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Determinants of Patient-Reported Psoriatic Arthritis Impact of Disease: An Analysis of the Association with Gender in 458 Patients from 14 Countries

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Abstract

Objectives: Gender differences may modify symptoms, disease expression, and treatment effects. The objective was to evaluate the link between life impact and gender in psoriatic arthritis (PsA).

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Methods: ReFlaP (NCT03119805) was a study in 14 countries of consecutive adult patients with definite PsA. Participants underwent comprehensive PsA assessment: Disease Activity in PSoriatic Arthritis (DAPSA), Minimal Disease Activity (MDA), and Psoriatic Arthritis Impact of Disease (PsAID). Disease activity was compared by gender using t-tests or Wilcoxon tests. The association of PsAID with gender was analyzed using hierarchical generalized linear models.

Results: Of 458 participants 50.2% were male, mean age (SD) 53.1 (12.6) years, PsA duration 11 (8.2) years, and 51.5% taking bDMARDs. Women versus men had worse Leeds enthesitis index: 0.8 (1.7) / 0.3 (0.9), pain [numerical rating scale 0–10 (NRS)]: 4.7 (2.7) / 3.5 (2.7), HAQ-DI: 0.9 (0.7) / 0.5 (0.6), fatigue NRS: 5.2 (3) / 3.3 (2.8), PsAID: 4.1 (2.4) / 2.8 (2.3), $p<0.001$ for all, and were less frequently at treatment target (T2T): DAPSA (DAPSA cut-offs ≤4 remission, >4 and ≤14 low disease activity): 16.9 (14.9) / 12.6 (16.6), MDA: 25.7% / 50.0%, $p<0.001$ for all. High life impact (PsAID≥4) was associated with female gender [odds ratio (OR) 2.3], enthesitis (OR 1.34), tender joints (OR 1.10) $p<0.001$ for all, and comorbidities (OR 1.22, $p=0.002$).

Conclusions: High life impact was independently associated with female gender, enthesitis, comorbidities, and tender joints. At T2T, women vs men had higher life impact. Life impact needs to become part of PsA T2T strategies.

Keywords

psoriatic arthritis; gender; sex; life impact; treatment target; patient reported outcomes

Psoriatic arthritis (PsA) occurs in one of four people with the autoimmune skin disease psoriasis (1). Although PsA has equal prevalence among men and women, several national registries and longitudinal observational studies have shown phenotypic and outcomes differences between the sexes. These differences can be summarized as follows: women had more frequently polyarthritis (2–5), enthesitis (6), elevated inflammatory markers (5,8), and worse pain (4–6), fatigue (3, 5–7), physical and work disability (4–7); while men had more frequently oligoarthritis, axial disease (2–4, 8), nail psoriasis (3), worse PASI scores (5), and higher radiographic progression(3, 9). Biologic DMARD (bDMARD) use, while appearing similar in men and women with PsA, seems to have higher effectiveness for men who responded better to TNF-inhibitor treatment (4, 7, 8), and had longer bDMARD persistence (7, 8, 12, 13) as shown in several studies. Interestingly, in psoriasis, similar to PsA, a negative association of female sex with treatment response and biologic drug survival was also documented (14–17).

Examination of disease activity, response to treatment and contextual factors is needed to evaluate if the male and female PsA phenotypes are distinct and to optimize treatment approaches within a personalized medicine framework. Understanding factors underlying differences in reporting and outcomes between men and women will enable more effective implementation and maintenance of treatment targets in both women and men.

Recently we performed an international study of patients with established PsA (18). PsA-specific disease activity and life impact measures were systematically collected in accordance with treatment targets (19) and outcomes (20) recently established in PsA through consensus. The objective of this analysis was to assess gender specific treat-to-target

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status, disease activity and patient reported outcomes (PROs), and to evaluate the association of PsA life impact with gender.

