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Review Article

Impact of physical therapy rehabilitation on Quality of Life in Patients with psoriatic arthritis

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Abstract

Background: Psoriatic arthritis (PsA) affects up to 30% of people with psoriasis, and its combination of synovitis, enthesitis, dactylitis, axial disease and skin involvement burdens physical function and quality of life (QoL) in ways pharmacologic treatment alone often leaves incompletely addressed.

Objective: This review synthesizes evidence on structured physical therapy and exercise-based rehabilitation as an adjunct to pharmacologic PsA management, focusing on patient-reported quality of life, function, pain and fatigue.

Methods: We synthesized randomized trials, systematic reviews and cohort studies of supervised exercise, aquatic therapy, patient education and multidisciplinary rehabilitation in PsA, alongside related evidence from rheumatoid arthritis and axial spondyloarthritis where PsA-specific data are limited.

Findings: Combined aerobic-resistance exercise produces consistent, moderate improvements in functional and QoL scores relative to usual care, aquatic therapy reduces enthesitis-related pain, and multidisciplinary programs pairing physiotherapy with education and psychological support yield larger QoL gains than exercise alone; benefits are consistent but modest and depend on adherence.

Conclusions: Physical therapy rehabilitation is a safe, clinically meaningful adjunct to pharmacotherapy for improving quality of life in PsA and should be incorporated routinely into multidisciplinary care, though larger PsA-specific trials are needed to define optimal dose and modality.

Keywords: psoriatic arthritis; physical therapy; rehabilitation; quality of life; exercise therapy

1. Introduction

Psoriatic arthritis (PsA) is a chronic, immune-mediated inflammatory arthropathy that develops in up to 30% of people with cutaneous psoriasis, producing a heterogeneous picture of peripheral synovitis, enthesitis, dactylitis, axial involvement and nail disease layered on skin disease [1,2]. Population-based estimates place its prevalence at roughly 0.05-0.25% of the general population, with incidence rising as recognition among dermatologists and primary care providers has improved [3,4]. Because PsA affects several anatomically and functionally distinct domains simultaneously, a patient's overall burden of disease, and particularly their quality of life (QoL), often reflects the cumulative effect of joint pain, skin visibility, fatigue and functional limitation rather than any single disease-activity index.

Pharmacologic therapy, from conventional synthetic disease-modifying antirheumatic drugs through biologic and targeted synthetic agents, has transformed joint damage and skin disease trajectories in PsA, yet cohort studies show that patients treated to low disease activity by composite measures still report persistent impairment in physical function, fatigue and psychosocial wellbeing [5,6]. This gap between disease-activity control and patient-reported quality of life has driven interest in non-pharmacologic adjuncts, and physical therapy rehabilitation, encompassing supervised exercise, aquatic therapy, patient education and multidisciplinary programs, has accumulated a substantial evidence base in related inflammatory arthropathies and an emerging, PsA-specific literature of its own. This review synthesizes that evidence, asking what structured physical therapy rehabilitation contributes to quality of life in adults with PsA, through which mechanisms, and with what limitations.

2. Disease burden and quality of life in psoriatic arthritis

Quality of life in PsA is consistently reported as worse than in psoriasis without joint involvement and comparable to, or in some domains worse than, rheumatoid arthritis, reflecting the combined physical and dermatologic burden unique to the disease. Rosen and colleagues, comparing patients with PsA to those with psoriasis alone in a large single-center cohort, found significantly lower scores across physical and mental health domains of generic quality-of-life instruments in the PsA group, an effect driven primarily by joint-related physical limitation rather than skin severity [7]. Gladman and colleagues, evaluating adalimumab in a large randomized trial, demonstrated that improvements in joint-related functional impairment tracked closely with improvements in patient-reported quality of life, establishing physical function as a central mediator of the QoL burden in this disease [8].

