ORIGINAL RESEARCH

Assessment of Patient–Physician Interactions in Psoriatic Arthritis: National Results of the ASSIST Study

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ABSTRACT

Introduction: An overarching principle for the management of psoriatic arthritis (PsA) is a shared decision-making process between physicians and patients. The aim of this study is to assess the patient–physician relationship in a group of patients with PsA, by using the Perceived Efficacy in Patient–Physician Interactions (PEPPI) and CollaboRATE instruments.

Methods: This is a cross-sectional multicenter study where consecutive patients with PsA were enrolled. For each patient, the main demographic, comorbid conditions, and clinical data were collected, including the assessment of disease activity, function, quality of life, and impact of disease. PEPPI and CollaboRATE questionnaires were used, respectively, to evaluate the patient's perception of the patient–physician relationship and the shared decision-making process.

Results: A total of 81 patients with PsA were enrolled at four centers in Italy. Overall, our patients showed a high level of confidence in obtaining needed health care, with relatively high median (IQR) values of PEPPI (20; 16–23), and a good shared decision-making process, with high median (IQR) values of CollaboRATE questionnaire (7; 6–9). PEPPI and CollaboRATE scores showed a statistically significant inverse correlation with different clinical variables such as disease duration, Leeds Enthesitis Index, PsA impact of Disease, Health Assessment Questionnaire, pain, patient's global assessment of disease activity and clinical disease activity for PsA. The presence of comorbidities did not appear to be associated with lower values of PEPPI and CollaboRATE.

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Conclusions: In this study, few patients with PsA were at risk of suboptimal communication with their physician. This phenomenon appeared to be primarily related to higher disease activity and burden.

Keywords: Psoriatic arthritis; Patient–physician interaction; PEPPI; CollaboRATE; Outcome

Key Summary Points

An overarching principle for the management of chronic diseases such as psoriatic arthritis (PsA) is a shared decision-making process between physicians and patients.

Misalignment in the satisfaction levels between patients and physicians in PsA may be one of the causes of poor adherence and compliance, therefore, improving patient–physician communication may be beneficial.

Our study firstly evaluated the patient–physician relationship in a group of patients with PsA by using the Perceived Efficacy in Patient–Physician Interactions (PEPPI) and CollaboRATE instruments, which are feasible and simple questionnaires that are easy to use in clinical practice.

We showed that patients with PsA seem to have a good level of communication with their physician, but for those with suboptimal communication, the phenomenon appeared to be related to higher disease activity and a greater burden of the disease.

INTRODUCTION

Psoriatic arthritis (PsA) is a chronic inflammatory disease which occurs in about one-third of patients with a personal and/or family history of psoriasis [1]. PsA is a complex and multiform entity in which different articular and extra-articular manifestations, together with comorbidities, may lead to chronic pain, articular damage, reduction of function and quality of life, and increased risk of atherosclerosis similar to other articular inflammatory disease such as rheumatoid arthritis [1, 2]. However, recent advances in the treatment and management of PsA have led to the possibility of achieving disease remission or low disease activity, especially in patients under biologic treatment [3–5].

An overarching principle for the management of PsA is a shared decision-making process between physicians and patients [6]. Effective communication between patients with PsA and their physicians is therefore crucial to optimize patient care and ensure the success of treat-to-target approaches, in order to achieve the best possible control of the disease [6]. A previous study showed that a misalignment in the satisfaction levels between patients and physicians, regarding PsA control, is associated with increased disease activity and disability, with these patients reporting more swollen and tender joints, greater work impairment, and higher disease burden than patients where patient/physician satisfaction was aligned [7]. In this light, improving patient–physician communication has been proposed as a solution to this misalignment. In general, effective communication is associated with a wide range of better care outcomes [8] and the increasing recognition of the patient's perspective in chronic diseases has fostered the development of scales and questionnaires such as the Perceived Efficacy in Patient–Physician Interactions (PEPPI) [9, 10] and the CollaboRATE [11]. These tools assess the patient's perception of the patient–physician relationship and the shared decision-making process from the patients' point of view. To date, only a few studies have explored these aspects in chronic rheumatological diseases and none in PsA [10].