METHODS

Study population

Consecutive patients with rheumatologist-diagnosed PsA and more than two years disease duration were enrolled in 21 centers in 14 countries as part of the Remission and Flare in PsA Study (ReFlaP, NCT03119805). The study design has been previously described (18). The ReFlaP study was approved by the Institutional Review Board at the coordinating site (Sorbonne Universite, Paris, France) and at each participating site. All patients gave written informed consent for their participation in the study.

Data collection

In addition to demographics, comorbidities (21, 22) and disease characteristics, a PsA-specific data collection framework was used. Investigators recorded 66 swollen joint counts (SJC66, range 0–66) and 68 tender joint counts (TJC68, 0–68), tender entheseal points using the Leeds Enthesitis Index (LEI, 0–6), active psoriasis body surface area (BSA, range 0–100%), physician global assessment [numeric rating scale (NRS), 0–10 cm], and biologic use. PROs collected included pain, patient global assessment of skin and joints (numeric rating scales, 11 point NRS, 0–10), the Health Assessment Questionnaire Disability Index (HAQ-DI, 0–3), and Psoriatic Arthritis Impact of Disease- 12 items (PsAID, 0–10) (23). Higher PROs scores reflect worse patient status. For PsAID, a score of <=4 represents a patient acceptable symptom state (23). Disease activity was calculated using Disease activity in Psoriatic Arthritis (DAPSA, continuous score) (24) and Minimal Disease Activity (MDA, yes/no) (25). DAPSA is calculated as the sum of SJC66, TJC68, patient-reported pain [numeric rating scale (NRS) 0–10], patient global assessment (PGA) of PsA (NRS 0–10), and CRP (C-reactive protein, mg/dL). Higher DAPSA scores represent worse disease activity. A DAPSA values of ≤4 corresponds to remission, >4 and ≤14 to low disease activity, >14 and ≤28 to moderate disease activity and >28 to high disease activity (24). MDA is a cutoff based checklist of seven PsA disease activity criteria which includes 66/68 joint counts, enthesitis, physical function/disability, pain, patient global, and psoriasis assessment [SJC66≤1, TJC68≤1, LEI≤1, HAQ-DI≤0.5, Pain≤1.5, Patient global≤2, and psoriasis body surface area (BSA)<3%]; if five out of seven are met the patient is considered in MDA (23). DAPSA remission or low disease activity, or MDA are the current treatment targets in PsA (19). The PsAID instrument was recently provisionally endorsed by Outcome Measures in Rheumatology (OMERACT) for the measurement of PsA specific health-related quality of life in clinical trials and longitudinal studies (26).

Statistical analysis

Descriptive analyses were performed to compare men and women for PsA characteristics, disease activity, and PROs. Group means for continuous variables were compared using t-tests or Wilcoxon tests, and proportions for categorical variables were compared using chi-square tests or Fisher's exact test if sample size was inadequate. We hypothesized higher life impact in higher PsA disease activity states and compared PsAID12 mean scores in men and

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women separately by disease activity categories (DAPSA low disease activity and remission, corresponding to being at treatment target (19), and separately in DAPSA moderate and high disease activity). We similarly compared change scores in participants who intensified therapy at baseline for active disease.

We used hierarchical generalized linear models to evaluate the association between PsAID (outcome) and gender (predictor), and whether trends over time were differential between gender, including an interaction between gender and visit and a random patient-level intercept. We used a logistic model for PsAID life impact score as a categorical variable, where a PsAID score >4 was defined as the threshold for high life impact (23). We constructed multivariate regression models including gender, number of comorbidities [Groll Functional Comorbidity index (21)], age, and disease duration. We then added to the multivariate models, musculoskeletal disease activity (SJC66, TJC68, LEI), skin disease activity (BSA>5%), systemic inflammation [CRP (mg/dL), continuous value], and biologic use (yes/no). We also used a hierarchical linear model to estimate the association of PsAID score as a continuous variable with gender from multivariate linear regression models using the same covariates as described above. We also applied these models separately in each gender group.

