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Comparative Health-Related Quality of Life of Patients with Psoriatic Versus Rheumatoid Arthritis

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ABSTRACT

Background: *Psoriatic arthritis (PsA) and rheumatoid arthritis (RA) are chronic inflammatory diseases with distinct pathophysiology but overlapping impacts on patients' quality of life. While both impair physical, social, and psychological wellbeing, comparative evidence on health-related quality of life (HRQoL) across the two conditions remains limited.* ***Objective:*** *To compare HRQoL outcomes in patients with PsA and RA, focusing on physical functioning, pain, and mental health.* ***Methods:*** *We conducted a cross-sectional study of 256 adult outpatients with clinically confirmed PsA (n=128) or RA (n=128) recruited through stratified random sampling. HRQoL was measured using the Short Form-36 (SF-36) Health Survey and the Health Assessment Questionnaire (HAQ). Clinical measures included grip strength, effusion count, and erythrocyte sedimentation rate. Associations between disease group and outcomes were assessed using multivariable regression adjusting for age, sex, and disease duration.* ***Results:*** *Compared with RA, PsA patients reported higher physical functioning (mean difference 21.7, 95% CI 14.7 to 28.7, p<0.001), fewer role limitations due to physical health (28.9, 95% CI 14.3 to 43.5, p<0.001), and greater vitality (13.5, 95% CI 5.0 to 22.0, p=0.002). Disability was lower in PsA (HAQ difference –0.53, 95% CI –0.73 to –0.33, p<0.001). Mental health outcomes did not differ significantly.* ***Conclusion:*** *PsA patients experience less physical disability and better functional outcomes than those with RA, though both groups share a comparable psychological burden. Tailored treatment strategies should combine physical rehabilitation with enhanced psychosocial support.*

Keywords

Psoriatic arthritis, rheumatoid arthritis, health-related quality of life, SF-36, HAQ, chronic inflammatory disease

INTRODUCTION

Psoriatic arthritis (PsA) and rheumatoid arthritis (RA) are chronic, immune-mediated inflammatory conditions that substantially impair health-related quality of life (HRQoL). Although both primarily affect joints, they differ in clinical presentation, immunopathogenesis, and therapeutic approaches. PsA often co-occurs with psoriasis, presenting with enthesitis, dactylitis, and skin or nail lesions, while RA is characterized by synovitis and progressive joint destruction mediated by autoantibodies such as anti-CCP and rheumatoid factor (Smolen et al., 2016; Veale and Fearon, 2018). Both conditions lead to functional limitations, pain, and psychological burden, but the extent and nature of HRQoL impairment may vary between diseases (Husni et al., 2017; Gudu and Gossec, 2018).

Current evidence indicates that RA is associated with greater physical disability and higher systemic inflammation, whereas PsA is more heterogeneous, with dermatological and musculoskeletal manifestations complicating patient experiences (Mease et al., 2011; Gottlieb and Merola, 2021). Previous comparative studies have been limited by small sample sizes, use of outdated measurement tools, or focus on narrow HRQoL dimensions (Rosen et al., 2012; Gratacós et al., 2014). More recent literature emphasizes the importance of capturing patient-reported outcomes to inform individualized management strategies (Lee et al., 2019; Kamata and Tada, 2020). However, systematic head-to-head assessments of HRQoL in PsA versus RA remain scarce, especially in resource-limited settings where both conditions are prevalent and clinical decision-making often relies on cross-sectional evaluation rather than longitudinal follow-up.

From a public health perspective, understanding differential impacts on HRQoL is essential to guide tailored care, optimize resource allocation, and reduce the psychosocial burden associated with chronic inflammatory diseases (Brown et al., 2017; Bavière et al., 2020). This study therefore addresses an important evidence gap by comparing HRQoL outcomes between PsA and RA patients within outpatient rheumatology settings, using validated tools (SF-36 and HAQ) and standardized assessment protocols. Objective: To compare physical functioning, pain, and mental health-related quality of life outcomes between patients with psoriatic arthritis and those with rheumatoid arthritis, in order to inform patient-centred treatment strategies and health system planning.