Furthermore, it would be useful to understand how certain variables, such as age, sex, or other clinical factors including disease activity, have an impact on the patient–physician interactions.

Thus, the aim of this study was to assess, in general, the patient–physician relationship in a group of patients with PsA, by using the PEPPI and CollaboRATE instruments. Moreover, we aimed to assess the possible clinical factors related to a quality reduction of patient–physician relationship.

METHODS

This is a cross-sectional multicenter study carried out in four tertiary rheumatological centers in Italy, each with expertise in the diagnosis and treatment of PsA. This served as a sub-analysis of the ASSIST Study [12].

In particular, according to the main study, inclusion criteria were:

- patients who had received a diagnosis of PsA and who met the CASPAR (ClASsification criteria for Psoriatic Arthritis) criteria [13];
- age ≥ 18 years;
- patients with a follow-up period exceeding 12 months.

For each patient, the main demographic and clinical data were collected, which included sex, age, disease duration, subset of PsA (mono/oligo/polyarthritis), prevalent axial disease (according to the criteria proposed by ASAS for inflammatory back pain and/or radiological axial involvement) [14], prevalent enthesitis involvement and treatments. The clinical examination included: number of swollen (out of 66) and tender (out of 68) joints, presence of dactylitis, presence of psoriasis at the time of the visit, the body surface area (BSA), presence of enthesitis (assessed with the Leeds Enthesitis Index (LEI) [15], pain assessment on Visual Analogic Scale (VAS), patient (PtGA) and physician (PhGA) global assessment of disease activity on VAS [16]. The assessment of disease activity was performed by using the clinical Disease Activity index for Psoriatic Arthritis (cDAPSA)[17] and the Minimal Disease Activity (MDA) [18]. Function and disability were assessed through the Health Assessment Questionnaire-Disability Index (HAQ-DI) [19] and the EQ-5 questionnaire [20], while the impact of the disease through the Psoriatic Arthritis Impact of the Disease (PsAID-12) [21]. Finally, the Widespread Pain Index (WPI) was performed in all patients with PsA [22]. The WPI quantifies the extent of bodily pain on a 0–19 scale, by asking patients if they had pain or tenderness in 19 different body regions.

Assessment of patient–physician interaction

PEPPI and CollaboRATE questionnaires were used, respectively, to evaluate the patient's perception of the patient–physician relationship and the shared decision-making process from the patients' point of view. These two questionnaires were administered after a routine clinical examination in a separate room.

The PEPPI is a validated tool structured on five questions (in the short form used for this study) with a score ranging from 0 to 25, where higher scores represent a better perception of the patient–physician relationship [9, 10].

The CollaboRATE questionnaire is a validated tool structured on three questions with a score ranging from 0 to 9, where higher scores indicates more shared decision-making process [11]. A rheumatologist of our group (FMP) translated the questionnaires from English to Italian as a first draft and then sent to a mother tongue English speaker with a good knowledge of Italian but without any knowledge of either questionnaire. The mother tongue English speaker back-translated the Italian version of the questionnaire and no significant cultural adaptations were made.

All procedures were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration. Informed consent was obtained from all individual participants included in the study. The study was approved by the Institutional Review Board of the University of Molise (Prot. n. 17/2021), which covered all four tertiary rheumatological centers.

Statistical analysis

Descriptive statistics were used to summarize all the variables collected. Normal variables were

expressed as mean and standard deviation (SD) and non-normal variables were expressed as median and inter-quartile range (IQR). Categorical variables were expressed as number (n) and percentage (%).

Correlation between the different continuous variables with the PEPPI and CollaboRATE questionnaires scores were assessed using the Spearman rho correlation index. Partial correlation was used to adjust results for continuous variables. The Kruskal–Wallis H test and the Mann–Whitney U test were used to compare medians. P values < 0.05 were considered significant.