RESULTS

Of 466 patients, 458 had complete data on gender (see Table 1): 230 (50.2%) were men, mean age (standard deviation, SD) was 53.1 (12.6) years, mean disease duration was 11 (8.2) years, and 51.5% were taking a bDMARD. Mean (SD) PROs were PGA 4.2 (2.7), HAQ-DI 0.7 (0.7), and PsAID 3.4 (2.5). Psoriatic skin disease affecting BSA>5% was present in 13.8% of participants. Average Groll Functional Comorbidity index was higher in women, 1.3 (1.8) vs 0.8 (1.1), $p<0.001$. Osteoporosis, depression, anxiety, upper gastrointestinal disorders, degenerative disc disease, and obesity were significantly more frequent in women (Supplement Table 1). Average time between visits was 20 (10) weeks, among 398 (87%) with follow-up at the second visit. There were 61 women and 52 men who intensified therapy due to active disease at baseline and had a follow-up visit.

PsA measures in men and women

Musculoskeletal disease activity was moderate: mean (SD) TJC68 was 4.6 (9.4), SJC66 was 2.0 (6.2), LEI was 0.6 (1.4), and CRP>5mg/L was present in 39.5%. Swollen and tender joint counts were similar in men and women, while enthesitis was significantly worse in women as a group (see Table 1). Percentages with psoriasis BSA> 5% were not different between men and women, similar to other PsA populations in rheumatology practices. PROs were significantly higher in women versus men: PGA 4.8 (2.6) versus 3.6 (2.7), HAQ-DI 0.9 (0.7) versus 0.5 (0.6) and PsAID 4.1 (2.4) versus 2.8 (2.3), $p <0.001$ for all (Table 1). For individual NRS scale components of the PsAID, scores were systematically higher in women (all $p <0.01$) except for skin problems (2.8 (3.0) females, 2.6 (2.6) males, $p=0.38$) (Figure 1). In the subgroup of participants who intensified treatment for active disease at baseline, group-level improvements were larger in women than men at the second visit for both HAQ-DI and PsAID (Table 2).

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PsA treat-to-target state and life impact

Overall, 57.1% participants had DAPSA levels ≤14 and 37.8% were in MDA, fulfilling remission and low disease activity criteria. MDA was less often reached in women: 25.7% females versus 50.0% males (p<0.001). Mean DAPSA disease activity was higher in women versus men: 16.9 (14.9) versus 12.6 (16.6) (p=0.004). There were gender differences in the unique components of treatment targets between men and women. Women at DAPSA treatment target (score ≤14) had higher TJC68, pain and patient global assessment scores than men at the same treatment target. There was no gender difference for DAPSA components when the treatment target was not met (Table 3). Women versus men at MDA treatment target were less likely to meet the patient global criterion (score ≤2) and the HAQ-DI criterion (score ≤0.5). When not in MDA women were still less likely than men to meet a HAQ-DI score ≤0.5 (Table 4).

In DAPSA remission and low disease activity, mean PsAID (SD) scores were 2.68 (1.96) in females and 1.65 (1.38) in males (p<0.001). In moderate and high disease activity, mean PsAID (SD) scores were 5.32 (2.16) in females and 4.80 (2.28) in males (p=0.117) (Supplement Figure 2).

Link between gender and life impact

In the simple regression model adjusted for age and PsA disease duration, female gender was significantly associated with high PsAID score independent of follow-up time between the consecutive visits [OR 2.71; 95%CI (1.85–3.97), p<0.001]. In the more complex multivariate regression model, built on the initial model, high life impact was associated with female gender [OR 2.30; 95%CI (1.49–3.55), p<0.001], LEI [OR 1.34; 95%CI (1.14–1.57), p<0.001], TJC68 [OR 1.10; 95%CI (1.06–1.14), p<0.001], and comorbidity score [OR 1.22; 95%CI (1.07–1.39), p=0.002]; and was independent of SJC66, psoriasis, CRP, biologic use, and follow-up time between the consecutive visits. We identified a small interaction term between gender and follow-up time, significant in the linear regression, suggesting that the PsAID score decreased by 0.18 points more per month in women than in men. This coefficient became smaller (0.12) after adjustment for covariates. Predictors identified were otherwise consistent between the logistic regression and linear regression models (Table 5).

