Evaluating Risk Factors for Cumulative Life Course Impairment in Psoriasis using Patient-Acceptable Symptom State and European Quality of Life 5 Dimensions (EQ-5D)

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ABSTRACT

Objective: To evaluated the health-utility values and risk factors for cumulative life course impairment (CLCI) using Patient Acceptable Symptom State (PASS) and European Quality of Life 5 Dimensions (EQ-5D).
Materials and Methods: This cross-sectional investigation enrolled patients with psoriasis. Patients were asked PASS questions about their overall self-perceived health state, adaptation, and expectations for current, future, and lifelong conditions. The patients also completed EQ-5D.
Results: The mean age of 139 enrolled patients was 45.8 ± 14.4 years, and 57.6% were women. Most cases had chronic plaque psoriasis 121 (87.1%). For current PASS, satisfaction was significantly associated with older age, being married, and lower disease severity. The mean health-utility value and visual analog scale of the 139 patients were 0.89 ± 0.12 and 77.0 ± 17.4, respectively. Patients would not accept their disease if they had moderate to extreme problems in usual activities and depression/anxiety for the future and lifelong. Univariate analysis revealed that depression and usual activities were significantly associated with satisfaction for current PASS, future PASS, and lifelong PASS.
Conclusion: Disease severity, age, marital status, problems with usual activities, and depression/anxiety were significantly related to CLCI. These findings may allow physicians to identify psychosocial and psychological aspects of psoriatic patients at high risk for developing CLCI. Early and adequate treatment, good coping strategies, and good social support can prevent a negative impact on CLCI and major life-changing decisions.

Keywords: Cumulative life course impairment; EQ-5D; Patient-acceptable symptom state; Psoriasis; Quality of life (Siriraj Med J 2023; 75: 646-654)

INTRODUCTION

Psoriasis is a common chronic inflammatory skin disease characterized by thick scaly erythematous plaques on the skin, especially in trauma-prone areas.[1,2] The condition substantially affects patients' health-related quality of life (HRQoL) since it can affect daily activities, social functioning, and psychological well-being.[3] The level of HRQoL impairment in psoriasis has been shown to be comparable to some serious medical conditions, such as ischemic heart disease, diabetes, depression, and cancer.[4] Furthermore, it has a cumulative impact on a patient's life course, which sometimes cannot be detected by measuring HRQoL at a specific time point.[5]

The term "cumulative life course impairment"

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(CLCI) was proposed more than a decade ago. It was intended to reflect the overall effects of psoriasis that result in an altered or impaired life potential during the life course of a patient. The dimension of the future is embedded in the CLCI concept, which is considered a key element in the management of lifelong conditions. Understanding the adaptations of patients and their future expectations may allow physicians to provide high-quality patient care. However, this dimension has not been extensively studied in psoriasis.[6]

Patient Acceptable Symptom State (PASS) is a simple questionnaire that captures the overall self-perceived health state, adaptation, and expectations of individual patients. Three questions are asked:

1. Considering the ways that skin psoriasis affects your functioning, is your current condition satisfactory? ("Current PASS").
2. Considering the ways that your skin psoriasis is affecting you, if you were to remain in this state for the next few months, would this be satisfactory? ("Future PASS").
3. If you were to remain for the rest of your life as you were during the last 48 hours, would this be satisfactory? ("Lifelong PASS").

The answers are recorded as "Yes" or "No," indicating "satisfaction" and "dissatisfaction," respectively.[7,8]

This study aimed to evaluate health-utility (HU) values and risk factors for CLCI using PASS and European Quality of Life 5 Dimensions (EQ-5D).