RESULTS

In the study period, a total of 81 patients with PsA fulfilled the inclusion criteria and were enrolled for the study. Missing data were reported for only one patient who was excluded from the analysis. Demographic and clinical characteristics of the remaining 80 patients are reported in Table 1. The mean age (SD) was 54.8 (11.3) years. The median disease duration (IQR) was 8 years (4–18), the distribution of subset of PsA was as follows: predominantly articular involvement was the most common (85.1%), while predominantly axial and isolated entheseal involvement showed a lower prevalence (10 and 3%, respectively).

Overall, patients had a well-controlled disease with median (IQR) cDAPSA of 9.5 (4.1–18.3) while 61% were in a state of MDA. Moreover, median (IQR) PsAID was 2.6 (1–5).

Analysis of patient–physician interactions

Overall, our patients with PsA showed a good personal sense of effectiveness in obtaining needed health care, with relatively high median (IQR) values of PEPPI (20; 17–23), and a good shared decision-making process from the patient's perspective, with high median (IQR) values of CollaboRATE questionnaire (7; 6–9).

Relationship with clinical and demographic values

No significant differences were found in PEPPI and CollaboRATE scores between male and female patients. PEPPI and CollaboRATE scores showed a statistically significant inverse correlation with different clinical variables such as disease duration, LEI, PsAID, PhGA, HAQ-DI, pain VAS, PtGA and cDAPSA (see Table 2 for all data).

Interestingly, patients in remission (assessed by cDAPSA) had a statistically significant higher value in both PEPPI and CollaboRATE questionnaires with respect to patients with moderate to high disease activity. Moreover, patients with no (clear) psoriasis or BSA < 3% showed higher scores of PEPPI and CollaboRATE. Similar results were observed for patients with a low impact of the disease and better function or quality of life (Fig. 1). Finally, median (IQR) values of PEPPI and CollaboRATE were statistically significant higher in patients in treatment with biologic (b) disease-modifying anti-rheumatic drugs (bDMARDs) [PEPPI: 22 (18–24), CollaboRATE: 7.8 (7–9)] than conventional synthetic DMARDs or apremilast [PEPPI: 18 (16–20), CollaboRATE: 6.8 (6–8)].

Correlations between cDAPSA and PEPPI and CollaboRATE scores remained significant even after correction for other indices such as PsAID, HAQ-DI, PtGA and pain VAS (partial correlation). Overall, these results suggest that both disease activity and patient-reported outcomes may have an impact on PEPPI and CollaboRATE scores.

Finally, the presence of comorbidities seems to not be associated with lower values of PEPPI and CollaboRATE as well as no significant correlations were found between the WPI with both questionnaires.

DISCUSSION

The objective of this study was to evaluate the performance of patient–physician communication and the perception of patients of the shared decision-making process.

Table 1 Demographic and clinical characteristics of patients with PsA

	Overall, n = 80
Female/male sex	29/51
Mean age (SD), years	54.8 (11.3)
Disease duration, median (IQR), years	8 (1–18)
Obesity (BMI > 30), n (%)	15 (18.7)
Axial involvement, n (%)	8 (10)
Tender joints, median (IQR)	2 (0–5.7)
Swollen joints, median (IQR)	0 (0–2)
Psoriasis extension, n (%)	
Clear	23 (28.7)
BSA ≤ 3%	41 (51.2)
BSA: 3.1–10%	13 (16.3)
BSA: > 10%	3 (3.8)
Enthesitis (LEI), median (IQR)	0 (0–1)
cDAPSA median (IQR)	9.5 (4.1–18.3)
HAQ-DI, median (IQR)	0.3 (0.1–1)
PsAID, median (IQR)	2.6 (1–5)
Pain VAS, median (IQR) (0–10), cm	3 (1.5–7)
PtGA, median (IQR) (0–10), cm	3.5 (1.5–7)
WPI, median (IQR)	2.5 (1–5)
PASS yes, n. (%)	43 (53.7)
MDA	49 (61.2)
PEPPI, median (IQR)	20 (17–23)
CollaboRATE, median (IQR)	7 (6–9)
Number of comorbidities (%)	
No comorbidity	24 (30)
1	27 (33.8)
2	15 (18.8)
3	7 (8.8)
> 3	7 (8.8)
Treatment	
csDMARDs	28 (35)
APREMILAST, n (%)	3 (3.7)

