Relation Between Anxiety Levels And Perceived Fatigue In Postmenopausal Women With Breast Cancer: A Pilot Study

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Abstract

Background:

Breast cancer remains one of the most commonly diagnosed malignancies among women worldwide. Despite improvements in survival due to advancements in medical management, many patients continue to experience persistent symptoms that negatively affect their daily functioning and overall well-being. Among these, fatigue is one of the most frequently reported and debilitating complaints, particularly in postmenopausal women. Psychological factors, especially anxiety, are increasingly recognized as important contributors to symptom perception and severity.

Aim:

To investigate the relationship between anxiety levels and perceived fatigue in postmenopausal women with breast cancer.

Methodology:

A cross-sectional observational pilot study was conducted on 20 postmenopausal women diagnosed with breast cancer. Anxiety was assessed using the Generalized Anxiety Disorder-7 (GAD-7) scale, while fatigue was evaluated using the Fatigue Severity Scale (FSS). Descriptive statistics were used to summarize demographic and clinical characteristics. Pearson's correlation coefficient was applied to determine the relationship between anxiety and fatigue. Statistical significance was set at $p < 0.05$.

Results:

The mean anxiety score was 9.4 ± 3.2, indicating mild to moderate anxiety levels among participants. The mean fatigue score was 4.8 ± 1.1, suggesting moderate fatigue. A statistically significant moderate positive correlation was found between anxiety and fatigue ($r = 0.62$, $p = 0.003$), indicating that higher anxiety levels were associated with increased fatigue perception.

Conclusion:

The findings suggest that anxiety is significantly associated with perceived fatigue in postmenopausal women with breast cancer. Incorporating psychological screening and targeted anxiety management strategies into rehabilitation programs may help in reducing fatigue and enhancing quality of life. Further research with larger samples is recommended.

Keywords: Breast cancer, anxiety, fatigue, postmenopausal women, GAD-7, Fatigue Severity Scale

Introduction

Breast cancer continues to be a major global health concern, representing a substantial burden in terms of morbidity and mortality among women. Although early detection and advances in treatment have significantly improved survival rates, the long-term effects of the disease and its treatment remain a challenge for many patients. Survivorship is often accompanied by a range of physical and psychological symptoms that persist beyond active treatment and interfere with quality of life.

One of the most commonly reported symptoms in individuals with breast cancer is cancer-related fatigue. Unlike normal tiredness, this type of fatigue is persistent, disproportionate to activity levels, and not adequately relieved by rest. It can affect multiple domains, including physical performance, emotional well-being, and cognitive functioning. Patients frequently report difficulties in performing routine tasks, reduced participation in social activities, and decreased overall productivity.

Postmenopausal women may be particularly susceptible to fatigue due to a combination of physiological and treatment-related factors. Hormonal changes associated with menopause can influence energy levels, sleep quality, and mood. Additionally, cancer treatments such as chemotherapy, radiotherapy, and hormonal therapy may further exacerbate fatigue through mechanisms such as inflammation, metabolic alterations, and neuromuscular changes.

In addition to physical factors, psychological components play a critical role in shaping the experience of fatigue. Anxiety is one of the most prevalent psychological conditions observed in individuals with cancer. It may arise from concerns related to diagnosis, fear of recurrence, uncertainty about prognosis, and the burden of ongoing treatment. Anxiety can influence how patients perceive and respond to physical symptoms, often amplifying their severity.

The relationship between anxiety and fatigue is complex and bidirectional. Increased anxiety may contribute to fatigue through mechanisms such as disrupted sleep, heightened stress responses, and reduced engagement in physical activity. Conversely, persistent fatigue may also lead to increased psychological distress, creating a cyclical pattern that negatively impacts recovery.

Despite the recognition of these interactions, there is limited research specifically focusing on postmenopausal women with breast cancer—a group that may have unique physiological and psychosocial characteristics. Understanding the association between anxiety and fatigue in this population is essential for developing comprehensive, patient-centered rehabilitation strategies.

Therefore, the present pilot study was undertaken to examine the relationship between anxiety levels and perceived fatigue among postmenopausal women diagnosed with breast cancer.

Methodology

Study Design

This study was designed as a cross-sectional observational pilot study aimed at exploring the association between anxiety and fatigue in a specific clinical population.

Study Population

A total of 20 postmenopausal women diagnosed with breast cancer were recruited from oncology follow-up and rehabilitation services. Participants were selected using convenience sampling.