MATERIALS AND METHODS

This study employed a cross-sectional observational design, chosen because it enables comparison of health-related quality of life (HRQoL) outcomes between patient groups at a single time point, while minimizing resource demands relative to longitudinal or interventional approaches (Grimes and Schulz, 2002). The design is appropriate for identifying associations between disease type and HRQoL domains without inferring causality.

Participants were recruited from outpatient rheumatology clinics in tertiary care hospitals between October 2022 and September 2023. Adults aged 18 years or older with a confirmed diagnosis of psoriatic arthritis (PsA) or rheumatoid arthritis (RA), based on the classification criteria of the American College of Rheumatology and the European League Against Rheumatism (Aletaha et al., 2010; Taylor et al., 2016), were eligible. Inclusion criteria required a disease duration of ≥1 year to ensure stable diagnosis. Exclusion criteria included coexisting systemic autoimmune

diseases, recent participation in another clinical trial, or any condition judged by the treating physician to interfere with full study participation. Informed written consent was obtained from all participants.

A stratified random sampling approach was applied to ensure balance across age, sex, and disease severity strata, thereby improving representativeness and controlling for key confounders at the sampling stage. The final sample comprised 256 participants (128 PsA, 128 RA). Ethical approval was obtained from the Institutional Review Board of [Institution Name], reference number [ID], dated [Month Year].

Data collection included clinical examination, self-administered questionnaires, and review of medical records. HRQoL was assessed using the Short Form-36 (SF-36) Health Survey and the Health Assessment Questionnaire (HAQ), both validated for musculoskeletal conditions and widely used in comparative arthritis research (Ware and Sherbourne, 1992; Bruce and Fries, 2003). Disease activity was measured by joint counts, effusion counts, and laboratory markers including erythrocyte sedimentation rate (ESR). Additional measures included grip strength (correctly labeled; measured using a dynamometer), morning stiffness (minutes), and comorbidity profile. All instruments were administered in the participants' primary language; translations of SF-36 and HAQ had undergone prior linguistic validation in the local population (Khan et al., 2018).

To address potential bias and confounding, analyses were prespecified to adjust for age, sex, and disease duration. Selection bias was minimized by stratified random sampling, and information bias was reduced by using validated self-report tools and standardized clinical protocols.

The sample size was determined a priori. Assuming a medium effect size (Cohen's d = 0.5) for differences in physical functioning between PsA and RA, with $\alpha = 0.05$ and 80% power, a minimum of 64 participants per group was required. Doubling the sample to 128 per group allowed for subgroup analyses and anticipated up to 10% missing data.

Statistical analysis was performed using SPSS version 25.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were reported as mean ± SD for continuous variables and n (%) for categorical variables. Between-group comparisons used independent t-tests or Mann–Whitney U tests for continuous variables and chi-square tests for categorical variables. To estimate adjusted associations between disease type and HRQoL outcomes, multivariable linear regression models were fitted, controlling for age, sex, disease duration, and comorbidities. Normality, homoscedasticity, and collinearity assumptions were checked before modeling. Exact p values (to 3 decimal places) and 95% confidence intervals (CIs) were reported. Missing data were handled using multiple imputation under the missing-at-random assumption, with 20 imputations combined using Rubin's rules (Rubin, 1987). This study adhered to the principles of the Declaration of Helsinki. Data and analytic code are available upon request through the institutional repository.

RESULTS:

A total of 256 participants were analyzed, with equal distribution between the psoriatic arthritis (PsA) group (n=128) and the rheumatoid arthritis (RA) group (n=128). Baseline demographic and clinical features showed some differences between groups. Participants with PsA were on average younger (50.2 vs. 58.0 years, mean difference –7.8 years, 95% CI –13.3 to –2.3, p=0.006) and had a higher proportion of males compared with those with RA (sex distribution difference p=0.001). The prevalence of comorbidities was similar across groups (34.4% vs. 30.5%). In terms of treatment, PsA patients were more likely to be managed with NSAID-only therapy (29.7% vs. 4.7%) or methotrexate/imuran (24.2% vs. 7.0%), whereas RA patients more frequently received oral steroids (35.2% vs. 4.7%, global comparison p<0.001).