Table 1 continued

	Overall, n = 80
bDMARDs	49 (61.3)

PsA psoriatic arthritis, *SD* standard deviation, *IQR* interquartile range, *BMI* body mass index, *BSA* body surface area, *LEI* Leeds Enthesitis Index, *cDAPSA* clinical Disease Activity index for Psoriatic Arthritis, *HAQ-DI* Health Assessment Questionnaire Disability Index, *PsAID* Psoriatic Arthritis Impact of Disease, *VAS* Visual Analogue Scale, *PtGA* patient global assessment, *WPI* Widespread Pain Index, *PASS* patient acceptable symptoms state, *MDA* minimal disease activity, *PEPPI* Perceived Efficacy in Patient–Physician Interactions, *csDMARDs* conventional synthetic disease-modifying anti-rheumatic drugs, *bDMARDs* biologic disease-modifying anti-rheumatic drugs

The first aspect to underline is that our study focuses on two important aspects of patient–physician interaction. Although both questionnaires investigate the relationship between the physician and the patient, the CollaboRATE asks the patient to evaluate the effort made by the physician in listening to him but also in making the patient understand her/his own health problems, while the PEPPI asks the patient to evaluate his ability to interact with the physician. The study allows to assess, for the first time, those tools in PsA. Our results showed that most patients with PsA were generally satisfied with their patient–physician communication. However, some of the patients with PsA appeared to be at risk of suboptimal communication with their physician, which has been shown to be related mainly to higher disease activity and had greater burden of the disease.

These findings are in keeping with other published surveys where most patients with PsA were generally satisfied with patient–physician communication [23].

Interestingly, the perception of patient–physician communication and shared decision-making did not seem to correlate with patient's age, sex, number of comorbidities or the presence of diffuse musculo-skeletal pain. However, higher disease activity, higher impact

of disease and reduced function and quality of life were linked to a poorer patient–physician interaction. Moreover, the presence of psoriasis (assessed by BSA) and enthesitis (assessed by LEI) was associated with lower scores in both questionnaires suggesting that higher disease activity in those domains is linked to a reduced patient–physician interaction, reinforcing the need of disease control in all disease domains [24]. Of note, a better patient–physician communication was demonstrated for patients in bDMARDs treatment.

These results imply that inadequate disease control determines a more "negative" perception of the relationship with physicians, which is fundamental for several aspects of disease management such as adherence to treatment, compliance, and shared decision-making process. However, it also could be possible that a poor doctor–patient relationship leads to worse

Fig. 1 **A** Analysis of differences (Kruskal–Wallis) between▶ PEPPI and CollaboRATE scores in patients with different extension of psoriasis assessed by BSA. **B** Analysis of differences (Mann–Whitney) between PEPPI and CollaboRATE scores in patients in cDAPSA remission or not in cDAPSA remission. **C** Analysis of differences (Mann–Whitney) between PEPPI and CollaboRATE scores in patients with HAQ-DI ≤ 0.5. or HAQ > 0.5. **D** Analysis of differences (Mann–Whitney) between PEPPI and CollaboRATE scores in patients with PsAID ≤ 4 (low impact) or PsAID > 4 (high impact). **E** Analysis of differences (Mann–Whitney) between PEPPI and CollaboRATE scores in patients with cDAPSA ≤ 14 (low disease activity) or cDAPSA > 14 (moderate to high disease activity). $P < 0.05$ for all comparisons. *PEPPI* Perceived Efficacy in Patient–Physician Interactions, *BSA* body surface area, *cDAPSA* Clinical Disease Activity index for Psoriatic Arthritis, *HAQ-DI* Health Assessment Questionnaire Disability index, *PsAID* Psoriatic Arthritis Impact of Disease

