Knowledge and Stigmatization among Psoriasis Patients at the Institute of Dermatology

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Abstract

This cross-sectional study aimed to evaluate the level of knowledge about psoriasis, the extent of social stigmatization, and factors associated with both outcomes among 97 patients attending the outpatient clinic at the Institute of Dermatology, Thailand. Participants completed a 25-item knowledge questionnaire and a 6-item stigmatization scale. The mean knowledge score was 15.99 ± 3.64 out of a possible 25 (64% of the maximum score). Patients demonstrated a strong understanding of basic aspects of psoriasis, particularly its non-contagious nature and global occurrence; however, knowledge regarding disease etiology, pathophysiology, genetics, and specialized treatment modalities remained limited. Most patients reported low to moderate levels of stigmatization, with only 9.3% experiencing no stigmatization at all. Being stared at was the most frequently reported stigmatizing experience. Correlation analysis showed that knowledge was associated with age, body mass index (BMI), educational level, comorbidities, and disease duration, whereas stigmatization was associated with disease severity and smoking behavior. Multivariable linear regression identified BMI, educational level, residence, and disease duration of greater than 10 years as independent predictors of knowledge, while anxiety disorder and gout were independently associated with higher stigmatization scores. These findings highlight the need for comprehensive psoriasis care that integrates tailored patient education, effective disease control, and psychosocial support.

Keywords: *Psoriasis, Knowledge, Stigmatization*

1. Introduction

Psoriasis is a chronic, non-communicable inflammatory skin disease affecting approximately 2% of the global population (Boehncke & Schön, 2015; Michalek et al., 2017; Menter et al., 2008). Chronic plaque psoriasis is the most common form, accounting for nearly 90% of cases, and is characterized by well-defined erythematous plaques with silvery scales (Boehncke & Schön, 2015; Parisi et al., 2013; Tsoi et al., 2012). Beyond cutaneous manifestations, psoriasis is associated with significant physical and psychological comorbidities, including psoriatic arthritis, nail disease, and cardiometabolic conditions such as obesity, diabetes, dyslipidemia, hypertension, and cardiovascular disease collectively described as the "psoriatic march" (Boehncke & Schön, 2015; Menter et al., 2008; Nestle et al., 2009).

From a biopsychosocial perspective, psoriasis is influenced not only by biological mechanisms but also by psychological responses and social contexts that shape patients' experiences and outcomes. Understanding patients' knowledge and societal attitudes toward psoriasis is therefore essential for effective disease management, particularly in diverse cultural settings such as Thailand. Inadequate knowledge may foster misconceptions especially the belief that psoriasis is contagious—which can trigger fear-based reactions, social distancing, and stigmatization (Thakolwiboon et al., 2013; Seawthaweesin, 2018). Conversely, accurate knowledge regarding the non-communicable nature and chronic inflammatory basis of psoriasis may reduce unfounded fears and mitigate negative social attitudes.

Disease severity may also influence stigma, as more visible or extensive lesions can increase perceived difference, public scrutiny, and internalized shame, thereby exacerbating psychosocial distress (Thakolwiboon et al., 2013). Evidence further suggests that stigmatization is shaped by both clinical and psychosocial determinants. Jankowiak et al. (2020) reported that greater impairment in dermatology-related quality of life and lower levels of dermatology self-care education were significantly associated with higher feelings of stigmatization among psoriatic patients, underscoring the interplay between disease burden and patient-related factors.

Previous studies in Thailand have reported gaps in patient knowledge and challenges related to disease management and quality of life among individuals with psoriasis (Jiamton et al., 2012; Seawthaweesin, 2018). Studies among Thai patients have also described psychosocial impacts related to visible skin disease, including reduced quality of life and social difficulties (Thakolwiboon et al., 2013). Cultural beliefs and health perceptions may also influence health-seeking behaviors and treatment adherence, although these aspects remain underexplored in quantitative clinical research in Thailand. However, existing Thai research has primarily focused on clinical characteristics or quality of life and has not systematically examined knowledge domains among clinic-based patients, nor identified predictors of misconceptions and stigma within this population.