MATERIALS AND METHODS

This cross-sectional investigation included psoriasis patients with and without psoriatic arthritis (PsA) who attended the Psoriasis Clinic, Outpatient Dermatology Unit, in a tertiary hospital in Thailand. The diagnoses of PsA were confirmed by an expert rheumatologist and were based on the classification criteria for PsA.[9] For this study, the inclusion criteria were patients who (i) were 18 years or older; (ii) could read, write, and speak Thai; and (iii) were willing to participate in the study. Patients with psychiatric conditions were excluded. This study was approved by the Institutional Review Board (COA no. Si 156/2020). All methods were performed in accordance with the relevant guidelines and regulations. All patients gave their written informed consent. Details of the following were recorded: demographic and clinical data of patients; the severity of psoriasis (PASI; Psoriasis Area and Severity Index); and treatments. HU values were derived from European Quality of Life-5 Dimensions – 5 Levels (EQ-5D-5L). The completion of EQ-5D-5L, patient global assessment severity (PtGA), and self-assessment Simplified Psoriasis Index (saSPI-s)[10] was carried out by each patient or with the help of a research assistant. The overall health state, adaptation, and expectations of individual patients were investigated using the PASS questions.

EQ-5D-5L

The EuroQoL group introduced EQ-5D-5L in 2009. The Thai version of EQ-5D-5L was validated in 2014.[11] EQ-5D-5L consists of a descriptive system and a visual analog scale (EQ-5D VAS).[12] The descriptive system has 5 dimensions: mobility, self-care, usual activities, pain/discomfort, and depression/anxiety. In turn, each dimension has 5 levels of impairment: no problems, slight problems, moderate problems, severe problems, and extreme problems.[13] The selected levels for each of the 5 dimensions of the descriptive system are combined to derive the HU value for a patient.[14] Thai HU values range from -0.28 to 1, with values of 0 and 1 indicating "dead" and "perfect" health, respectively.[14] A negative value indicates a state of health that is perceived by a patient as "worse than death".[14] In relation to EQ-5D VAS, it uses a 20-cm vertical numerical scale ranging from 0 to 100, with 0 and 100 representing "the worst" and "the best" imaginable health states, respectively.[11]

Statistical analysis

Descriptive statistics (frequency, percentage, mean, standard deviation, median, minimum, and maximum) were used to analyze patient characteristics and the variables studied. Fisher's exact test was used to compare categorical variables. Normally and non-normally distributed data were analyzed using an independent t-test and the Mann–Whitney U test, respectively. The 5 domains of EQ-5D-5L were divided into 2 groups: no to slight problems, and moderate to extreme problems. Subsequently, binary logistic regression with the enter method was used to determine the factors associated with HRQoL for each EQ-5D-5L domain, as well as satisfied PASS. Variables with *P* values of < 0.2 in a univariate analysis were included in a multivariate analysis. A *P* value of ≤ 0.05 was considered statistically significant. All statistical analyses were performed using PASW Statistics for Windows (version 18.0; SPSS, Chicago, IL, USA).

RESULTS

A total of 139 patients were involved. Their overall mean age was 45.8 ± 14.4 years, and 57.6% were women (Table 1). Patients who were employed and patients with a bachelor's or higher degree represented 86.2% and

TABLE 1. Clinical characteristics and EuroQol-5 Dimension-5 Levels (EQ-5D-5L) for current Patient Acceptable Symptom State (PASS), future PASS, and lifelong PASS.