Inclusion Criteria

Participants were included if they:

- Were postmenopausal women aged between 45 and 65 years

- Had a confirmed diagnosis of breast cancer

- Were medically stable at the time of assessment

- Were able to understand and respond to questionnaires

- Provided informed consent to participate

Exclusion Criteria

Participants were excluded if they:

- Had a diagnosed severe psychiatric disorder

- Had neurological conditions affecting fatigue perception

- Had advanced metastatic disease with severe systemic symptoms

- Had cognitive impairments interfering with questionnaire completion

Outcome Measures

Generalized Anxiety Disorder-7 (GAD-7)

The GAD-7 is a widely used self-administered questionnaire designed to assess anxiety severity. It consists of seven items, each scored on a scale from 0 to 3. The total score ranges from 0 to 21, with higher scores indicating greater levels of anxiety. The scale has demonstrated good reliability and validity across various clinical populations.

Fatigue Severity Scale (FSS)

The Fatigue Severity Scale is used to evaluate the impact of fatigue on daily functioning. It includes nine items rated on a 7-point Likert scale. The final score is calculated as the mean of all items, with higher scores reflecting greater fatigue severity. A score of 4 or more is generally considered indicative of clinically significant fatigue.

Procedure

Eligible participants were approached during their routine follow-up visits. After explaining the purpose and procedure of the study, informed consent was obtained. Demographic and clinical details, including age and duration since diagnosis, were recorded.

Participants were then asked to complete the GAD-7 and FSS questionnaires in a quiet and comfortable setting. Assistance was provided if required, ensuring that responses reflected the participants' own perceptions.

Statistical Analysis

Data analysis was performed using descriptive and inferential statistical methods.

- Mean and standard deviation were calculated for demographic variables and outcome measures

- Pearson's correlation coefficient (r) was used to assess the relationship between anxiety and fatigue

- A p-value of less than 0.05 was considered statistically significant

Results

Participant Characteristics

The mean age of participants was 56.3 ± 5.1 years, indicating a mid-to-late postmenopausal population. The average duration since diagnosis was 14.2 ± 6.8 months, suggesting that most participants were in the post-treatment or follow-up phase.

Anxiety and Fatigue Levels

Participants demonstrated a mean GAD-7 score of 9.4 ± 3.2, reflecting mild to moderate anxiety levels. The mean FSS score was 4.8 ± 1.1, indicating moderate fatigue, with most participants experiencing clinically significant fatigue.

Correlation Findings

Pearson's correlation analysis revealed a moderate positive correlation between anxiety and fatigue ($r = 0.62$, $p = 0.003$). This finding indicates that participants with higher anxiety levels tended to report greater fatigue.

Discussion

The present study explored the association between anxiety and perceived fatigue in postmenopausal women with breast cancer. The findings revealed a statistically significant moderate positive correlation, suggesting that anxiety is an important factor influencing fatigue perception in this population.

Fatigue in cancer patients is widely recognized as a multifactorial symptom influenced by biological, psychological, and treatment-related factors. While physiological mechanisms such as inflammation and metabolic changes play a role, psychological factors are increasingly acknowledged as key contributors.

Anxiety may contribute to fatigue through several pathways. Increased psychological stress can lead to activation of the hypothalamic-pituitary-adrenal (HPA) axis, resulting in hormonal imbalances that affect energy levels. Additionally, anxiety is often associated with sleep disturbances, which can further exacerbate fatigue. Reduced physical activity due to fear or lack of motivation may also contribute to deconditioning and increased fatigue perception.

The findings of this study are consistent with existing literature that highlights the relationship between psychological distress and fatigue in cancer populations. Patients experiencing higher levels of anxiety often report greater symptom burden and reduced quality of life.

In postmenopausal women, these effects may be further amplified due to hormonal changes that influence mood, sleep, and energy regulation. The interaction between menopause-related changes

and cancer treatment effects creates a complex clinical picture that requires comprehensive management.

From a clinical perspective, these findings emphasize the importance of adopting a holistic approach in cancer rehabilitation. Physiotherapy interventions should not only focus on physical recovery but also consider psychological well-being. Screening for anxiety using simple tools like GAD-7 can help identify patients at risk.

Incorporating interventions such as relaxation training, breathing exercises, graded physical activity, and counseling may help in managing both anxiety and fatigue. Addressing psychological factors may enhance treatment outcomes and improve overall patient satisfaction.

Limitations

This study has certain limitations that should be acknowledged. The small sample size limits the generalizability of findings. The cross-sectional design does not allow for causal inferences. Additionally, reliance on self-reported measures may introduce response bias.

Conclusion

The findings of this pilot study indicate a significant association between anxiety levels and perceived fatigue in postmenopausal women with breast cancer. Higher anxiety levels are associated with greater fatigue severity.

Integrating psychological assessment and management into routine cancer care may help in reducing fatigue and improving quality of life. Future studies with larger sample **sizes and longitudinal designs are needed to further explore this relationship**

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