International evidence underscores the role of knowledge and psychosocial factors in psoriasis management. A recent study in China involving 526 patients reported generally good knowledge, positive attitudes, and proactive practices; however, approximately 23% of patients demonstrated low knowledge levels. Education, disease duration, medication use, and socioeconomic status were associated with knowledge and attitudes toward psoriasis (Tian et al., 2024). Nevertheless, whether similar determinants operate among Thai clinic patients and how specific knowledge domains relate to misconceptions and stigma remains unclear.

Despite these findings, the risk factors contributing to misconceptions, particularly the belief that psoriasis is contagious, and the factors associated with psychosocial burden among Thai clinic-based patients have not been comprehensively investigated. Specifically, the relationships between knowledge domains, demographic characteristics, disease severity, and social determinants such as access to information remain insufficiently defined in the Thai context (Jiamton et al., 2012; Thakolwiboon et al., 2013; Seawthaweesin, 2018) Clarifying these associations within a biopsychosocial framework is essential to inform targeted educational and psychosocial interventions aimed at reducing negative social perceptions and improving the quality of life of individuals living with psoriasis.

2. Objectives

1) To evaluate patients' knowledge of psoriasis among individuals with psoriasis receiving care at the outpatient department of the Institute of Dermatology.
2) To investigate stigmatization experienced by patients with psoriasis attending the outpatient clinic at the Institute of Dermatology.
3) To investigate the relationship between biopsychosocial characteristics and the level of psoriasis-related knowledge among patients.
4) To investigate the relationship between biopsychosocial characteristics and the level of stigmatization.
5) To investigate differences in treatment modalities received by patients in relation to their level of knowledge about psoriasis.
6) To investigate the relationship between psoriasis- related knowledge among patients and stigmatization from society.

3. Materials and Methods

A cross-sectional study was conducted among adult patients with psoriasis who had been confirmedly diagnosed. Participants were outpatients treated at the Institute of Dermatology from 1 May 2025 to 31 July 2025 and met the inclusion criteria.

3.1 Inclusion criteria

1) Aged 18 years or older
2) Patients diagnosed with psoriasis (ICD-10: L40.0–L40.9)
3) Provided informed consent and actively cooperated with the study

3.2 Exclusion criteria

1) A history of severe cognitive impairment
2) Inability or refusal to respond to the questionnaire

3.3 Sample size

$$n = \frac{z^2_{1-\frac{\alpha}{2}} P(1-P)}{d^2}$$

$$= \frac{1.96^2_{1-\frac{0.05}{2}} 0.5(1-0.5)}{0.05}$$

$$= 97$$

n = sample size = 97
Z = z score = 1.96
P = proportion = 0.5
(P = proportion of psoriasis patients that have knowledge about psoriasis from expert opinion decides p = 50%)
d = margin of error = 0.05
α = 0.05

3.4 Data collection

1) Develop the questionnaire.
2) Seek consent from the Institute of Dermatology Thailand (IOD) to collect data from psoriasis patients at the institute. This study was approved by the Institutional Review Board / Independent Ethics Committee (IRB/IEC No. 012/2568).
3) Submit the questionnaire to the committee for approval.
4) Revise the questionnaire based on the feedback received.
5) Choose a sample from the population group.
6) Inform patients about the study's details and objectives.
7) Collect data using the questionnaire.
8) Enter the collected data into a computer for recording.

3.5 Research instrument

The questionnaire was adapted from the study by Padmavathi et al. with authorization from Professor Padmavathi (Nagarajan et al., 2016) and refined based on feedback from three dermatologists at the Institute of Dermatology. Following revision according to the dermatologists' recommendations, content validity was assessed using the Index of Item–Objective Congruence (IOC). All items achieved an IOC value of 1.00, indicating excellent agreement between experts and strong content validity. The reliability of the questionnaire was assessed using Cronbach's alpha (α = 0.80) based on 10 pilot questionnaires. Internal consistency was evaluated using Cronbach's alpha. In the full study sample (n = 97), reliability was acceptable for the knowledge scale (α = 0.79) and good for the stigmatization scale (α = 0.87). The final questionnaire, written in Thai, comprised 52 items organized into three sections: basic information (21 items), knowledge (25 items), and stigmatization (6 items). For scoring purposes, correct answers in the knowledge section were awarded 1 point, while incorrect or unclear responses received 0 points. The attitude component, adapted as a 6-item stigmatization scale, utilized a four-point Likert scale ranging from very positive (0 points) to very negative (3 points). Higher scores indicated greater levels of stigmatization. All participants in the study had been diagnosed with psoriasis based on established diagnostic criteria.

