







Review Article

The global prevalence of depression and anxiety among fibromyalgia patients: A systematic review and meta-analysis

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Highlights

- This study is the first systematic review and meta-analysis on the prevalence of both anxiety and depression in fibromyalgia patients.
- Approximately 50% of fibromyalgia patients experience symptoms of depression and anxiety.
- The prevalence of anxiety in fibromyalgia patients tends to decrease with age, while the rate of depression shows an increasing trend.
- Additionally, the prevalence of anxiety and depression varies significantly among different countries.

Abstract

Background

Fibromyalgia syndrome (FM) is a prevalent syndrome characterized by persistent widespread pain and fatigue, and associated with psychiatric symptoms, affecting about 2%–8% of the global population, predominantly women. The potential link between FM and psychiatric disorders has long been speculated due to their possible association with disturbances in the nervous system.

Methods

In this systematic review and meta-analysis, the objective was to evaluate the prevalence of anxiety and depression among FM patients while also examining the influence of factors such as age, sex, and country on these rates. We conducted

searches in five databases from their inception to January 26, 2024, for studies reporting the prevalence of depression and anxiety among fibromyalgia patients. The quality of the studies was assessed using JBI checklists.

Findings

We included 62 and 88 studies on anxiety and depression, with 21,591 and 31,104 FM patients, respectively, in the analysis. The results revealed that approximately 46.58% (95% CI: 39.18% – 53.99%) of FM patients experience anxiety, while 50.79% (95% CI: 45.52% – 56.06%) suffer from depression. The results underscored significant variability among the studies. The heterogeneity of studies reporting anxiety and depression was $I^2=76.39\%$, $p<0.0001$, and $I^2=64.43\%$, $p<0.0001$, respectively.

Interpretation

This study represents the first systematic review and meta-analysis to investigate the prevalence of both overall anxiety and depression in fibromyalgia patients. We estimated that approximately half of fibromyalgia patients experience depression and anxiety. The prevalence of anxiety decreased with increasing age, while depression exhibited an upward trend.

Funding

This study did not receive any funding.

Introduction

Fibromyalgia (FM) is a common syndrome that causes non-invasive chronic widespread pain, fatigue, psychiatric disorders, and heightened sensitivity to touch and temperature (Caxaria et al., 2023; Siracusa et al., 2021). FM is the second most common rheumatological disease after osteoarthritis, occurs in approximately 2.0 to 5.0% of the world population, and affects more females than males (Ruschak et al., 2023). The total incident ranges from 2 to 4% (de Santana et al., 2022), which is higher in Europe (2.64%) than in the USA (2.41%) or parts of Asia (1.62%) (Gayà et al., 2020). Fibromyalgia is also strongly associated with obesity (Mathkhor and Ibraheem, 2023), which has been growing in the last decades in America (Wang et al., 2023). Surprisingly, FM costs about \$ 1750 to \$35,920 per patient annually (D'Onghia et al., 2022). Despite the ongoing studies, the etiology of FM remains unclear, leading to unsatisfactory treatment outcomes (Dizner-Golab et al., 2023). In addition to chronic pain, FM is usually associated with other chronic pain conditions such as tension-type headaches, chronic fatigue syndrome, irritable bowel syndrome, and migraine (Mezhov et al., 2021).

Besides physical complaints such as pain, individuals also experience high levels of stress and aggression, which leads to psychological disorders (Galvez-Sanchez et al., 2019), including symptoms of common psychiatric diseases such as depression and anxiety (Cojocarui et al., 2024). The psychological disorder also negatively affects the quality of life and pain level (Singh and Kaul, 2018; Hadlandsmayth et al., 2020; Cetingok et al., 2022); as a result, it makes the treatment more complicated for depression and anxiety (Bernik et al., 2013; Krupa et al., 2023).