Table 2 Correlation (Spearman's rho) between PEPPI and CollaboRATE scores with the different demographic and clinical indices of disease activity, function, quality of life, and impact of disease

Correlations

		PhGA	Pain VAS	PtGA	cDAPSA	LEI	Number of comorbidities
PEPPI	Correlation coefficient (Spearman's rho)	− 0.03	− 0.34	− 0.33	− 0.40	− 0.47	0.09
	p value (two-tailed)	0.81	< 0.01	< 0.01	< 0.01	< 0.01	0.42
CollaboRATE (Spearman's rho)	Correlation coefficient	0.01	− 0.25	− 0.32	− 0.32	− 0.38	− 0.14
	p value (two-tailed)	0.99	0.03	< 0.01	< 0.01	< 0.01	0.23

Correlations

		HAQ_DI	PsAID	WPI	Age	Disease duration
PEPPI	Correlation coefficient (Spearman's rho)	− 0.423	− 0.39	− 0.30	0.01	0.23
	p value (two-tailed)	< 0.01	< 0.01	0.007	0.9	0.04
CollaboRATE	Correlation coefficient (Spearman's rho)	− 0.38	− 0.28	− 0.25	− 0.09	− 0.06
	p value (two-tailed)	< 0.01	0.012	0.025	0.412	0.6