Characteristics	**Total**	**Current PASS**		***P* values**	**Future PASS**		***P* values**	**Lifelong PASS**		***P* values**
	(N=139)	**Dissatisfied (n=36)**	**Satisfied (n=103)**		**Dissatisfied (n=42)**	**Satisfied (n=97)**		**Dissatisfied (n=20)**	**Satisfied (n=119)**	
Male gender, n (%)	59 (42.4)	12 (33.3)	47 (45.6)	0.199	16 (38.1)	43 (44.3)	0.495	9 (45.0)	50 (42.0)	0.803
Age (years), mean±SD	45.8±14.4	41.6±13.9	47.2±14.3	**0.046**	42.8±13.9	47.0±14.4	0.112	37.7±12.8	47.1±14.2	0.006
Being married, n (%)	92 (66.2)	19 (52.8)	73 (70.9)	**0.048**	24 (57.1)	68 (70.1)	0.138	11 (55.0)	81 (68.1)	0.253
Education level (n=137)										
≥ Bachelor's degree†, n (%)	75 (54.7)	20 (57.1)	55 (53.9)	0.741	24 (58.5)	51 (53.1)	0.560	12 (60.0)	63 (53.8)	0.609
Occupation (n=138)										
Employed status, n (%)	119 (86.2)	28 (77.8)	91 (89.2)	0.098	34 (81.0)	85 (88.5)	0.234	16 (80.0)	103 (87.3)	0.480
Alcohol consumption, n (%), (n=138)	36 (26.1)	10 (27.8)	26 (25.5)	0.788	11 (26.2)	25 (26.0)	0.985	7 (35.0)	29 (24.6)	0.326
Meditation, n (%) (n=135)	49 (36.3)	14 (40.0)	35 (35.0)	0.596	12 (29.3)	37 (39.4)	0.262	4 (20.0)	45 (39.1)	0.101
Co-morbidities, n (%)	74 (53.2)	20 (55.6)	54 (52.4)	0.746	25 (59.5)	49 (50.5)	0.328	8 (40.0)	66 (55.5)	0.200
Psoriatic arthritis, n (%)	40 (28.8)	11 (30.6)	29 (28.2)	0.784	14 (33.3)	26 (26.8)	0.435	5 (25.0)	35 (29.4)	0.687
Psoriasis duration (years), median (min,max)	15.0 (0.3,54.0)	10.5 (0.3,54.0)	17.0 (1.0,49.0)	0.119	12.5 (0.3,54.0)	16.0 (1.0,49.0)	0.127	10.0 (0.3,30.0)	16.0 (1.0,54.0)	0.104
Family history of psoriasis, n (%)	33 (23.7)	8 (22.2)	25 (24.3)	0.804	9 (21.4)	24 (24.7)	0.673	4 (20.0)	29 (24.4)	0.783
Body Surface Area, median (min, max) (n=126)	5.0 (0,80.0)	8.5 (0,50.0)	5.0 (0,80.0)	**0.009**	8.0 (0,80.0)	5.0 (0,80.0)	**0.013**	10.0 (2.0,80.0)	5.0 (0,80.0)	**0.031**
PASI score, median (min, max) (n=133)	4.8 (0,33.3)	5.8 (0,27.5)	4.3 (0,33.3)	**0.013**	5.8 (0.5, 33.3)	4.2 (0,30.2)	**0.004**	5.8 (0.5,33.3)	4.4 (0,30.2)	0.071
saSPI-s score, median (min, max)	5.0 (0,45.0)	8.5 (0,45.0)	4.0 (0,32.0)	**<0.001**	10.0 (0.5,45.0)	4.0 (0,32.0)	**<0.001**	10.0 (1.5,20.0)	5.0 (0,45.0)	0.033
EQ-5D-5L										
Health utility, mean±SD	0.89±0.12	0.82±0.14	0.92±0.10	**<0.001**	0.83±0.15	0.92±0.09	**<0.001**	0.85±0.13	0.90±0.11	0.057
EQ-VAS, mean±SD	77.0±17.4	65.2±19.3	81.1±14.7	**<0.001**	70.1±19.1	80.1±15.7	**0.002**	68.8±18.1	78.4±17.0	**0.026**

TABLE 1. Clinical characteristics and EuroQol-5 Dimension-5 Levels (EQ-5D-5L) for current Patient Acceptable Symptom State (PASS), future PASS, and lifelong PASS. (Continue)