In separate regression models for each gender we observed that life impact was independently associated with the TJC68 in both men [OR 1.07; 95%CI (1.03–1.12), p=0.002] and women [OR 1.13; 95%CI (1.08–1.19), p<0.001], consistent with the general model above, however the association was stronger for women. In women as a group, but not in men, life impact was inversely independently associated with follow-up time [OR 0.88; 95%CI (0.81–0.96), p=0.005] (Supplement Table 2). In men as a group, but not in women, life impact was independently associated with LEI [OR 1.63; 95%CI (1.25–2.13), p<0.001], comorbidities [OR 1.31; 95%CI (1.06–1.63), p=0.013], and biologic use [OR 1.85; 95%CI (1.06–3.23), p=0.029] (Supplement Table 3). In linear regression models life impact increased with enthesitis, comorbidities, and the 68 tender joint count for both men and women; while for women but not for men, life impact increased with body surface area

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affected by psoriasis, and decreased with biologic use and follow-up time (Supplement Tables 2 and 3).

DISCUSSION

PsA is a heterogeneous rheumatologic disease that affects men and women in equal numbers but not necessarily resulting in equal disease burden or treatment responses. In this study, women were less likely than men to be at PsA treatment targets, and had higher PsA disease activity, comorbidities, and life impact. Separate treat-to-target components were more difficult to achieve in women than men for the tender joint count, pain, patient global and physical function/disability as measured by the HAQ-DI. In the treat-to-target state, PsA specific life impact, measured by the PsAID, was worse in women compared to men, showing that women were disadvantaged for life impact even when they achieved treatment targets. Our findings are consistent with other studies (2–9) and confirm that our current treatment strategies are not sufficient to bridge the life impact gap between women and men.

We further examined associations of life impact in multivariate logistic and linear regression models including disease activity, comorbidities, treatment, and follow-up time. The association remained significant with excess life impact in women. In addition to gender, the TJC68, LEI, and comorbidities were independent predictors of life impact. While women in the ReFlaP study, on average, were not on less bDMARD treatment than men, we have to consider this in context of their disease burden, which raises the question of either differential response to treatment, gender-based treatment bias, or both (27). Differential response to treatment between women and men is an intriguing hypothesis (7). A national PsA registry study in Denmark showed incremental responses to TNF inhibitors were consistently higher in men versus women and that men had significantly higher odds of achieving treatment response across a range of response definitions (7). Women had higher disease activity and worse physical function/disability (HAQ-DI) at baseline; as a consequence, women not only did not overcome their disadvantage present at baseline, instead the outcomes gap for both disease activity and physical function/disability became wider over time. In addition to less treatment effectiveness women also had more adverse events than men (7). Not surprisingly, average biologic retention (median TNF inhibitor persistence) in this study was 3.8 years (95% CI: 3.0, 5.7) in men versus 1.4 (1.1, 1.8) in women ($p<0.001$), and has been confirmed in other studies (7, 8, 12, 13). In the Swedish PsA registry, five-year improvements in treated PsA favored men for the tender joint count and HAQ-DI, and women for pain, however women were still disadvantaged across outcomes at the end of follow up (4). Regarding gender-based treatment-bias, a study in rheumatoid arthritis (RA) showed that, at biologic treatment initiation, women had higher levels of disease activity by patient reported measures than men (28) and that physician measures were better aligned with patient reported measures in men versus women. In RA a dual treat-to-target strategy is being explored (29) which would consider symptoms concomitantly with traditional remission definitions. In the ReFlaP study women had worse status than men, while at the same time, women who changed treatment for active disease improved significantly more than men on physical function and life impact scores. However, our study was not designed to assess treatment specific effects.