3.6 Data analysis

The data will be verified for accuracy and recorded in a database using STATA/BE version 18. Statistical analyses will then be performed as follows:

1) Analysis of general demographic data, presented as frequencies and percentages, including occupation, age, weight, height, health insurance coverage, income, educational level, use of herbal medicine, smoking status, alcohol consumption, underlying diseases, and place of residence, among others.

For quantitative data with a normal distribution, central tendency will be reported as the mean and standard deviation (SD). For data with a non-normal distribution, central tendency will be reported as the median, interquartile range (IQR), maximum, and minimum values. Qualitative data will be presented as numbers (n) and percentages (%).

2) Analysis of the mean scores of psoriasis-related knowledge and stigmatization from society among patients with psoriasis. As these are quantitative variables, data with a normal distribution will be reported as the mean and standard deviation (SD), whereas data with a non-normal distribution will be reported as the median, interquartile range (IQR), maximum, and minimum values.

3) Analysis of the relationship between biopsychosocial characteristics and treatment modalities received by patients and their psoriasis-related knowledge scores. Linear regression analysis will be performed, including univariable analysis using simple linear regression and multivariable analysis using multiple linear regression. The best-fitting linear model will be determined using the method of least squares, with a 95% confidence level.

4) Analysis of the relationship between biopsychosocial characteristics and stigmatization scores among patients with psoriasis. Linear regression analysis will be conducted using univariable analysis with simple linear regression. The best-fitting linear model will be determined using the method of least squares, with a 95% confidence level.

5) Analysis of the relationship between stigmatization scores and psoriasis-related knowledge scores among patients with psoriasis. Results will be reported as the Pearson correlation coefficient. If the data are ordinal, the Spearman's rank correlation coefficient will be reported.

4. Results and Discussion

A total of 97 patients with psoriasis were included. The mean knowledge score was 15.99 ± 3.64. From Table 1, the highest correct response rates were observed for the items "Psoriasis is seen all over the world" (94.8%), "Psoriasis is not contagious" (92.8%), "Psoriasis can affect the entire skin" (92.8%), and "Psoriasis affects both men and women" (92.8%). In contrast, the lowest correct response rates were related to more complex concepts, including "The exact cause of psoriasis is known" (25.8%), "In psoriasis, skin cells multiply too slowly" (29.9%), "Genetic factors strongly determine whether a person will develop psoriasis" (40.2%), and "Photo/light therapy is useful in treating psoriasis" (50.5%).

Regarding social stigmatization, most patients reported low to moderate levels, with only 9.3% experiencing no stigmatization at all. The mean stigmatization scores ranged from 0.51 to 1.13 across items. Being stared at by others had the highest severity, with 29.0% reporting "always," and item 2 demonstrated one of the highest mean scores (1.13 ± 0.77).

Pearson correlation analysis revealed that knowledge was significantly associated with age ($p < 0.05$), BMI ($p = 0.010$), educational level ($p < 0.05$), hypertension status ($p < 0.01$), and disease duration. Stigmatization was significantly associated with PASI score ($p = 0.032$), smoking ($p = 0.041$), and selected comorbidities.

In multivariable linear regression analysis, as presented in Table 2 and Table 3, respectively, BMI ($p = 0.015$), lower educational levels ($p < 0.05$), residence outside Bangkok ($p = 0.008$), and disease duration >10 years ($p = 0.002$) were identified as independent predictors of knowledge. Meanwhile, anxiety disorder ($p = 0.043$) and gout ($p = 0.020$) were independently associated with higher stigmatization scores.