Characteristics	Total	Current PASS		*P* values	Future PASS		*P* values	Lifelong PASS		*P* values
	(N=139)	Dissatisfied (n=36)	Satisfied (n=103)		Dissatisfied (n=42)	Satisfied (n=97)		Dissatisfied (n=20)	Satisfied (n=119)	
Mobility, n (%)										
No to slight problems	125 (89.9)	32 (88.9)	93 (90.3)	0.757	36 (85.7)	89 (91.8)	0.357	18 (90.0)	107 (89.9)	1.000
Moderate to extreme problems	14 (10.1)	4 (11.1)	10 (9.7)		6 (14.3)	8 (8.2)		2 (10.0)	12 (10.1)	
Self-care, n (%)										
No to slight problems	133 (95.7)	33 (91.7)	100 (97.1)	0.180	39 (92.9)	94 (96.9)	0.615	20 (100.0)	113 (95.0)	0.593
Moderate to extreme problems	6 (4.3)	3 (8.3)	3 (2.9)		3 (7.1)	3 (3.1)		0	6 (5.0)	
Usual activities, n (%)										
No to slight problems	131 (94.2)	30 (83.3)	101 (98.1)	**0.004**	36 (85.7)	95 (97.9)	**0.010**	15 (75.0)	116 (97.5)	**0.002**
Moderate to extreme problems	8 (5.8)	6 (16.7)	2 (1.9)		6 (14.3)	2 (2.1)		5 (25.0)	3 (2.5)	
Pain/discomfort, n (%)										
No to slight problems	111 (79.9)	24 (66.7)	87 (84.5)	0.022	29 (69.0)	82 (84.5)	**0.037**	15 (75.0)	96 (80.7)	0.554
Moderate to extreme problems	28 (20.1)	12 (33.3)	16 (15.5)		13 (31.0)	15 (15.5)		5 (25.0)	23 (19.3)	
Depression/anxiety, n (%)										
No to slight problems	118 (84.9)	24 (66.7)	94 (91.3)	**<0.001**	30 (71.4)	88 (90.7)	**0.004**	12 (60.0)	106 (89.1)	**0.003**
Moderate to extreme problems	21 (15.1)	12 (33.3)	9 (8.7)		12 (28.6)	9 (9.3)		8 (40.0)	13 (10.9)	

Abbreviations: EQ-VAS, EuroQol-visual analog scale; PASI, Psoriasis Area and Severity Index; PtGA, Patient Global Assessment; saSPI, self-assessment Simplified Psoriasis Index
Bold indicates a statistical significance.

54.7% of the cohort, respectively. In all, there were 121 (87.1%) cases of chronic plaque psoriasis, 9 (6.5%) of guttate psoriasis, 4 (2.9%) of erythrodermic psoriasis, 3 (2.2%) of pustular psoriasis, and 2 (1.4%) of acrodermatitis continua of Hallopeau. For current PASS, older age, being married, and a lower disease severity were significantly associated with satisfaction with the overall health state. Except for being married, these factors were also significant for future PASS and lifelong PASS.

The mean HU value and the mean EQ-VAS score of the study cohort were 0.89 ± 0.12 and 77.0 ± 17.4, respectively. Eighty-nine patients reported being satisfied for current PASS, future PASS, and lifelong PASS, whereas 13 patients reported dissatisfaction for all stages of PASS. The mean HU score and the mean EQ-VAS score of the 89 patients who reported being satisfied were 0.93 ± 0.09 and 81.2 ± 15, respectively. These were significantly higher than the corresponding values for patients who reported dissatisfaction (n = 13; mean HU score = 0.84 ± 0.14, $P = 0.003$; and mean EQ-VAS = 65.5 ± 19.1, $P = 0.005$). Among the 5 dimensions of EQ-5D, the highest percentage of reports of moderate to extreme problems was for pain/discomfort (20.1%), while the lowest percentage was for self-care (4.3%). Pain/discomfort, usual activities, and depression were significant problems that prevented patients from being able to accept their condition if they were still present in the future. Patients reported that they would not accept their disease if moderate to extreme problems in usual activities and depression/anxiety lasted for life.

Although the mean HU value and the mean EQ-VAS of patients without PsA were slightly higher than those of patients with PsA, the differences were not significant ($P = 0.203$ and $P = 0.402$, respectively; Table 2). However, the mean EQ-VAS score was significantly different for patients reporting satisfaction and dissatisfaction for current PASS for both the psoriasis and PsA groups. Pain/discomfort, followed by depression, was common among patients without PsA, but pain/discomfort and mobility were the most commonly experienced problems for patients with PsA. Among patients without PsA, those who reported being unhappy for current PASS had significantly lower HU and EQ-VAS scores and more difficulties with their usual activities and depression/anxiety than patients who stated that they were satisfied for current PASS.