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The study has limitations. Although estimates are adjusted for comorbidities, disease factors and treatment, comorbidities were only assessed through a simple list (30). Disease duration in ReFlaP was on average 11 years and therefore findings may not be generalizable to early PsA populations. Roughly half of the patients were treated with bDMARDs which limits generalizability to PsA cohorts with smaller prevalence of bDMARD treatment. The prevalence of moderate/severe psoriasis was low in this study which is consistent with other rheumatology clinic populations but may limit generalizability to those with more significant skin disease. There was a single follow-up visit and therefore long-term trends could not be assessed. Strengths of the study consist in the multicenter international sample, representative of the spectrum of PsA disease burden and treatment patterns, and collection of comprehensive PsA clinical data and validated disease activity measures for PsA.

The present findings have practical clinical implications. Treat-to-target in clinical practice may reduce outcome differences between men and women, and improve life impact in both genders. However, we found differential life impact in men and women who were at treatment target, with higher life impact in women. This is an important finding identifying the need to diversify PsA management through inclusion of life impact as a treatment goal, concomitantly with disease activity specific treat-to-target strategies.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Significance and Innovation

- Women were less likely to be at PsA-specific treatment targets of MDA and DAPSA remission/low disease activity than men.
- Female gender, enthesitis, comorbidities, and tender joints were independently linked to high PsA life impact.
- Gender needs to be considered in the implementation of treat-to-target in clinical practice: while women as a group had higher disease activity and life impact, they responded to change in therapy for active disease with significantly more improvement than men in physical function and life impact.
- Life impact needs to be incorporated with the treat-to-target strategy in PsA in order to be addressed separately from disease activity.

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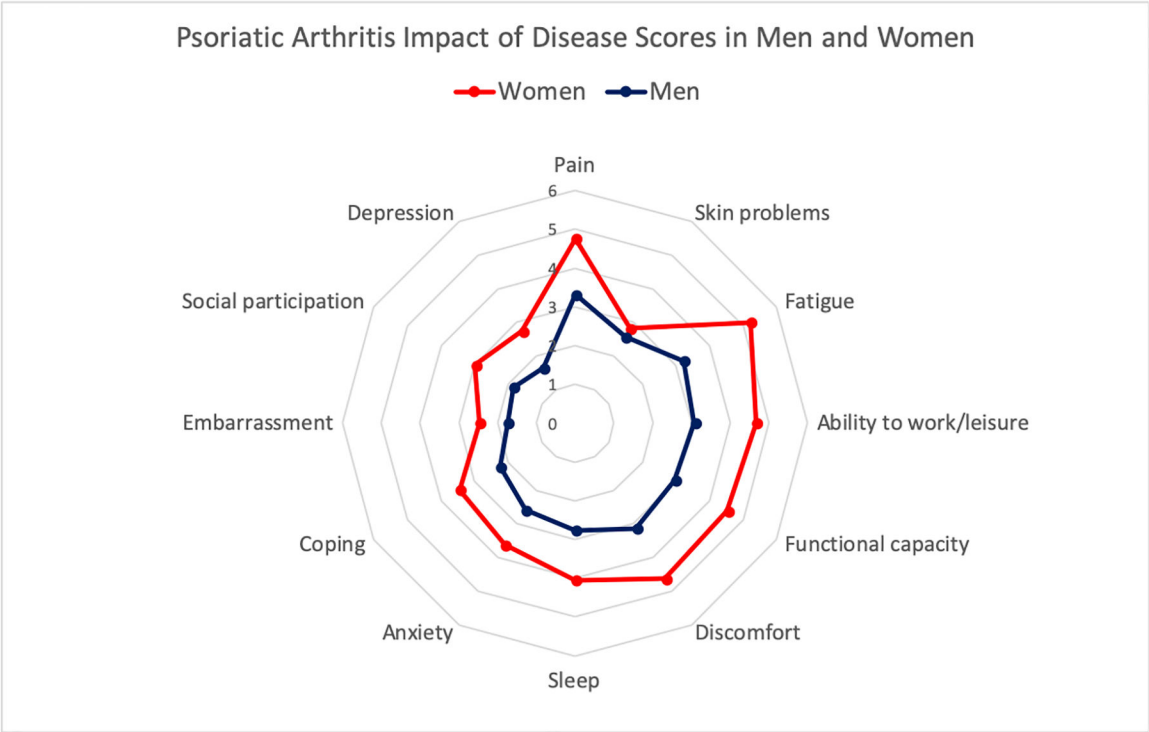