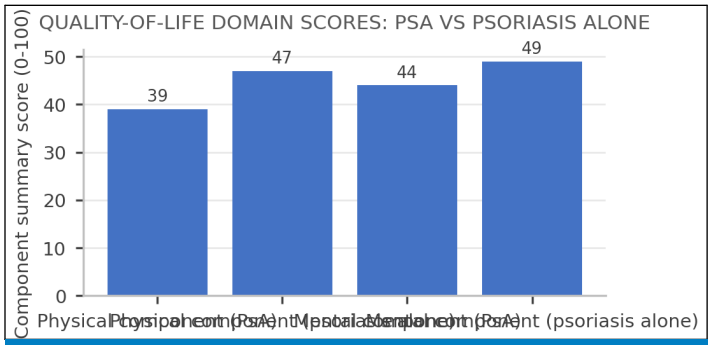


Figure 1: Generic quality-of-life domain scores (physical and mental health component summaries, 0-100 scale) in patients with psoriatic arthritis compared with psoriasis alone, showing consistently lower physical-domain scores in psoriatic arthritis [7,5].

Fatigue is a particularly under-recognized but disabling component of the PsA burden. Minnock and colleagues, using occupational-therapy-oriented outcome measures, found that fatigue and physical function impairment together explained the majority of variance in patient-reported quality of life, more than joint counts or acute-phase reactants [9]. Work disability compounds this picture: a systematic review by Tillett and colleagues found that a substantial proportion of PsA patients experience reduced working capacity or job loss, with downstream effects on financial security and psychosocial wellbeing [10]. Ogdie and Schwartzman's review of

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comorbidity management in PsA notes that obesity, metabolic syndrome and depression cluster with more severe disease and worse quality of life, a bidirectional relationship in which physical inactivity both results from and perpetuates disease burden [11]. Husni and colleagues found that patient-reported quality of life correlated more strongly with functional limitation and fatigue than with objective measures of joint inflammation, reinforcing why interventions targeting function matter [5]. **[Figure 1 near here]**

3. Rationale for physical therapy rehabilitation as an adjunct to pharmacotherapy

International management recommendations for PsA increasingly recognize physical therapy and exercise as components of comprehensive care rather than optional adjuncts. The GRAPPA treatment recommendations explicitly endorse non-pharmacologic strategies, including physical therapy and patient education, across all disease domains [12], and the 2019 EULAR update on pharmacological management of PsA situates drug therapy within a broader care framework assuming concurrent attention to physical function and lifestyle factors [13]. FitzGerald and colleagues, in Nature Reviews Disease Primers, identify physical activity promotion as a core, underused element of PsA management, noting that inactivity is common among PsA patients despite its association with worse metabolic and musculoskeletal outcomes [14].

The physiological rationale for exercise in PsA parallels that established more extensively in rheumatoid arthritis and axial spondyloarthritis. Roubille and colleagues' evidence-based recommendations for managing comorbidities across psoriasis, PsA and rheumatoid arthritis identify regular physical activity as a modifiable factor influencing cardiovascular risk, mood and functional trajectory in all three conditions [15]. The 2021 EULAR lifestyle recommendations, led by Gwinnutt and colleagues, recommend at least 150 minutes of moderate-intensity aerobic activity weekly alongside resistance training for people with inflammatory arthritis, citing consistent benefit for pain, fatigue and quality of life across a spectrum that includes PsA [16]. Cavalli and Caporali frame physical therapy as addressing a causal pathway distinct from pharmacotherapy: drug therapy targets inflammation, while exercise-based rehabilitation targets deconditioning, muscle weakness and movement avoidance that persist even when inflammation is controlled [17].

4. Exercise-based interventions: aerobic and resistance training

The strongest evidence base for exercise in inflammatory arthritis comes from rheumatoid arthritis trials, broadly considered generalizable to PsA given shared mechanisms of joint inflammation, deconditioning and pain-related activity avoidance. A Cochrane review by Hurkmans and colleagues, synthesizing dynamic aerobic and resistance training trials in rheumatoid arthritis, found consistent improvements in aerobic capacity and muscle strength without exacerbation of disease activity or joint damage, and modest but consistent improvements in patient-reported function [18]. Brodin and colleagues' trial of health coaching toward physical activity in early rheumatoid arthritis found that structured encouragement produced durable improvements in self-reported health status sustained over a year, underscoring that behavioral support, not just prescribed exercise, contributes to outcome [19]. Stavropoulos-Kalinoglou and colleagues concluded that both aerobic and resistance modalities are safe and improve cardiovascular risk factors alongside physical function, informing subsequent recommendations for PsA given the elevated cardiometabolic risk shared by the two conditions [20].