Univariate logistic regression analysis showed that patients who were satisfied for current PASS and future PASS should have no or slight problems performing usual activities, or with pain/discomfort and depression/anxiety (Table 3). The analysis also revealed that having no to slight problems with usual activities and depression were significantly associated with satisfaction for current PASS, future PASS, and lifelong PASS. Subsequent multivariate analysis showed that no to slight problems with self-care were associated with satisfaction for current PASS. Furthermore, the multivariate analysis found that the EQ-5D-5L domains were not associated with satisfaction for future PASS and lifelong PASS.

DISCUSSION

The concept of CLCI was introduced in 2010. It referred to the cumulative results of the burdens of social stigmatization, physical comorbidities, and psychological comorbidities and their interaction with coping strategies and external factors.[5,15] The complex interaction of these key components explains the variations in how each patient experiences life with psoriasis.[5] A recent systematic review of the mapping of risk factors for CLCI was conducted in patients with chronic skin diseases such as psoriasis, atopic dermatitis, and hidradenitis suppurativa. The analysis found that such patients are at high risk of developing a lifelong negative impact from their disease.[16] Nine of the reviewed studies addressed patients with psoriasis. The severity and comorbidities of the disease were mentioned the most frequently, while only a few studies addressed psychosocial risk factors over time.[16]

In this study, we used PASS and EQ-5D-5L to assess psychosocial factors over time in patients with psoriasis. Our study showed that satisfaction for current PASS was significantly associated with lower disease severity, older age, and being married. Patients who could accept their disease for a lifetime were significantly older than those who could not. This may be because the coping strategies at different ages are not the same. Middle-aged adults (aged approximately 40 to 59 years) are more likely to use problem-focused coping rather than emotion-focused coping to solve problems.[17,18] Problem-focused coping can produce positive effects and minimize CLCI. Furthermore, it is generally accepted that good family and social support play a positive role even though they may not decrease the severity of the disease.[19] The results of our study highlight the need to promote problem-focused coping strategies for patients. Moreover, educational programs are needed for family members, friends, and the broad community so that they understand that psoriasis is not a contagious disease and are more accepting of individuals with the condition.

A systemic review and meta-analysis of EQ-5D for psoriatic patients showed that the mean utility scores of EQ-5D for psoriasis and PsA were 0.82 and 0.76, respectively.[20] This was in line with our study, which

TABLE 2. EuroQol-5 Dimension-5 Levels (EQ-5D-5L) and current Patient Acceptable Symptom State (PASS).

Characteristics	Patients without PsA (n=99)	Current PASS Dissatisfied (n=25)	Current PASS Satisfied (n=74)	*P* values	Patients with PsA (n=40)	Current PASS Dissatisfied (n=11)	Current PASS Satisfied (n=29)	*P* values
EQ-5D-5L								
Health utility, mean±SD	0.90±0.11	0.83±0.12	0.93±0.09	**<0.001**	0.87±0.14	0.81±0.19	0.89±0.10	0.175
EQ-VAS, mean±SD	77.8±17.0	67.5±18.0	81.3±15.3	**<0.001**	75.1±18.4	60.0±21.8	80.8±13.3	0.011
Mobility, n (%)								
No to slight problems	94 (94.9)	24 (96.0)	70 (94.6)	1.000	31 (77.5)	8 (72.7)	23 (79.3)	0.686
Moderate to extreme problems	5 (5.1)	1 (4.0)	4 (5.4)		9 (22.5)	3 (27.3)	6 (20.7)	
Self-care, n (%)								
No to slight problems	95 (96.0)	23 (92.0)	72 (97.3)	0.264	38 (95.0)	10 (90.9)	28 (96.6)	0.479
Moderate to extreme problems	4 (4.0)	2 (8.0)	2 (2.7)		2 (5.0)	1 (9.1)	1 (3.4)	
Usual activities, n (%)								
No to slight problems	94 (94.9)	21 (84.0)	73 (98.6)	**0.014**	37 (92.5)	9 (81.8)	28 (96.6)	0.178
Moderate to extreme problems	5 (5.1)	4 (16.0)	1 (1.4)		3 (7.5)	2 (18.2)	1 (3.4)	
Pain/discomfort, n (%)								
No to slight problems	80 (80.8)	17 (68.0)	63 (85.1)	0.079	31 (77.5)	7 (63.6)	24 (82.8)	0.227
Moderate to extreme problems	19 (19.2)	8 (32.0)	11 (14.9)		9 (22.5)	4 (36.4)	5 (17.2)	
Depression/anxiety, n (%)								
No to slight problems	81 (81.8)	14 (56.0)	67 (90.5)	**<0.001**	37 (92.5)	10 (90.9)	27 (93.1)	1.000
Moderate to extreme problems	18 (18.2)	11 (44.0)	7 (9.5)		3 (7.5)	1 (9.1)	2 (6.9)	