Proceedings of RSU International Research Conference (RSUCON-2026)

Table 1 Knowledge of Psoriasis Patients at the Institute of Dermatology

	True n	%	False n	%
No.1	7	7.2	90	92.8
No.2	27	27.8	70	72.2
No.3	7	7.2	90	92.8
No.4	7	7.2	90	92.8
No.5	32	33.0	65	67.0
No.6	72	74.2	25	25.8
No.7	24	24.7	73	75.3
No.8	45	46.4	52	53.6
No.9	68	70.1	29	29.9
No.10	41	42.3	56	57.7
No.11	26	26.8	71	73.2
No.12	45	46.4	52	53.6
No.13	41	42.3	56	57.7
No.14	32	33.0	65	67.0
No.15	28	28.9	69	71.1
No.16	58	59.8	39	40.2
No.17	39	40.2	58	59.8
No.18	50	51.5	47	48.5
No.19	13	13.4	84	86.6
No.20	11	11.3	86	88.7
No.21	48	49.5	49	50.5
No.22	33	34.0	64	66.0
No.23	23	23.7	74	76.3
No.24	5	5.2	92	94.8
No.25	15	15.5	82	84.5

Table 2 Multivariable Linear Regression Analysis of Factors Associated with Psoriasis Knowledge

Knowledge	B (Coefficients)	p-value	95%CI	
			Lower	Upper
Age	-0.058	0.087	-0.125	0.009
BMI	-0.196	0.015	-0.353	-0.039
Gender				
Male	Reference			
Female	0.349	0.717	-1.561	2.26
Education				
Primary education	-9.947	0.011	-17.543	-2.351
Lower secondary education	-8.853	0.022	-16.374	-1.331
Upper secondary education	-8.552	0.038	-16.603	-0.502
Diploma / Associate degree	-8.363	0.035	-16.113	-0.614
Bachelor's degree	-7.846	0.041	-15.352	-0.339
Higher than Bachelor's degree	Reference			
Smoking				
Current smoker	Reference			
Never smoker	0.67	0.617	-1.986	3.326
Former smoker (quit smoking)	1.182	0.412	-1.67	4.033
Alcohol				
Current alcohol drinker	Reference			
Never drink alcohol	1.482	0.183	-0.717	3.68
Former drinker (quit drinking)	1.395	0.215	-0.825	3.615

Table 3 Cont.

Knowledge	B (Coefficients)	p-value	95%CI	
			Lower	Upper
Region				
Residing in Bangkok	Reference			
Residing outside Bangkok	2.746	0.008	0.74	4.752
Duration of psoriasis (years)				
Less than 5 years	Reference			
5–10 years	1.678	0.265	-1.3	4.655
More than 10 years	3.751	0.002	1.46	6.043
Stigmatization	0.024	0.827	-0.192	0.24
Topical medication				
Received	Reference			
Did not receive	-0.381	0.82	-3.705	2.943
Oral medication				
Received	Reference			
Did not receive	1.695	0.112	-0.405	3.794
Radiotherapy				
Received	Reference			
Did not receive	0.008	0.998	-7.415	7.43
Biological drug				
Received	Reference			
Did not receive	2.032	0.154	-0.781	4.844

Table 4 Multivariable Linear Regression Analysis of Factors Associated with Stigmatization

Stigmatization	B (Coefficients)	p-value	95%CI	
			Lower	Upper
Gender				
Male	Reference			
Female	0.726	0.472	-1.275	2.727
Health insurance scheme				
No health insurance coverage	Reference			
Civil Servant Medical Benefit Scheme	1.624	0.106	-0.355	3.604
Smoking				
Current smoker	Reference			
Never smoker	-1.086	0.398	-3.631	1.460
Former smoker (quit smoking)	-1.609	0.224	-4.221	1.003
Alcohol				
Current alcohol drinker	Reference			
Never drink alcohol	-0.806	0.456	-2.947	1.336
Former drinker (quit drinking)	-0.295	0.794	-2.532	1.942
Anxiety				
Has disorder	5.834	0.043*	0.186	11.483
No disorder	3.412	0.055	-0.073	6.897
Unsure / Never tested	Reference			
DLP				
Has disorder	0.996	0.652	-3.380	5.372
No disorder	1.872	0.378	-2.331	6.076
Unsure / Never tested	Reference			
HT				
Has disorder	-3.291	0.217	-8.555	1.974
No disorder	-3.494	0.164	-8.442	1.454
Unsure / Never tested	Reference			

Table 5 Cont.

