

Internalized Stigma and Psychiatric Morbidity among Patients with Psoriasis: A Study from North India

Abstract

Background: Psoriasis is a chronic inflammatory dermatosis associated with psychological morbidity. Like mental illness, it is also associated with stigma. Very few studies from India have evaluated stigma experienced by patients with psoriasis. **Aim of the Study:** To study stigma in patients with psoriasis (in the form of internalized stigma, perceived stigma, and social-participation-restriction stigma) and its relationship with demographic and clinical variables. **Methodology:** 104 patients with psoriasis assessed on the internalized stigma of mental illness scale (ISMIS), explanatory model interview catalogue stigma scale, participation scale (P-scale), perceived social support, total score of Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder (GAD-7) scale, Dermatology Life Quality Index, and Psoriasis disability index. **Results:** On ISMIS, overall, 27.9% had experienced stigma. On domains, majority of the participants experienced discrimination (52.9%) followed by stigma resistance (51.9%), stereotype (26.0%), social withdrawal (24.1%), and alienation (23.1%). Majority of them reported mild restriction. As per the evaluation by a qualified psychiatrist, about 30% of the participants had at least one psychiatric diagnosis. On comparison, those with the presence of co-morbid psychiatric illness experienced a higher level of stigma on each domain of ISMIS except discrimination and stigma resistance. Lower social support was associated with higher stigma in all the domains. All the domains of ISMIS except discrimination and stigma resistance were associated with a higher level of anxiety and depression, poor quality of life, and higher disability. **Conclusion:** The patients with psoriasis experience a significant amount of stigma and stigma is associated with the presence of psychiatric morbidity, lower social support, higher restriction, and more disability.

Keywords: Psoriasis, psychiatric illness, stigma

Introduction

Psoriasis, a chronic inflammatory dermatosis, is the second most frequent skin disease following eczema, with a worldwide incidence between 1% to 4%.^[1] Due to its chronic and disfiguring nature, it affects multiple aspects of the patient's life. In addition to the stress of the disease, patients with psoriasis also often experience interpersonal conflicts, arising due to the groundless fear of contagion of healthy persons and fear of the psoriasis patient themselves.^[1,2]

Psoriasis contributes to significant adverse psychosocial outcomes in the form of psychiatric/psychological morbidity, suicide, disturbed relationship with partner, shame, stigma, rejection, and poor quality of life.^[1]

Studies suggest that between 9 to 55% of subjects with psoriasis develop depression.^[3-6] Besides depression, a higher prevalence of anxiety, somatoform disorder, and substance use disorders have been reported among subjects with psoriasis. A systematic review and meta-analysis showed that the pooled odds ratio (OR) was 2.05 (95% confidence interval [CI], 1.54–2.74) for suicidal ideations, 1.32 (95% CI, 1.14–1.54) for suicidal attempts, and 1.2 for completed suicide (95% CI, 1.04–1.39), when compared with those without psoriasis.^[7]

Stigma is a well-known phenomenon in diseases associated with disfigurement, perceived contagiousness, and mental illnesses.^[7,8] Because of aesthetic reasons, visible lesions among subjects with skin diseases often elicit emotions of fear, disgust and a distress of possible contagiousness.^[9,10]

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All these lead to social rejection and stigma. However, data on stigma faced by subjects with psoriasis in Indian subcontinent is limited. A recent review that included 32 studies from different parts of the world concluded that about 73%–99% of subjects with psoriasis experience some degree of stigma as a result of their illness.^[11] The commonly reported aspects of stigma among subjects with psoriasis include the anticipation of rejection and feelings of guilt and shame.^[8] Studies suggest that there is a significant correlation of stigma with the intensity of pruritus, level of stress before the exacerbation, level of depressive symptoms, and quality of life.^[8] Other studies suggest that employment status, lower education level, longer duration of illness, lower age of onset, the extent of oozing lesions, higher severity of the disease, higher visibility of the disease activity, lesions on the back of the hand, lack of family history of psoriasis, being without a partner, having a smaller social network, the presence of higher levels of social inhibition, having a type D personality, and the actual experience of rejection are the strongest predictors of feelings of stigmatization.^[11] A large-sample multicentric study that evaluated internalized stigma in 1485 subjects with psoriasis reported that those who experienced higher levels of internalized stigma have poor quality of life, more negative perceptions of general health, and more psychological illnesses.^[12]

In addition, higher internalized stigma was associated with the presence of erythrodermic and generalized pustular psoriasis, inverse psoriasis, and psoriatic arthritis.^[12] In terms of body parts, the involvement of scalp, face, hand, genitalia, and fingernails were associated with a higher level of stigma. A study from South India showed that compared to patients of vitiligo, patients of psoriasis experience higher level of stigma and are faced with significantly more restrictions in a number of day-to-day life situations such as less confidence in learning and applying knowledge, difficulties in meaningfully participating in major life areas like work, education, and employment, and also in community, social, and civic life.^[13]

Although, there is some data on stigma experienced by subjects with psoriasis, it is limited, especially from developing countries like India. Hence, there is a need for further research in this area. In this context, this study aimed to evaluate stigma, psychiatric morbidity, suicidal ideations, quality of life, and disability in subjects with psoriasis. In addition, this study attempted to evaluate the factors associated with the presence of psychiatric morbidity and correlates of stigma.

Methodology

This cross-sectional study was conducted at the outpatient clinic a tertiary care institute in India. The study was approved by the ethical committee of the institute.