Abbreviations: EQ-VAS, EuroQol-visual analog scale; PsA, psoriatic arthritis
Bold indicates statistical significance.

TABLE 3. Univariate and multivariate analysis of factors associated with each domain of EuroQol-5 Dimension-5 Levels (EQ-5D-5L).

	Univariate analysis: Crude OR (95% CI), no to slight problems									
	Mobility	***P* values**	**Self-care**	***P* values**	**Usual activities**	***P* values**	**Pain/discomfort**	***P* values**	**Depression/anxiety**	***P* values**
Married	0.30 (0.06-1.38)	0.122	0.38 (0.04-3.34)	0.381	0.26 (0.03-2.21)	0.219	0.59 (0.23-1.51)	0.273	1.25 (0.48-3.26)	0.653
Employed	1.84 (0.46-7.32)	0.386	1.27 (0.14-11.48)	0.833	4.28 (0.93-19.63)	0.062	2.04 (0.70-5.95)	0.194	1.60 (0.47-5.40)	0.449
Age >40 years	1.13 (0.37-3.44)	0.836	0.73 (0.13-4.14)	0.724	2.61 (0.60-11.41)	0.201	2.37 (1.02-5.50)	0.045	2.24 (0.88-5.75)	0.093
High education	1.24 (0.41-3.74)	0.707	2.52 (0.45-14.23)	0.296	0.71 (0.16-3.10)	0.651	0.41 (0.17-1.00)	0.051	1.12 (0.44-2.84)	0.813
Comorbidities	0.84 (0.28-2.56)	0.758	0.56 (0.10-3.14)	0.506	3.66 (0.71-18.82)	0.120	1.69 (0.73-3.90)	0.221	2.06 (0.80-5.35)	0.136
Psoriasis duration	0.97 (0.92-1.01)	0.159	**0.91 (0.85-0.97)**	**0.006**	0.98 (0.92-1.04)	0.493	0.99 (0.96-1.03)	0.721	1.03 (0.98-1.08)	0.278
PASI	1.04 (0.91-1.18)	0.563	1.16 (0.86-1.57)	0.329	0.95 (0.86-1.06)	0.357	0.95 (0.89-1.02)	0.134	0.97 (0.90-1.05)	0.502
PtGA	0.92 (0.73-1.16)	0.502	0.96 (0.68-1.35)	0.803	**0.68 (0.49-0.95)**	**0.022**	**0.73 (0.61-0.89)**	**0.001**	**0.78 (0.64-0.96)**	**0.021**
saSPI-s	0.96 (0.92-1.02)	0.172	1.19 (0.94-1.49)	0.152	0.95 (0.89-1.01)	0.099	**0.92 (0.87-0.96)**	**<0.001**	**0.95 (0.91-1.00)**	**0.035**
Satisfaction for current PASS	1.16 (0.34-3.97)	0.810	3.03 (0.58-15.75)	0.187	**10.10 (1.94-52.66)**	**0.006**	**2.72 (1.13-6.52)**	**0.025**	**5.22 (1.97-13.83)**	**0.001**
Satisfaction for future PASS	1.85 (0.60-5.72)	0.283	2.41 (0.47-12.47)	0.294	**7.92 (1.53-41.04)**	**0.014**	**2.45 (1.04-5.76)**	**0.040**	**3.91 (1.50-10.20)**	**0.005**
Satisfaction for lifelong PASS	0.99 (0.20-4.80)	0.991	-	-	**12.89 (2.79-59.47)**	**0.001**	1.39 (0.46-4.22)	0.560	**5.44 (1.88-15.75)**	**0.002**