Figure 1:

Psoriatic Arthritis Impact of Disease (PsAID) individual numerical rating scale (NRS) mean scores in women (n=228) versus men (n=230). All mean scores were significantly different between women and men ($p<0.01$) except for the 'Skin problems' NRS ($p=0.32$). Score ranges are 0–10 where 0 is best and 10 is worst.

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Table 1.

Disease characteristics of 458 patients, overall and by gender

Patient characteristic Mean (SD) or N(%)	Overall n=458	Women n=228	Men n=230	P value men vs women**
Age, years	53.1 (12.6)	51.7 (13.1)	54.6 (11.9)	**0.017**
Disease duration, years	10.9 (8.2)	11.0 (8.6)	10.9 (7.9)	0.828
Number of comorbidities *	1.0 (1.5)	1.3 (1.8)	0.8 (1.1)	< **0.001**
TJC68	4.6 (9.4)	5.4 (9.2)	3.8 (9.5)	0.069
SJC66	2.0 (6.2)	2.1 (5.6)	2.0 (6.8)	0.857
LEI	0.6 (1.4)	0.8 (1.7)	0.3 (0.9)	< **0.001**
BSA >5%	63 (13.8)	31 (13.6)	32 (13.9)	0.922
Patient global NRS	4.2 (2.7)	4.8 (2.6)	3.5 (2.7)	< **0.001**
Pain NRS	4.1 (2.8)	4.7 (2.7)	3.5 (2.7)	< **0.001**
Fatigue NRS	4.2 (3.1)	5.2 (3.0)	3.2 (2.8)	< **0.001**
HAQ-DI	0.7 (0.7)	0.9 (0.7)	0.5 (0.6)	< **0.001**
PsAID	3.4 (2.5)	4.1 (2.4)	2.8 (2.3)	< **0.001**
DAPSA	14.8 (15.9)	16.9 (14.9)	12.6 (16.6)	**0.004**
DAPSA remission (≤4)	87 (19.8)	27 (12.3)	60 (27.1)	< **0.001**
DAPSA low disease activity (>4 and ≤14)	164 (37.3)	76 (34.7)	88 (39.8)	0.268
DAPSA moderate disease activity (>14 and ≤28)	104 (23.6)	57 (26.0)	47 (21.3)	0.241
DAPSA high disease activity (>28),	72 (16.4)	49 (22.4)	23 (10.4)	**0.001**
MDA 5/7 met	171 (37.8)	58 (25.7)	113 (50.0)	< **0.001**
MDA 7/7 met (VLDA)	57 (12.6)	13 (5.8)	44 (19.5)	< **0.001**
CRP >5 mg/L	175 (39.5)	100 (45.2)	75 (33.8)	**0.014**
Current bDMARD	236 (51.5)	124 (54.4)	112 (48.7)	0.224

Notations:

* The Functional (Groll) comorbidity index, includes obesity (19).

** Significance for difference between men and women determined by Wilcoxon Rank test. Bold font designates significant p-values.

Abbreviations: SD standard deviation, TJC68 tender joint count range 0–68, SJC66 swollen joint count range 0–66, LEI Leeds enthesitis index range 0–6, BSA body surface area range 0–100%, NRS numeric rating scale range 0–10, HAQ-DI Health Assessment Questionnaire Disability index range 0–3, PsAID Psoriatic Arthritis Impact of Disease range 0–10, DAPSA Disease activity in Psoriatic Arthritis range 0–270, MDA Minimal Disease Activity, VLDA Very Low Disease Activity, CRP C-Reactive Protein, bDMARD biologic Disease Modifying Rheumatic Drug. Missing values: 9 women and 9 men had missing values for DAPSA; missing values for (women, men): TJC68 (0,2), SJC66 (0,2), Pain VAS (1,1), Patient global VAS (1,2), CRP (7,8)

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Table 2.