PhGA physician global assessment of disease activity, *VAS* visual analogue scale, *PtGA* patient global assessment of disease activity, *cDAPSA* clinical Disease Activity index for Psoriatic Arthritis, *LEI* Leeds Enthesitis Index, *PEPPI* Perceived Efficacy in Patient–Physician Interactions, *HAQ-DI* Health Assessment Questionnaire Disability Index, *PsAID* Psoriatic Arthritis Impact of Disease, *WPI* Widespread Pain Index
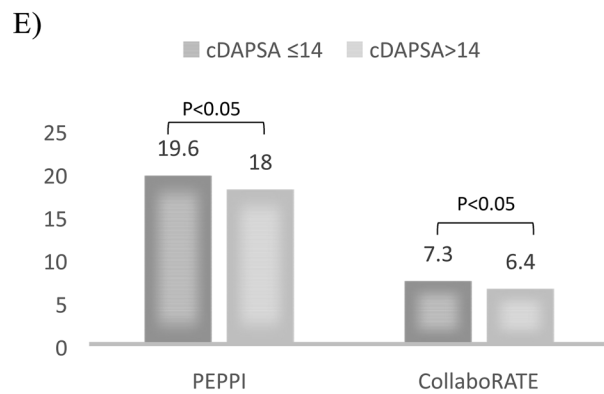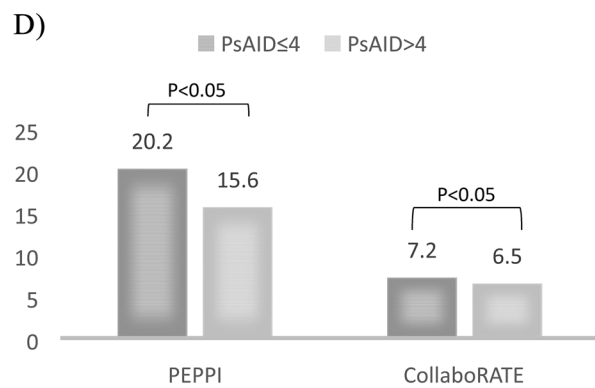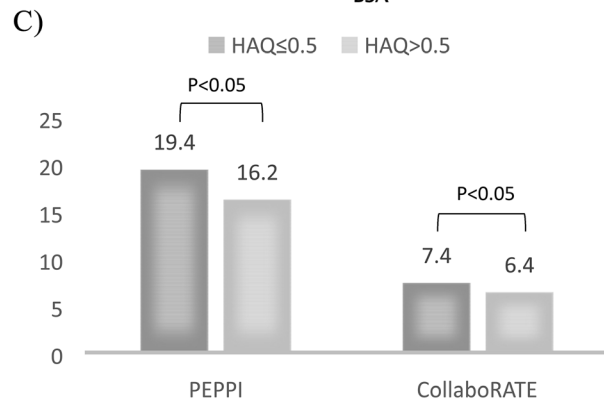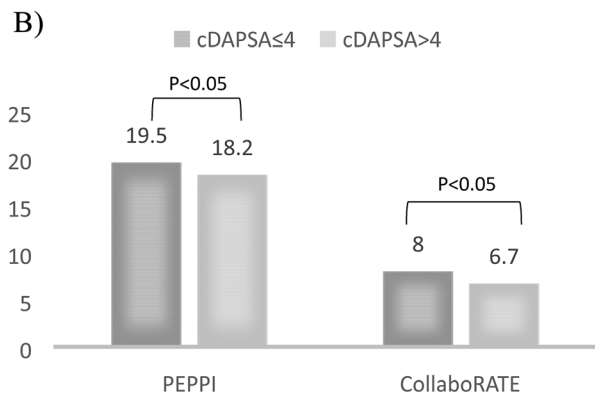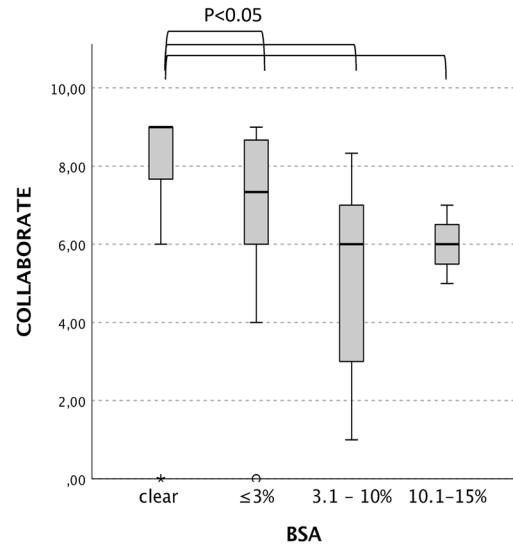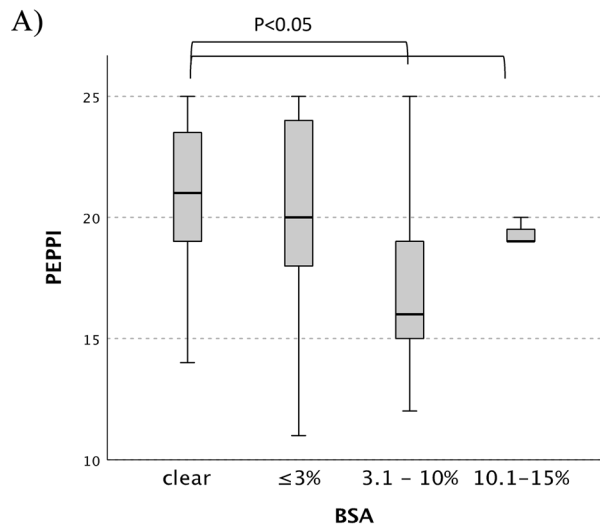
adherence to therapy, which therefore leads to greater disease activity.

The study has some limitations: first, the relative low number of included patients with a predominance of male sex, and, second, the lack of follow-up data that could reveal the potential evolution of patient–physician interactions over time. Moreover, as a major limitation, patient research partner was not included in our research team to help interpret the results. However, the study also has some strengths such as the possibility for patients to fill in the questionnaire immediately after the routine clinical visit and the multicenter design.

CONCLUSIONS

Patient–physician interaction is a central process of medical care. Effective communication between physician and patient is associated with a wide range of better outcomes in terms of care, patient satisfaction, and adherence to recommendations and pharmacological treatments.

In keeping with what has been highlighted in this study, the assessment of disease activity becomes of crucial importance during the management of PsA. Furthermore, a better control of disease activity would allow to obtain improvements not only in terms of clinical-therapeutic outcomes, but also in the patient–physician relationship.

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Declarations

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