TABLE 3. Univariate and multivariate analysis of factors associated with each domain of EuroQol-5 Dimension-5 Levels (EQ-5D-5L). (Continue)

	Multivariate analysis: Adjusted OR (95% CI), no to slight problems									
	Mobility	***P* values**	**Self-care**	***P* values**	**Usual activities**	***P* values**	**Pain/discomfort**	***P* values**	**Depression/anxiety**	***P* values**
Married	0.27 (0.05-1.49)	0.132								
Employed					2.60 (0.20-33.05)	0.462	**5.20 (1.15-23.49)**	**0.032**		
Age >40 years							2.41 (0.75-7.73)	0.139	0.97 (0.28-3.38)	0.965
High education							0.39 (0.12-1.26)	0.117		
Comorbidities					9.64 (0.85-109.20)	0.067			2.23 (0.66-7.50)	0.197
Psoriasis duration	0.98 (0.92-1.04)	0.428	0.93 (0.86-1.01)	0.071						
PASI							1.06 (0.94-1.20)	0.325		
PtGA					0.70 (0.40-1.24)	0.223	0.97 (0.73-1.31)	0.858	0.87 (0.64-1.19)	0.375
saSPI-s	0.96 (0.89-1.02)	0.168	1.40 (0.97-2.03)	0.076	1.02 (0.92-1.14)	0.682	**0.91 (0.84-0.99)**	0.022	1.00 (0.93-1.07)	0.880
Satisfaction for current PASS			**13.67 (1.08-173.84)**	**0.044**	0.77 (0.06-10.29)	0.844	1.86 (0.37-9.31)	0.452	1.84 (0.36-9.53)	0.466
Satisfaction for future PASS					7.13 (0.24-210.58)	0.256	0.60 (0.12-2.98)	0.533	1.43 (0.24-8.69)	0.698
Satisfaction for lifelong PASS					3.40 (0.32-36.38)	0.312			1.95 (0.39-9.69)	0.412

Abbreviations: CI, confidence interval; OR, odds ratio; PASI, Psoriasis Area and Severity Index; PASS, Patient Acceptable Symptom State; PtGA, Patient Global Assessment; saSPI, self-assessment Simplified Psoriasis Index

Bold indicates statistical significance.

found that patients with PsA had a lower HRQoL than patients without PsA. Like the systemic review, our investigation also showed that of the 5 dimensions of EQ-5D, pain/discomfort and self-care presented the most and least problems, respectively.[20] However, our study added additional information. Specifically, problems with usual activities and depression/anxiety were the most significant for patients with PsA who could not accept those problems in the future (ie, the next few months) nor their lifetime. Depression/anxiety can occur in up to 30% of patients.[21] Some studies have shown that severe psoriasis significantly raises the risk of depression.[16,22] A connection between the brain and the skin (brain-skin axis) and increased inflammation in psoriasis may be directly related to pathophysiological pathways in depression.[23] Nevertheless, depression/anxiety and psychological effects can be severe regardless of disease severity if patients do not have appropriate coping strategies and good social support.[24]

In conclusion, our study evaluated risk factors for CLCI using the PASS and EQ-5D tools. It showed that a clinical characteristic (disease severity), sociodemographic factors (age and marital status), impaired general health (problems in usual activities), and depression/anxiety were significantly related to CLCI. These findings can help physicians identify psoriatic patients who are at high risk of developing CLCI. Early and adequate treatment, good coping strategies, and good social support can prevent negative impacts on CLCI and major life-changing decisions.

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