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PAIN CATASTROPHIZING, QUALITY OF LIFE AND SELF-EFFICACY AMONG PATIENTS WITH ARTHRITIS

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Abstract

Background: Arthritis is a chronic condition that may affect physical functioning, psychological well-being, and quality of life. Pain catastrophizing refers to an exaggerated negative response to actual or anticipated pain, whereas self-efficacy refers to an individual's confidence in managing symptoms and daily activities. These factors may influence how individuals experience and cope with arthritis. **Aim**: The present study aimed to compare pain catastrophizing, quality of life, and self-efficacy between male and female patients with arthritis. **Methodology**: A quantitative comparative approach was used to examine data from 30 patients with arthritis, comprising 15 males and 15 females. Three assessment tools were reported: the Pain Catastrophizing Scale, a quality-of-life scale, and a self-efficacy scale. The mean and standard deviation were recorded for each group, and the reported t-values were used to examine differences between male and female participants. **Results**: Male patients had a higher mean pain catastrophizing score (M = 77.21, SD = 8.42) than female patients (M = 60.07, SD = 6.34), with a reported t-value of 5.92. For quality of life, males had a mean score of 51.71 (SD = 11.27), whereas females had a mean score of 102.71 (SD = 6.29), with a reported t-value of 14.47. For self-efficacy, males obtained a mean score of 71.92 (SD = 10.10), compared with 64.71 (SD = 8.54) among females, with a reported t-value of 2.15. The reported significance level was 0.05 for all three comparisons.

Conclusion: The findings indicate differences in the mean scores of pain catastrophizing, quality of life, and self-efficacy between male and female patients with arthritis. Males demonstrated higher pain catastrophizing and self-efficacy scores, while females demonstrated a higher quality-of-life score. The clinical meaning of the quality-of-life difference depends on the scoring direction of the instrument. Further research with larger samples and clearly documented assessment procedures is recommended.

Keywords: Arthritis, pain catastrophizing, quality of life, self-efficacy, gender differences.

1. Introduction

Arthritis is a condition characterized by joint pain, stiffness, inflammation, and limitations in physical movement. Depending on the type and severity of arthritis, the condition may interfere with daily activities, independence, social participation, and psychological well-being. Arthritis management therefore requires attention not only to physical symptoms but also to the psychological and social factors associated with living with a chronic illness (Mayo Clinic, n.d.).

Pain is a multidimensional experience influenced by biological, psychological, and social factors. Individuals with similar physical symptoms may respond differently to pain depending on their thoughts, emotions, coping strategies, and beliefs about their ability to manage the condition. Understanding these psychological factors may help healthcare professionals develop more comprehensive approaches to arthritis management.

1.1 Pain Catastrophizing

Pain catastrophizing is a pattern of negative thinking associated with actual or anticipated pain. It generally involves rumination about pain, magnification of the threat associated with pain, and feelings of helplessness. Sullivan et al. (1995) developed and validated the Pain Catastrophizing Scale to assess these dimensions.

Among individuals with arthritis, pain catastrophizing may be associated with greater emotional distress and difficulties in coping with symptoms. Research by Wilk et al. (2022) examined pain catastrophizing in inflammatory and related rheumatic conditions and its relationship with health-related quality of life. Understanding pain-related thoughts may therefore be important when assessing the broader impact of arthritis.

1.2 Quality of Life

Quality of life refers to an individual's perceived well-being across relevant physical, psychological, and social domains. Arthritis can affect quality of life through persistent pain, fatigue, reduced mobility, and restrictions in everyday activities. The degree of impact may differ

between individuals depending on disease severity, available support, coping resources, and other personal circumstances.

Evaluating quality of life among patients with arthritis can provide useful information about the broader consequences of the condition beyond clinical symptoms alone. However, the interpretation of a quality-of-life score depends on the instrument used and whether higher scores represent better or poorer quality of life.

1.3 Self-Efficacy

Self-efficacy refers to an individual's belief in their ability to perform actions needed to manage particular situations or challenges. In arthritis, self-efficacy may relate to confidence in managing pain, maintaining daily activities, following treatment recommendations, and coping with physical limitations.

Tighe et al. (2020) examined pain catastrophizing and arthritis self-efficacy in relation to sleep disturbance and osteoarthritis symptom severity. Their findings support the relevance of psychological factors when considering the experience of arthritis symptoms. Nevertheless, associations identified in previous research do not establish that these factors directly cause differences in symptoms or functioning.

2. Review of Literature

Sullivan et al. (1995) developed the Pain Catastrophizing Scale and identified three central components: rumination, magnification, and helplessness. Their work established an important framework for measuring negative pain-related cognitions.