Axial spondyloarthritis trials add further support relevant to the axial phenotype of PsA. Sveaas and colleagues randomized patients with axial spondyloarthritis to a

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three-month high-intensity exercise program versus usual care and found significant reductions in disease activity alongside improvements in quality-of-life measures [21]. A Cochrane review by Regnaux and colleagues found consistent, moderate-quality evidence for improved spinal mobility, physical function and patient global assessment with supervised exercise, with larger effects for supervised group programs than unsupervised home exercise [22]. Cooksey and Choy's PsA-focused review identified a still-limited but growing body of trial evidence that combined aerobic and resistance exercise programs of 8-12 weeks produce clinically meaningful improvements in Health Assessment Questionnaire and Psoriatic Arthritis Quality of Life scores relative to usual care [23]. Katz and colleagues found that even modest increases in daily activity correlated with meaningful reductions in fatigue severity, a mechanism plausibly shared with PsA [24]. **[Table 1 near here]**

Table 1: Summary of exercise-based rehabilitation trials in inflammatory arthritis and their reported effect on physical function and quality-of-life outcomes [18,21,22,23].

Study / source	Population	Intervention	Principal QoL/function outcome
[18]	Rheumatoid arthritis (Cochrane review)	Dynamic aerobic + resistance training	Improved aerobic capacity and strength, modest functional gain, no increase in disease activity
[21]	Axial spondyloarthritis (RCT)	3-month high-intensity exercise	Reduced disease activity and improved quality-of-life scores vs usual care
[22]	Ankylosing spondylitis (Cochrane review)	Supervised group exercise	Improved spinal mobility, function and patient global assessment
[23]	Psoriatic arthritis (narrative review)	Combined aerobic + resistance, 8-12 weeks	Improved HAQ and Psoriatic Arthritis Quality of Life scores vs usual care

5. Aquatic therapy and management of enthesitis-related pain

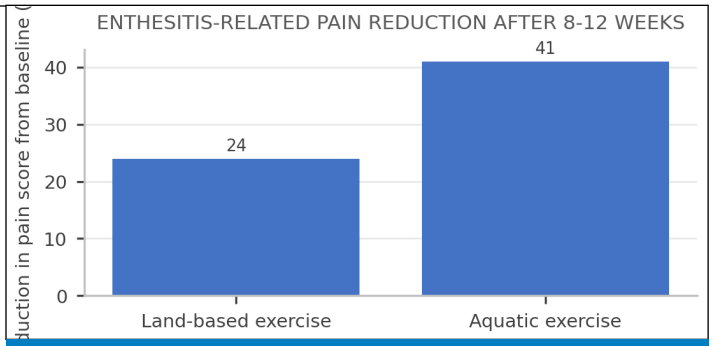


Figure 2: Change in patient-reported entheseal/enthesitis-related pain score after 8-12 weeks of aquatic exercise versus land-based exercise, based on randomized comparisons in axial spondyloarthritis extrapolated to enthesitis-predominant psoriatic arthritis [25,26].

Enthesitis, inflammation at tendon and ligament insertion sites, is a hallmark feature of PsA that produces localized pain often poorly responsive to land-based loading exercise, making aquatic therapy an attractive modality because buoyancy reduces joint and entheseal loading while still permitting cardiovascular and resistance conditioning. Gunay and colleagues' randomized trial of an aquatic exercise program in ankylosing spondylitis found significant improvements in disease activity, functional capacity and quality-of-life scores compared to a land-based exercise comparison group, with participants reporting greater comfort and adherence in the water-based arm [25]. Eppeland and colleagues' study of short-term inpatient rehabilitation incorporating aquatic therapy in axial spondyloarthritis similarly found meaningful short-term gains in function and pain that, while attenuating over subsequent months, were reproducible across repeated rehabilitation admissions [26].