Stigmatization	B (Coefficients)	p-value	95%CI	
			Lower	Upper
Gout				
Has disorder	-1.285	0.668	-7.231	4.660
No disorder	-5.887	0.020*	-10.808	-0.967
Unsure / Never tested	Reference			
Knowledge	0.021	0.834	-0.175	0.217
Topical medication				
Received	Reference			
Did not receive	-2.687	0.070	-5.594	0.220
Oral medication				
Received	Reference			
Did not receive	1.535	0.106	-0.335	3.406
Radiotherapy				
Received	Reference			
Did not receive	-0.568	0.847	-6.420	5.285
Biological drug				
Received	Reference			
Did not receive	0.134	0.920	-2.522	2.789

5. Conclusion

The findings indicate that patients in this tertiary dermatology setting had a mean knowledge score of 15.99 ± 3.64 out of 25 items, reflecting overall awareness of key facts about psoriasis. The highest correct items centered on fundamental, patient-facing concepts particularly that psoriasis is non-contagious, can affect both sexes and all age groups, and occurs worldwide suggesting that core educational messages delivered in clinical care may have been effectively communicated. This pattern is important in the Thai context, where misconceptions about contagion have been reported in the general population and may drive avoidance and stigmatizing behaviors (Seawthaweesin, 2018). Compared with the study by Nagarajan et al. (2016), which reported a lower mean knowledge score (11.97) among 200 patients, the higher mean score in the present sample may reflect differences in healthcare access, patient contact with specialists, or exposure to structured counseling in a specialized institute.

Importantly, multivariable regression analysis further demonstrated that knowledge levels in this tertiary dermatology population were shaped not only by clinical exposure but also by sociodemographic and biological determinants. Higher BMI was independently associated with lower knowledge scores, suggesting that metabolic burden may coincide with challenges in health literacy or disease self-management. Lower educational attainment was consistently linked to lower knowledge levels, reinforcing the central role of education in accessing, understanding, and applying medical information. Interestingly, patients residing outside Bangkok demonstrated higher knowledge scores. This finding should be interpreted cautiously, as it may reflect referral patterns rather than structural regional advantages. Patients traveling from other provinces to a national dermatology institute may represent a subgroup with longer disease duration, greater disease severity, stronger treatment motivation, or more cumulative exposure to specialist counseling. In addition, disease duration greater than 10 years was independently associated with higher knowledge, likely reflecting experiential learning and repeated healthcare interactions over time.

Nevertheless, consistent with international findings (Tian et al., 2024), knowledge gaps persisted in higher-complexity domains such as etiology, pathophysiology, genetic contributions, and specialized treatments (e.g., phototherapy). These gaps are clinically meaningful because insufficient understanding of disease mechanisms and therapeutic options may limit shared decision-making, reduce adherence to long-term treatment plans, and reinforce reliance on non-evidence-based approaches, particularly in settings where traditional beliefs coexist with biomedical care.

Regarding stigmatization, most patients reported low to moderate perceived stigma, yet only 9.3% reported no stigmatization, indicating that stigma remains a common lived experience even among patients

receiving specialist care. The prominence of "being stared at" highlights the central role of visibility in psoriasis-related stigma, consistent with qualitative findings among Thai patients describing embarrassment and social avoidance (van Beugen et al., 2017). Quantitative international studies similarly demonstrate that perceived stigmatization in psoriasis is closely linked to lesion visibility and disease severity. For example, Kowalewska et al. (2021) reported that higher PASI scores were significantly associated with greater levels of stigmatization, supporting a severity–stigma gradient. Earlier work by Ginsburg and Link (1989) also identified clinical severity and bleeding lesions as predictors of stigmatization, reinforcing the idea that visible and symptomatic disease may increase social scrutiny and internalized stigma. Therefore, the association observed in the present study between stigmatization and PASI is consistent with a well-described biopsychosocial pathway in which visible inflammatory disease amplifies perceived social rejection and self-consciousness.