Tighe et al. (2020) investigated pain catastrophizing and arthritis self-efficacy as potential mediators of the association between sleep disturbance and osteoarthritis symptom severity in 517 patients with knee osteoarthritis. They reported that greater sleep disturbance was associated with greater symptom severity, both directly and indirectly through pain catastrophizing and

arthritis self-efficacy. Their findings highlight the importance of considering psychological and behavioural factors in arthritis care.

Wilk et al. (2022) investigated pain catastrophizing in rheumatoid arthritis, psoriatic arthritis, and axial spondyloarthritis, with particular attention to the biopsychosocial perspective and health-related quality of life. Their work provides a relevant background for studying the relationship between pain-related cognitions and perceived well-being in rheumatic conditions.

The available literature supports examining pain-related thoughts and self-efficacy alongside quality of life. However, differences between male and female patients should be investigated using clearly defined samples, validated instruments, and appropriate statistical analyses.

3. Objectives of the Study

1. To assess pain catastrophizing among male and female patients with arthritis.
2. To compare quality-of-life scores between male and female patients with arthritis.
3. To compare self-efficacy scores between male and female patients with arthritis.
4. To examine the reported differences in these three variables between the two groups.

4. Hypotheses

The following null hypotheses were formulated:

H_{01}: There is no significant difference in pain catastrophizing scores between male and female patients with arthritis.
H_{02}: There is no significant difference in quality-of-life scores between male and female patients with arthritis.
H_{03}: There is no significant difference in self-efficacy scores between male and female patients with arthritis.

5. Methodology

5.1 Research Design

The study used a quantitative comparative approach to examine differences in pain catastrophizing, quality of life, and self-efficacy between male and female patients with arthritis.

5.2 Sample

The total sample comprised 30 patients with arthritis.

Group	Number of participants
Male	15
Female	15
Total	30

The sampling technique, age range, recruitment setting, arthritis subtype, and inclusion and exclusion criteria were not provided in the supplied data and should be added from the original study records.

5.3 Assessment Tools

Three assessment tools were reported for the study.

1. Pain Catastrophizing Scale (PCS)

The Pain Catastrophizing Scale was attributed in the supplied study material to Michael J. L. Sullivan (2009), with standardization by D. Bansal (2014). The original development and validation paper for the PCS was published by Sullivan, Bishop, and Pivik in 1995. The exact version and standardization details used in the present study should be verified.

2. Quality-of-Life Scale

The quality-of-life scale was attributed in the supplied material to Sarikha Sharma and Dr. Nakhat Nasreen (2014). The exact instrument title, publication details, scoring range, and interpretation of higher scores need to be confirmed before final submission.

3. Self-Efficacy Scale

The self-efficacy scale was attributed in the supplied material to Dr. Arun Kumar Singh and Dr. Shruti Narain (2014). The exact version, scoring procedure, and publication details should be verified against the original source.

5.4 Statistical Analysis

The descriptive statistics were summarized using means and standard deviations. The supplied tables report t-values for comparisons between male and female patients. These values were used to describe the differences between groups.

An independent-samples t-test would be a suitable method for comparing two independent groups if its assumptions are satisfied. However, the exact statistical procedure used in the original analysis should be confirmed. The reported t-values and significance levels should also be checked against the raw data before finalizing the results.

6. Results

6.1 Comparison of Pain Catastrophizing Scores

Table 1. Pain catastrophizing among male and female patients with arthritis

Gender	N	Mean	SD	T value	Level of Significance
Male	15	77.21	8.42	5.92	0.05.
Female	15	60.07	6.34		

This result suggests a difference in pain catastrophizing scores between the two groups. If the reported statistic is confirmed by reanalysis, the null hypothesis of no difference would be rejected. The finding should be interpreted as a group difference in the measured scores, not as evidence that sex or gender causes pain catastrophizing.

6.2 Comparison of Quality-of-Life Scores

Table 2. Quality of life among male and female patients with arthritis

Gender	N	Mean	SD	T value	Level of Significance
Male	15	51.71	11.27	14.47	0.05.
Female	15	102.71	6.29		

The female group had a higher mean quality-of-life score (102.71) than the male group (51.71). The mean difference was 51.00 points. The supplied table reports a t-value of 14.47 at a significance level of 0.05.

6.3 Comparison of Self-Efficacy Scores

Table 3. Self-efficacy among male and female patients with arthritis

Gender	N	Mean	SD	T value	Level of Significance
Male	15	71.92	10.10	2.15	0.05.
Female	15	64.71	8.54		

The mean self-efficacy score was higher among male patients (71.92) than female patients (64.71). The mean difference was 7.21 points. The supplied table reports a t-value of 2.15 at a significance level of 0.05.

