffering from fibromyalgia. (22) Inability to cope up with stress has demonstrated through many evidences that that physical and psychological trauma can precipitate the development of fibromyalgia. (23) Some studies suggest that personality can facilitate the emergence of poor coping and can modulate a person's response to stress, which can ultimately exacerbate the symptoms of fibromyalgia (24). In neuroticism which is a personality attribute there is emotional reactivity and a tendency to experience distress. Individuals who met the high level of neuroticism are often specified as those who worry a lot, are depressed, and are easily upset or irritated. Therefore, when fibromyalgia patients with neurotic personalities are impaired by their functional limitations, they are more susceptible to poor coping and perceiving their own life negatively.

This is why participants who were having high neuroticism in the study was associated with worse psychosocial factors such higher perceived stress, and lower mental quality of life, social support, self-efficacy, and mindfulness. The indirect effects of neuroticism on fibromyalgia impact were mediated through both anxiety and depression. This suggests that personality may contribute to the development of mood disorders as well, which may subsequently impair patients' ability to cope with their syndrome. The mediation results emphasize the importance of addressing psychological factors in the management of fibromyalgia (25). More specifically, the study suggests that treating anxiety and depression in patients with high levels of neuroticism is essential for alleviating overall fibromyalgia impact. Furthermore, the mediation analysis also shows that the extent and severity of one's fibromyalgia impact is a product of a complex interaction between personality and psychological variables. Future research should investigate other potential mediators and psychological factors that may influence one's fibromyalgia condition.

CONCLUSION:

The current study has shown that personality is associated with the clinical symptoms of fibromyalgia and psychosocial health outcomes. The treatment of comorbid mood disorders may potentially reduce the symptoms of fibromyalgia.

Because the ability of any personality has great role in coping up with the stressful conditions, its assessment guide in the treatment plans and improving patient outcomes.

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