Change scores in men and women who intensified treatment for active disease at baseline

Change scores (visit1-visit2) * Mean (SD)	Men (n=52)	Women (n=61)	p-value
DAPSA	9.5 (25.0)	13.4 (19.0)	0.423
TJC68	2.9 (16.8)	4.1 (14.1)	0.709
SJC66	2.2 (5.5)	2.4 (4.6)	0.807
LEI	0.1 (1.8)	0.6 (2.0)	0.168
Pain VAS	1.5 (4.0)	2.3 (3.5)	0.317
Patient global VAS	1.5 (4.1)	1.9 (3.4)	0.613
HAQ-DI	0.0 (0.9)	0.5 (0.9)	**0.003**
PsAID	0.6 (3.5)	2.1 (3.1)	**0.031**
CRP (mg/L)	0.4 (7.2)	0.4 (2.5)	0.948

* Positive change scores show improvement. Bold font designates significant p-values.

Abbreviations: SD standard deviation, TJC68 tender joint count range 0–68, SJC66 swollen joint count range 0–66, LEI Leeds enthesitis index range 0–6, BSA body surface area range 0–100%, VAS visual analog scale range 0–10, HAQ-DI Health Assessment Questionnaire Disability index range 0–3, PsAID Psoriatic Arthritis Impact of Disease range 0–10, CRP C-Reactive Protein.

Missing values for (women, men): TJC68 (0,2), SJC66 (0,2), Pain VAS (1,1), Patient global VAS (1,2), CRP (7,8)

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Table 3.

DAPSA components in women (n=219) and men (n=221) with PsA by treatment target state

Target status	DAPSA≤14 (at target)			DAPSA>14 (not at target)		
DAPSA variables Mean (SD)	**Women (n=103)**	**Men (n=148)**	**p-value**	**Women (n=116)**	**Men (n=73)**	**p-value**
TJC68	0.8 (1.2)	0.5 (1.0)	**0.028**	9.6 (11.3)	10.3 (14.6)	0.745
SJC66	0.5 (1.1)	0.3 (0.8)	0.193	3.6 (7.5)	5.4 (11.2)	0.214
Pain VAS	2.7 (1.9)	2.1 (1.7)	**0.018**	6.6 (2.0)	6.0 (2.3)	0.112
Patient global VAS	3.0 (2.0)	2.2 (1.9)	**0.003**	6.4 (2.0)	6.0 (2.3)	0.167
CRP (mg/L)	0.6 (1.3)	0.6 (1.3)	0.665	3.1 (8.9)	2.3 (5.7)	0.452

Bold font designates significant p-values. Abbreviations: SD standard deviation, TJC68 tender joint count range 0–68, SJC66 swollen joint count range 0–66, LEI Leeds enthesitis index range 0–6, BSA body surface area range 0–100%, VAS visual analog scale range 0–10, HAQ-DI Health Assessment Questionnaire Disability index range 0–3, PsAID Psoriatic Arthritis Impact of Disease range 0–10, CRP C-Reactive Protein.

Missing values (9 women and 9 men had missing values for DAPSA, missing for (women, men): TJC68 (0,2), SJC66 (0,2), Pain VAS (1,1), Patient global VAS (1,2), CRP (7,8)

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Table 4.