Assuming an independent-samples t-test with 28 degrees of freedom and a two-sided test, a t-value of 2.15 corresponds approximately to p = .040. This would be statistically significant at the .05 level. The result should nevertheless be verified against the original statistical analysis.

6.4 Summary of Findings

Variable	Male mean	Female mean	T value
Pain catastrophizing	77.21	60.07	5.92
Quality of life	51.71	102.71	14.47
Self-efficacy	71.92	64.71	2.15

The numerical results show higher pain catastrophizing and self-efficacy scores among male patients and a higher quality-of-life score among female patients. Interpretation of statistical significance and the clinical meaning of the differences requires verification of the original analyses and scoring instructions.

7. Discussion

The present study examined differences in pain catastrophizing, quality of life, and self-efficacy between male and female patients with arthritis. The supplied results indicate different mean scores across the three variables.

7.1 Pain Catastrophizing

Male patients obtained a higher mean pain catastrophizing score than female patients. This finding indicates that the male group reported higher scores on the measure used in this study. Pain catastrophizing includes rumination, magnification, and helplessness related to pain (Sullivan et al., 1995).

The result is relevant because negative pain-related cognitions have been investigated in relation to arthritis symptoms and health-related quality of life (Tighe et al., 2020; Wilk et al., 2022). However, the present data do not establish why the group difference occurred. Disease severity, duration of arthritis, pain intensity, psychological distress, social support, and other factors could potentially contribute to differences, but these variables were not available for analysis.

7.2 Quality of Life

Female patients had a higher mean quality-of-life score than male patients. This was the largest numerical difference among the three reported outcomes.

Quality of life is an important consideration in chronic arthritis because symptoms may affect mobility, daily activities, and social and psychological functioning. Nevertheless, a higher numerical score does not necessarily indicate better quality of life. The direction of scoring for the instrument attributed to Sharma and Nasreen (2014) must be confirmed before this finding can be interpreted as a difference in well-being.

Further research should examine quality-of-life scores alongside clinical indicators, functional limitations, and relevant demographic characteristics.

7.3 Self-Efficacy

Male patients obtained a higher mean self-efficacy score than female patients. Self-efficacy is relevant to arthritis management because confidence in one's ability to manage pain and daily activities may influence coping behaviours.

Tighe et al. (2020) reported that arthritis self-efficacy was associated with osteoarthritis symptom severity in their study of patients with knee osteoarthritis. The present results are consistent with the broader relevance of self-efficacy in arthritis research, but they do not establish a relationship between self-efficacy and pain catastrophizing or quality of life within this sample. Such relationships would require individual-level data and appropriate correlation or regression analyses.

7.4 Overall Interpretation

The results suggest that the psychological and quality-of-life profiles of male and female patients may differ. However, the sample consisted of only 30 participants, and the study examined group means rather than the relationships among the three variables.

The findings should therefore be considered preliminary. A larger study that accounts for disease characteristics and relevant confounding factors would provide stronger evidence regarding differences between groups.

8. Conclusion

The present study compared pain catastrophizing, quality of life, and self-efficacy among 30 patients with arthritis, including 15 males and 15 females.

The supplied data showed that male patients had higher mean pain catastrophizing and self-efficacy scores, while female patients had a higher mean quality-of-life score. The reported t-values indicate differences between the groups, although the calculations and the significance of each result should be confirmed from the original dataset.

The findings highlight the value of assessing psychological factors and quality of life in patients with arthritis. However, the direction of the quality-of-life difference cannot be interpreted without confirming the scale's scoring system. The small sample and lack of demographic and clinical information also limit the conclusions that can be drawn.

Future studies should use larger and more diverse samples, clearly document assessment instruments, and examine the associations among pain catastrophizing, quality of life, and self-efficacy.

9. Limitations of the Study

1. The sample was small, comprising only 30 patients.
2. Information about age, arthritis subtype, disease duration, pain severity, and treatment status was unavailable.

3. The sampling procedure and study setting were not specified in the supplied material.

4. Complete bibliographic and scoring details for the quality-of-life and self-efficacy instruments require verification.

5. The reported t-values and descriptive statistics should be checked against the original dataset.

6. The available results do not establish causal relationships or associations among the three measured variables.

7. The generalizability of the findings is limited by the sample size and the lack of detailed participant characteristics.

10. Recommendations

1. Conduct future research with a larger sample of patients with arthritis.

2. Record demographic and clinical characteristics that may influence pain, functioning, and quality of life.

3. Use validated instruments with clearly documented scoring procedures.

4. Verify statistical calculations and report exact p-values, degrees of freedom, confidence intervals, and effect sizes where appropriate.

5. Examine the relationships among pain catastrophizing, quality of life, and self-efficacy using suitable statistical methods.

6. Consider psychological assessment and appropriate support as part of comprehensive arthritis care.

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