Although numerous studies have demonstrated symptoms of depression and anxiety in patients with FM, they indicate that prevalence rates vary from 20 to 85 in some studies (Dell'Erba et al., 2023; Galvez-Sanchez et al., 2020; Janssens et al., 2015; Diaz-Piedra et al., 2014). Some of these discrepancies might reflect variations in the psychometric assessment used to detect the presence or absence of these conditions, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the Hamilton anxiety depression scale (HADS) (Carta et al., 2018; Dong et al., 2023; Henao Pérez et al., 2020).

However, the severity of this condition remains uncertain due to the small population size, as well as country differences (Hauser et al., 2015), sex, and age (Henao-Perez et al., 2022). To our knowledge, two systematic reviews have revealed the prevalence of psychiatric problems associated with FM. It should be noted that previous studies specifically demonstrated a subtype of depression (MDD) or did not find out the effects of factors, including different questionnaires, sample sizes, evaluation sources, or countries of studies. Also, due to the increasing overall prevalence of psychology and psychiatry in the population, updating the prevalence of psychiatric symptoms with FM seems necessary (Loge-Hagen et al., 2019; Kleykamp et al., 2021a).

We conducted a contemporary systematic review and meta-analysis to evaluate the prevalence of anxiety or depression symptoms in patients with FM. We aimed to investigate whether country, age, and sex influenced the prevalence of these symptoms and whether prevalence varied based on the different questionnaires. Analyzing the available evidence to provide an estimated prevalence of depression and anxiety will hopefully increase awareness among clinicians, facilitating the screening of patients for existing evidence of these disorders and, if necessary, referral for treatment (Singh and Kaul, 2018; Yepez et al., 2022).

Section snippets

Methods

The current systematic review and meta-analysis were carried out per the 2020 PRISMA guidelines (Page et al., 2021). To reduce publication bias, two researchers independently conducted all stages of article search, evaluation, selection, and data extraction, resolving any discrepancies through discussion until a consensus was reached. ...

Study selection

A systematic search across three databases initially identified 1102 articles. After removal of duplicates, 929 articles remained for title and abstract screening. Of these, 272 articles were selected for full-text review, leading to 92 articles eligible for quality assessment. Finally, 84 studies were included in the meta-analysis, comprising 57 reporting anxiety and 81 reporting depression. The full study selection process is illustrated in Fig. 1. ...

Study characteristics

Table 1 presents an overview of the general ...

Discussion

To the best of our knowledge, this study is the first systematic review and meta-analysis that investigated the prevalence of overall anxiety and depression in fibromyalgia patients and related factors that affect the estimation of prevalence. We estimated that approximately half of fibromyalgia patients suffer from depression and anxiety. The elevated risk is compounded by the enduring pain and fatigue linked to fibromyalgia, resulting in social isolation and a diminished quality of life, ...

Conclusion

One in two patients with fibromyalgia suffers from depression or anxiety. Depression and anxiety not only exacerbate the experience of pain but also make it harder to manage symptoms of fibromyalgia, resulting in a challenging cycle of pain and mental health issues. To put it simply, the elevated levels of depression and anxiety in women with fibromyalgia are affected by an intricate combination of biological, psychological, and social factors, requiring a holistic treatment approach that deals ...

CRedit authorship contribution statement

Maryam Jafari: Writing – review & editing, Writing – original draft, Project administration, Investigation, Conceptualization. **Ervin Zadgari:** Writing – review & editing, Writing – original draft, Visualization, Investigation, Formal analysis. **Mohammad Amouzadeh-Lichahi:** Writing – review & editing, Writing – original draft, Investigation. **Aylin Vesali-Moghaddam:** Writing – original draft, Investigation. **Bita Amirian:** Writing – original draft, Resources, Investigation.

Nazanin Kazemian: Writing – ...

Informed consent

Informed consent was obtained from all individual participants included in the study. ...

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Declaration of competing interest

All authors declare no conflict of interest related to this study. ...

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