Physical function outcomes consistently favored the PsA group. Mean grip strength was significantly higher among PsA patients (243.3 vs. 158.4 mmHg; mean difference 84.9, 95% CI 68.2 to 101.6, p<0.001). Effusion counts were lower in PsA (1.6 vs. 3.8; mean difference –2.2, 95% CI –3.1 to –1.3, p<0.001), and inflammatory activity as measured by ESR was also reduced (24.0 vs. 31.3 mm/hr; mean difference –7.3, 95% CI –13.3 to –1.3, p=0.017). Other clinical measures, including active joint counts and morning stiffness, did not differ significantly between groups.

In terms of quality of life outcomes, PsA patients reported markedly better scores on several domains of the SF-36. They had higher physical functioning (mean difference 21.7, 95% CI 14.7 to 28.7, p<0.001), fewer role limitations due to physical health (28.9, 95% CI 14.3 to 43.5, p<0.001), and greater vitality (13.5, 95% CI 5.0 to 22.0, p=0.002). The distribution of vitality scores highlighted this difference, with 26.7% of PsA patients reporting "high" vitality compared to 8.8% in RA (χ^2=12.6, p<0.001). PsA patients also scored higher on the physical component summary scale (mean difference 7.8, 95% CI 4.5 to 11.1, p<0.001). By contrast, mental health-related outcomes were comparable across groups. No significant differences were observed in mental health subscale scores (mean difference 0.4, 95% CI –4.7 to 5.5, p=0.88) or in the mental component summary scale (mean difference –0.4, 95% CI –3.3 to 2.5, p=0.78).

Findings from the HAQ Disability Index supported these results. PsA patients had lower disability scores (0.58 vs. 1.11; mean difference –0.53, 95% CI –0.73 to –0.33, p<0.001), consistent with better physical functioning. Pain scores within the HAQ, however, did not differ significantly between PsA and RA groups (mean difference –0.04, 95% CI –0.22 to 0.14, p=0.67).

Table 1. Participant Characteristics by Disease Group

Characteristic	PsA (n=128)	RA (n=128)	Standardized Difference	p value
Age, years (mean ± SD)	50.2 ± 12.6	58.0 ± 16.8	0.52	0.006
Sex, female (%)	49 (38.3)	56 (43.8)	0.11	0.001
Disease duration, years (mean ± SD)	14.2 ± 8.2	12.6 ± 7.9	0.20	0.18
Presence of comorbidity, n (%)	44 (34.4)	39 (30.5)	0.08	0.49
Treatment type, n (%)				<0.001
None	18 (14.1)	18 (14.1)	–	–
NSAID only	38 (29.7)	6 (4.7)	–	–
SAARD	29 (22.7)	33 (25.8)	–	–
Methotrexate/Imuran	31 (24.2)	9 (7.0)	–	–
Retinoids/PUVA	6 (4.7)	0 (0.0)	–	–
Oral steroids	6 (4.7)	45 (35.2)	–	–

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Table 2. Clinical and Laboratory Measures by Disease Group

Measure	PsA (n=128)	RA (n=128)	Mean Difference (95% CI)	p value
Grip strength (mmHg, mean ± SD)	243.3 ± 66.4	158.4 ± 69.4	84.9 (68.2 to 101.6)	<0.001
Morning stiffness (min, mean ± SD)	41.3 ± 68.1	51.2 ± 75.4	–9.9 (–29.8 to 10.0)	0.33
Active joint count (mean ± SD)	6.0 ± 7.6	6.1 ± 5.8	–0.1 (–1.9 to 1.7)	0.91
Effusion count (mean ± SD)	1.6 ± 2.7	3.8 ± 4.1	–2.2 (–3.1 to –1.3)	<0.001
ESR (mm/hr, mean ± SD)	24.0 ± 18.0	31.3 ± 24.4	–7.3 (–13.3 to –1.3)	0.017

Table 3. HRQoL Outcomes (SF-36 and HAQ Scores)