MDA components in women (n=226) and men (n=226) with PsA by treatment target state

Target status	MDA met (at target)			MDA not met (not at target)		
MDA variables N(%)	**Women (n=58)**	**Men (n=113)**	**p-value**	**Women (n=168)**	**Men (n=113)**	**p-value**
TJC68 ≤1	56 (96.6)	105 (92.9)	0.341	41 (36.3)	41 (36.3)	0.174
SJC66 ≤1	54 (93.1)	106 (93.8)	0.863	58 (51.3)	59 (50.4)	0.248
LEI ≤1	56 (96.6)	110 (97.3)	0.320	120 (71.4)	92 (81.4)	0.087
Pain VAS ≤1.5	32 (55.2)	65 (57.5)	0.771	4 (2.4)	1 (0.9)	0.355
Patient global VAS≤2	33 (56.9)	85 (75.2)	**0.011**	16 (9.5)	13 (11.5)	0.594
HAQ-DI ≤0.5	50 (86.2)	110 (97.3)	**0.005**	34 (20.2)	41 (36.3)	**0.003**
BSA =0	29 (50.0)	48 (42.5)	0.352	53 (31.5)	30 (26.5)	0.369
BSA >0 and ≤5	26 (44.8)	63 (55.8)	0.178	87 (51.8)	57 (50.4)	0.826

Bold font designates significant p-values. Abbreviations: TJC68 tender joint count range 0–68, SJC66 swollen joint count range 0–66, LEI Leeds enthesitis index range 0–6, VAS visual analog scale range 0–10, HAQ-DI Health Assessment Questionnaire Disability index range 0–3, BSA body surface area range 0–100%, bDMARD biologic Disease Modifying Rheumatic Drug.

Missing values for (women, men): TJC68 (0,2), SJC66 (0,2), Pain VAS (1,1), Patient global VAS (1,2)

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Table 5.

The association of gender with PsA life impact and disease activity over time among 458 psoriatic arthritis patients.

Model covariates	Logistic regression Outcome PsAID≥4, OR (95% CI), p-value		Linear regression Outcome PsAID Beta coefficient (95% CI), p-value	
Simple models adjusted for age and PsA duration				
Gender	2.71 (1.85, 3.97)	**<0.001**	1.37 (0.94, 1.79)	**<0.001**
Follow-up time (months)	0.96 (0.88, 1.04)	0.306	−0.01 (−0.09, 0.07)	0.769
Follow-up time × Gender *	0.91 (0.81, 1.02)	0.095	−0.18 (−0.29, −0.06)	**0.003**
Multivariable models adjusted for age and PsA duration				
Gender *	2.3 (1.49, 3.55)	**<0.001**	0.99 (0.60, 1.38)	**<0.001**
Follow-up time (months)	0.93 (0.85, 1.03)	0.170	−0.02 (−0.10, 0.05)	0.598
Follow-up time × Gender	0.94 (0.82, 1.07)	0.335	−0.12 (−0.23, −0.02)	**0.023**
Comorbidity	1.22 (1.07, 1.39)	**0.002**	0.18 (0.08, 0.28)	**0.001**
TJC68	1.10 (1.06, 1.14)	**< 0.001**	0.08 (0.06, 0.10)	**< 0.001**
SJC66	1.02 (0.98, 1.07)	0.399	0.02 (−0.01, 0.06)	0.125
LEI	1.34 (1.14, 1.57)	**< 0.001**	0.37 (0.24, 0.50)	**< 0.001**
Psoriasis BSA >5%	0.99 (0.96, 1.02)	0.567	0.00 (−0.03, 0.03)	0.949
CRP (mg/dL)	1.04 (0.26, 1.75)	0.891	0.45 (−0.01, 0.91)	0.054
Current bDMARD	1.23 (0.87, 1.75)	0.244	−0.06 (−0.36, 0.25)	0.722

Notations:

* interaction term between follow-up time in weeks and gender. Bold font designates significant p-values. Abbreviations: TJC68 tender joint count range 0–68, SJC66 swollen joint count range 0–66, LEI Leeds enthesitis index range 0–6, VAS visual analog scale range 0–10, HAQ-DI Health Assessment Questionnaire Disability index range 0–3, BSA body surface area range 0–100%, bDMARD biologic Disease Modifying Rheumatic Drug.

Missing values for (women, men): TJC68 (0,2), SJC66 (0,2), Pain VAS (1,1), Patient global VAS (1,2)