When compared with Jankowiak et al. (2020), who reported that only 4.0% of patients experienced no stigmatization, the relatively lower severity observed in the current study may reflect contextual differences in healthcare access, cultural norms surrounding skin disease, or earlier-stage disease distribution in this cohort. However, stigma persisted even at lower severity levels, suggesting that psychosocial vulnerability may operate independently of purely dermatologic indicators.

Notably, anxiety disorder emerged as an independent predictor of higher stigmatization scores. This finding aligns with the broader literature demonstrating bidirectional relationships between psoriasis, psychological distress, and perceived stigma. Patients with anxiety may exhibit heightened sensitivity to social evaluation, increased vigilance toward perceived negative cues, and cognitive biases that amplify interpretations of rejection. Such mechanisms can intensify internalized stigma, even in situations where objective discrimination is limited. International studies have consistently shown that psoriasis-related stigma correlates strongly with anxiety, depression, and reduced quality of life, supporting the interpretation that psychological vulnerability magnifies stigma perception through affective and cognitive pathways. Similar psychosocial burdens and reductions in quality of life have also been documented among Thai patients with psoriasis, indicating that emotional and psychological factors play an important role in shaping patient experiences, even though their direct association with perceived stigma has not been extensively examined in this context (Thakolwiboon et al., 2013).

The association between gout and stigmatization warrants careful consideration. Gout is frequently linked to metabolic syndrome and systemic inflammatory burden, conditions that also overlap with psoriasis pathophysiology. Patients with multimorbidity may experience compounded illness identity, increased healthcare utilization, physical discomfort, and functional limitation. These factors may restrict social participation, heighten self-consciousness, and increase sensitivity to external judgments, thereby amplifying stigma experiences. Furthermore, gout—often stereotypically associated with lifestyle factors—may carry its own social connotations, potentially intensifying perceived blame or self-stigmatization when coexisting with visible skin disease. Thus, the coexistence of gout may represent not only biological comorbidity but also an added psychosocial burden contributing to higher stigmatization scores.

The multivariable findings underscore that knowledge and stigma in psoriasis are shaped by intersecting biological, psychological, and social determinants. Together, these findings support a biopsychosocial model in which clinical severity, mental health status, comorbidity burden, educational background, regional context, and cumulative disease experience interact to influence both disease knowledge and stigma perception.

Overall, even within a specialized dermatology setting, clinically meaningful knowledge gaps and psychosocial challenges persist. These findings reinforce the need for comprehensive psoriasis care that integrates tailored patient education, optimized disease control, routine psychological screening, and structured psychosocial interventions. However, given the cross-sectional design of this study, the observed associations should be interpreted with caution. While knowledge levels were associated with several patient characteristics, this does not imply that improving knowledge alone will directly reduce stigmatization. Stigma in psoriasis is likely influenced by multiple interacting biological, psychological, and social factors, and multidimensional approaches addressing both educational and psychosocial components may be

necessary to effectively mitigate stigma and improve quality of life. Similar psychosocial burdens and reductions in quality of life have also been reported among Thai patients with psoriasis, supporting the relevance of integrated care approaches. (Thakolwiboon et al., 2013; Tian et al., 2024; Kowalewska et al., 2021; Ginsburg & Link, 1989).

The present study has several limitations. First, the sample size was relatively small, which may limit statistical power and increase the risk of model instability in multivariable analyses. Second, the cross-sectional design precludes causal inference and does not allow the determination of temporal relationships between knowledge, clinical factors, and stigmatization. Third, participants were recruited from a single tertiary dermatology center, and referral patterns may have influenced the patient profile, limiting generalizability to the broader psoriasis population, particularly those managed in primary or secondary care settings. Additionally, self-reported measures may be subject to recall or response bias. Future studies should include larger, multicenter samples and longitudinal designs to better clarify causal pathways and evaluate the effectiveness of targeted educational and psychosocial interventions.

6. Acknowledgements

The study was supported by the Department of Dermatology at the Institute of Dermatology.

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