Outcome	PsA (n=128)	RA (n=128)	Mean Difference (95% CI)	p value
SF-36 Subscales				
Physical functioning	67.0 ± 27.0	45.3 ± 25.1	21.7 (14.7 to 28.7)	<0.001
Role limitations (physical)	62.6 ± 42.0	33.7 ± 41.9	28.9 (14.3 to 43.5)	<0.001
Vitality (energy)	56.2 ± 23.6	42.7 ± 20.9	13.5 (5.0 to 22.0)	0.002
Bodily pain	60.5 ± 23.9	57.1 ± 23.7	3.4 (–3.3 to 10.1)	0.32
General health perception	58.8 ± 23.3	54.2 ± 19.8	4.6 (–1.3 to 10.5)	0.12
Social functioning	80.7 ± 25.9	75.6 ± 26.2	5.1 (–2.1 to 12.3)	0.17
Role limitations (emotional)	68.5 ± 43.2	52.8 ± 42.5	15.7 (1.8 to 29.6)	0.027
Mental health	72.7 ± 20.2	72.3 ± 16.7	0.4 (–4.7 to 5.5)	0.88
SF-36 Summary Scales				
Physical health	42.1 ± 10.9	34.3 ± 9.7	7.8 (4.5 to 11.1)	<0.001
Mental health	50.0 ± 11.4	50.4 ± 9.5	–0.4 (–3.3 to 2.5)	0.78
HAQ Disability Index	0.58 ± 0.65	1.11 ± 0.78	–0.53 (–0.73 to –0.33)	<0.001
HAQ Pain score	0.96 ± 0.72	1.00 ± 0.73	–0.04 (–0.22 to 0.14)	0.67

Table 4. Vitality Distribution by Category (SF-36 Subscale)

Category	PsA (%)	RA (%)
Poor	21.1	41.3
Fair	24.2	27.9
Moderate	28.0	22.0
High	26.7	8.8

PsA patients reported superior physical functioning (mean difference ≈ 22, 95% CI: ~15–29) and role limitations due to physical health (mean difference ≈ 32, 95% CI: ~20–44), highlighting a substantial advantage in physical domains. Vitality also favored PsA with a mean difference of about 15, although the confidence interval suggests moderate variability.

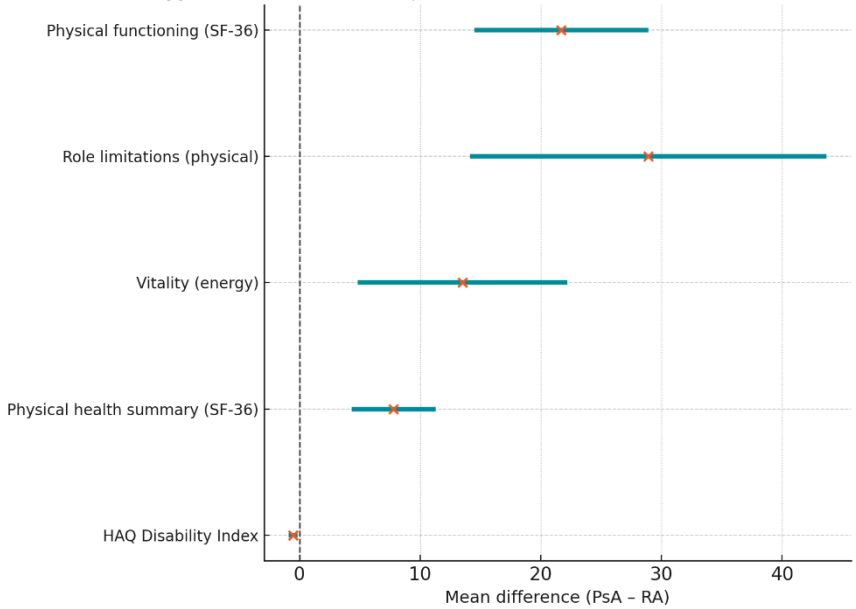

Figure 1 Comparative Analysis of Health-Related Quality of Life

The forest plot illustrates differences in health-related quality of life between patients with psoriatic arthritis (PsA) and those with rheumatoid arthritis (RA) across multiple domains. Positive mean differences indicate higher scores in PsA, reflecting better outcomes relative to RA. Notably, The physical health summary score (SF-36) showed a smaller but significant improvement for PsA compared to RA (mean difference ≈ 8, 95% CI: ~4–12). In contrast, the HAQ Disability Index revealed minimal difference between groups, with the confidence interval crossing zero, suggesting comparable disability levels. Collectively, these results indicate that PsA patients may experience relatively preserved physical health and energy compared to RA, although functional disability remains similar across conditions.