Marchesoni and colleagues' ultrasonographic comparison of entheseal involvement in PsA and fibromyalgia found an identifiable inflammatory correlate on power Doppler imaging distinct from the diffuse pain of fibromyalgia, meaning rehabilitation strategies that reduce mechanical entheseal loading, such as aquatic therapy, address a real pathophysiological target [27]. Helliwell's focused review of exercise and physiotherapy interventions specifically in PsA concludes that low-impact aerobic conditioning,

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including aquatic exercise, is particularly well tolerated in patients with active enthesitis or dactylitis, where high-impact loading can provoke symptom flares [28]. Oliver and Cronan's work on predictors of exercise adherence in chronic musculoskeletal pain found that perceived pain during exercise was among the strongest predictors of dropout, further supporting lower-impact modalities like aquatic therapy for sustaining participation [29]. **[Figure 2 near here]**

6. Multidisciplinary rehabilitation, patient education and self-management

Evidence from inflammatory arthritis rehabilitation research consistently suggests that combining supervised exercise with patient education, self-management training and, where available, psychological or occupational therapy input produces larger and more durable improvements in quality of life than exercise delivered alone. Munsterhjelm and colleagues' scoping review found that programs integrating physiotherapy, occupational therapy, patient education and, in some models, psychological support consistently outperformed single-modality interventions on composite quality-of-life outcomes, though heterogeneity in program design limited precise effect-size pooling [30]. Vliet Vlieland and van den Ende similarly concluded that multidisciplinary team care, incorporating physical therapy alongside education and vocational support, addresses domains of disease burden that pharmacotherapy and single-discipline physical therapy alone do not reach [31].

Iversen and colleagues found that programs combining exercise with cognitive-behavioral pain-coping strategies produced greater reductions in pain interference and disability than exercise alone in rheumatoid arthritis, a pattern plausibly transferable to PsA given the shared psychosocial burden [32]. Turkiewicz and colleagues found that structured referral pathways to physiotherapy, rather than passive advice to "stay active," were necessary to translate exercise recommendations into sustained behavior change, an implementation point directly relevant to PsA care pathways where referral remains inconsistent [33]. Prior and colleagues argued for early, protocolized physiotherapy and occupational therapy referral rather than reactive referral only after functional decline, with joint protection education and graded activity programs complementing conditioning [34]. Silva and colleagues' Cochrane review of balance and proprioceptive training in rheumatoid arthritis found improvements in postural stability and fall-related confidence, a further component worth incorporating into PsA programs given the added fracture risk from chronic inflammatory disease [35]. **[Table 2 near here]**

Table 2: Components and reported benefit of multidisciplinary rehabilitation programs compared with single-modality physical therapy in inflammatory arthritis [30,31,32,34].

Program component	Delivered by	Reported added benefit over exercise alone
Patient education / self-management coaching	Physiotherapist, nurse specialist	Sustained adherence, greater long-term QoL gain [30]
Occupational therapy / joint protection	Occupational therapist	Reduced functional decline, improved daily task performance [34]
Cognitive-behavioral pain coping	Psychologist / trained therapist	Greater reduction in pain interference and disability [32]
Vocational / team-based support	Multidisciplinary team	Broader QoL domains addressed beyond physical function [31]

7. Conclusion

Safety data across the inflammatory arthritis exercise literature are reassuring: no major trial identified in this review reported an increase in disease flares, joint damage progression or serious adverse events attributable to supervised exercise, including the Hurkmans Cochrane review and the Sveaas axial spondyloarthritis trial, both of which explicitly monitored for harm from moderate-to-vigorous intensity programs [18,21]. The more consistent limitation is attrition, since adherence

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drops substantially once formal supervision ends unless structured follow-up or self-management coaching continues [33], arguing for rehabilitation models that transition patients toward supported self-management rather than time-limited programs with no maintenance component.

Structured physical therapy rehabilitation, whether delivered as supervised aerobic and resistance exercise, aquatic therapy targeting entheseal pain, or multidisciplinary programs integrating education and psychosocial support, produces consistent, clinically meaningful improvements in quality of life for patients with psoriatic arthritis, complementing rather than substituting for pharmacologic disease control [5,6,23]. The evidence base drawn directly from PsA remains smaller than that available for rheumatoid arthritis and axial spondyloarthritis, but the shared pathophysiology of inflammatory joint and entheseal disease supports extrapolating exercise and multidisciplinary rehabilitation principles to PsA care with reasonable confidence [14,13]. The largest gains appear to come not from exercise in isolation but from programs that combine physical conditioning with patient education and structured referral pathways [30,31,34]. Larger, PsA-specific randomized trials with standardized rehabilitation protocols and quality-of-life-focused primary endpoints are needed to define the optimal dose and modality of physical therapy rehabilitation, but the existing evidence already supports its routine incorporation into multidisciplinary PsA care pathways alongside pharmacologic therapy [12,16].

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