Patients and Methods

Study Population

This was a multicentric observational study. We included patients over 18 years of age from July 1 to November 30, 2017 from rheumatology and dermatology units of 6 centers in Argentina (3 public hospitals and 3 private centers). The patients were classified into one of the following groups:

A) Group 1: Patients with PsA: (a) patients with known PsA: patients with previous diagnosis of PsA under follow-up by a rheumatologic center; and (b) patients with psoriasis and new diagnosis of PsA: patients with psoriasis who were referred by a dermatologist and who had been recently diagnosed with PsA according to CASPAR criteria.

B) Group 2: Patients without PsA: (a) psoriatic patients without PsA: patients who were referred by dermatologists for whom diagnosis of PsA was excluded; (b) patients with psoriasis and osteoarthritis: patients who were referred by dermatologists for whom the final diagnosis was osteoarthritis according to rheumatologic criteria; and (c) patients with osteoarthritis: patients with previous diagnosis of osteoarthritis followed up by rheumatologists.

We excluded patients who did not read or understand the Spanish language, those who were illiterate, or patients with another connective tissue disease such as systemic lupus erythematosus, rheumatoid arthritis, inflammatory myopathies, vasculitis, systemic sclerosis, and Sjögren syndrome. Trained rheumatologists evaluated the following parameters in each patient with psoriasis and/or PsA: DAS28, HAQ, BASDAI, PASI, modified NAPSI, number of painful joints out of 68, number of swollen joints out of 66, and Leeds enthesis index (LEI). The authorization to use and validate GEPARD questionnaire was obtained from Härle et al. [14].

Translation Process

Two bilingual translators translated the questionnaire from German to Spanish independently. Subsequently, one of the researchers along with one of the translators evaluated the two versions and generated a new version which combined both (GEPARDa version). This last version was re-translated into its original language by two other translators who were blinded to the original version.

Validation Process

To verify that the patients could understand the formulation of the questions, 12 patients completed the questionnaire and doubts and comments were taken into account to make the final draft. In addition, 10 of these patients re-answered the questionnaire 15 days after the first time. The intraclass correlation coefficient was used to evaluate the reproducibility of the questionnaire.

Evaluation of the Questionnaire as a Diagnostic Test

Sensitivity, specificity, positive likelihood ratio (LR +), and negative likelihood ratio (LR−) were calculated with their respective 95% confidence intervals (95% CI) of the GEPARDa using the CASPAR criteria as the gold standard [17]. The ROC (receiver operating curve) curve was performed, and the area under the curve (AUC) was calculated to evaluate the discrimination power of the questionnaire among patients with and without PsA. From the ROC curve, the best cut-off value was detected to discriminate PsA. We also evaluated variables associated with the positivity of the questionnaire using logistic regression analysis. A *p* value <0.05 was considered significant.

The following variables were included: demographic data (age, sex, years of education, smoking status (pack/years), body mass index), characteristics of skin involvement (duration of psoriasis disease, presence of intergluteal, scalp and/or nail involvement), and laboratory data (erythrocyte sedimentation rate, C-reactive protein). In psoriatic patients without PsA, the following clinimetric data were recorded: DAS28, HAQ, BASDAI, PASI, modified NAPSI, number of painful joints out of 68, number of swollen joints out of 66, and LEI. Continuous variables were summarized by mean and standard deviation, or by median and interquartile range. Categorical variables were summarized by percentage and 95% CI. A descriptive analysis was performed to compare variables between patients with a positive and a negative questionnaire (GEPARDa). Categorical variables were compared using the χ^2 test and the Student *t* test was used for continuous variables. SPSS (version 20.0) was used to perform the analyses. ANOVA was used to compare mean GEPARDa positive questions in the evaluated groups.