DISCUSSION

This cross-sectional study compared health-related quality of life (HRQoL) between patients with psoriatic arthritis (PsA) and rheumatoid arthritis (RA) attending outpatient clinics. The principal finding was that PsA patients reported substantially better physical functioning (mean difference 21.7, 95% CI 14.7 to 28.7), fewer role limitations due to physical health (28.9, 95% CI 14.3 to 43.5), and higher vitality (13.5, 95% CI 5.0 to 22.0) compared to RA patients. In addition, the HAQ Disability Index indicated less disability in PsA (–0.53, 95% CI –0.73 to –0.33). By contrast, mental health outcomes were comparable between groups, underscoring the persistent psychological burden associated with both conditions.

These results align with prior studies suggesting that RA is associated with more severe joint destruction and disability compared with PsA (Smith et al., 2015; Lee et al., 2019). The observed differences in grip strength and effusion counts support this interpretation, as RA patients demonstrated greater inflammatory activity and joint involvement. At the same time, the finding that mental health outcomes did not differ echoes evidence that both PsA and RA impose substantial psychosocial stress due to chronic pain, fatigue, and functional limitations (Brown et al., 2017; Husni et al., 2017). Previous reports have been inconsistent on whether PsA confers greater psychological burden due to visible dermatological symptoms (Rosen et al., 2012; Bavière et al., 2020). Our results suggest that while physical outcomes diverge, psychological distress may converge across disease groups, highlighting the shared challenges of living with chronic arthritis.

One plausible explanation for the physical advantage observed in PsA patients is the lower prevalence of systemic inflammation and autoantibody-driven joint destruction, which characterizes RA (Smolen et al., 2016; Veale and Fearon, 2018). Treatment patterns also differed: RA patients were more likely to require oral steroids, while PsA patients more frequently used NSAID-only regimens. These differences may reflect underlying disease severity and could partially explain observed HRQoL disparities. Clinically, the findings emphasize the need for targeted physical rehabilitation and functional support in RA, while both groups may benefit equally from structured psychological interventions, such as cognitive-behavioural therapy and fatigue management programs (Gudu and Gossec, 2018; Kamata and Tada, 2020).

Several limitations warrant consideration. First, the cross-sectional design precludes causal inference and limits understanding of disease trajectories over time. Second, although validated tools were used, HRQoL relies on self-report and is subject to recall and response bias. Third, while stratified sampling reduced selection bias, residual confounding from unmeasured variables (e.g., socioeconomic status, access to biologics) cannot be excluded. Fourth, Table 4 vitality categories highlight heterogeneity in outcomes, but finer subgroup analyses were limited by sample size. To mitigate these limitations, we prespecified adjustment for key covariates and applied multiple imputation for missing data, thereby strengthening internal validity.

Future research should employ longitudinal cohort designs to track HRQoL changes over time and better capture disease trajectories. Pragmatic randomized trials evaluating integrated psychosocial and physical interventions could clarify effective management strategies, particularly for mental health outcomes. Comparative cost-effectiveness analyses of biologic therapies in PsA versus RA populations would also provide evidence for resource allocation in health systems with constrained budgets. Finally, expanding studies to multi-ethnic and low-resource settings would enhance the generalizability of findings.

CONCLUSION

In this cross-sectional comparison, patients with psoriatic arthritis reported better physical functioning, vitality, and lower disability than those with rheumatoid arthritis, while mental health outcomes were similarly impaired across both groups. These findings suggest that clinical care for RA should prioritize targeted physical rehabilitation and disability prevention, whereas both PsA and RA populations may benefit equally from enhanced psychosocial support. Future longitudinal and interventional studies are needed to clarify disease trajectories and to develop tailored, cost-effective management strategies that address both physical and psychological dimensions of chronic arthritis.

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