After obtaining the ethical approval and written informed consent, patients with chronic psoriasis plaque, aged

18–65 years, not diagnosed with any psychiatric disorder in the past were enrolled in the study. Patients who had psoriatic arthritis, erythrodermic, and pustular psoriasis and unstable comorbid physical illnesses were excluded.

Patients were evaluated using Internalised Stigma of Mental Illness scale, Explanatory Model Interview Catalogue Stigma scale, and Participation Scale to assess stigma. In addition, patients were evaluated on the Psoriasis Area and Severity Index (PASI), Psoriasis Disability Index (PDI), and Dermatology Life Quality Index (DLQI). Psychiatric diagnosis was assessed by using International Classification of Diseases, tenth revision (ICD-10 criteria. The severity of depression was rated on Patient Health Questionnaire, 9 item version and the anxiety was rated on Generalized Anxiety Disorder, 7 item version. Social Support was assessed by using multidimensional aspect of perceived social support scale.

Internalized stigma of mental illness (ISMI) scale

The ISMI scale is an interview-based instrument to assess self-stigma/internalised stigma,^[14] from the perspective of the sufferer. It comprises of 29 questions, with a 4-point rating scale (strongly disagree-1, disagree-2, agree-3, and strongly agree-4). The various items of the scale are grouped under five dimensions, i.e., alienation, stereotype endorsement, perceived discrimination, social withdrawal, and stigma resistance. The higher the scores the higher is the level of self-stigma. Of these five domains, the domain of stigma resistance basically reflects the ability of the person to fight back or resist the stigma. Accordingly, higher stigma resistance indicate the higher ability of a person to counter stigma. Items in each domain are added; a weighted score is calculated for the domain. Based on the weighted cut-off score of 2.5, the participants are categorized as experiencing or not experiencing stigma.

Explanatory model interview catalogue stigma (EMIC) scale

EMIC assesses anticipated stigma/perceived stigma^[15] from the perspective of the sufferer. It has 15 items, each rated on a 4-point scale (Yes-3, Possibly-2, Uncertain-1, and No-0). The scores obtained on the various items are added to obtain a total score, with a higher scores indicating a higher level of perceived stigma.

The Participation scale

This interview-based scale evaluates the impact of stigma from the perspective of stigmatized individuals and measures the severity of restriction on the participation of various activities.^[16] It has 18 questions, with two levels of answering options. At the first level, the participants are given five options: not satisfied, yes, sometimes, no, and irrelevant. If the participants answer to any of the questions at the first level in the form of “yes” or “sometimes,”

then the second-level problem assessment is done which has four options: no problem (1), small problem (2), medium problem (3), and large problem (4). The scores of all the items are added to obtain a total score with a higher score indicating a higher level of participation restrictions. A score of >12 is considered to be an indicator of significant participation restrictions.

Multidimensional aspect of perceived social support scale^[17,18]

This social support scale comprises of 12 items that are divided into three subscales on the source of support, each group consisting of four items. These are family (3, 4, 8, and 11), friends (6, 7, 9, and 12), and a special person (1, 2, 5, and 10). The items are rated on a 7-point Likert scale with scores varying between “definitely no” and “definitely yes”.

Patient health questionnaire-9 (PHQ-9)

This is a brief self-administered depression scale that evaluates each of the nine criteria of the Diagnostic and Statistical Manual, Fourth Revision (DMS-IV), each rated as “0” (not at all) to “3” (nearly every day).^[19] Hindi version of PHQ-9 was used in this study.^[20]

Generalized anxiety disorder questionnaire-7 (GAD-7)

This seven items questionnaire was developed to screen patients for anxiety and rate the severity of anxiety. Each item is rated on a fourpoint scale (0–3) for the severity of the symptoms in the previous 2 weeks. Scores of 5, 10, and 15 are taken as the cutoff for mild, moderate, and severe anxiety, respectively. The threshold score of 10 is considered to have a sensitivity of 89% and a specificity of 82% for GAD.^[21]

International classification of diseases, tenth revision (ICD-10) criteria

All the participants were evaluated for psychiatric diagnosis as per the ICD-10 criteria,^[22] by using a semi-structured interview.

Psoriasis disability index (PDI)

It is a self-explanatory questionnaire to assess disability in patients with psoriasis.^[23]

Dermatology life quality index (DLQI)

The DLQI is the most frequently used instrument in the studies of dermatology to assess the quality of life.^[24]

Data was analyzed by using Statistical Package for Social Sciences, 14th version (SPSS-14). Categorical variables are described using frequency/percentage and continuous variables were analysed in the form of mean and standard deviation with range. Comparisons were carried out using Chi-square tests, Student’s *t*-tests, and

Mann–Whitney-U tests. The correlates of stigma were evaluated by using Pearson’s or Spearman’s correlation coefficients.

Results

The study included 104 subjects with the mean age of the participants being 36.3 (SD: 3.5) years. The majority of the participants were males (60.6%), married (72.1%), and from the urban locality (57.7%). There was nearly equal representation of subjects from nuclear and extended/joint families [Table 1]. Clinical profile of the sample is depicted in Table 1.

As per the evaluation by a qualified psychiatrist, about 30% of the participants had at least one psychiatric diagnosis, with adjustment disorder (N = 11;10.6%) being the most common diagnosis [Table 2]. In terms of suicidal behavior, as assessed by PHQ-9, suicidal item, 21 (19.2%) patients had suicidality.

In terms of stigma, the mean weighted score was highest for the domain of perceived discrimination and stigma resistance, followed by the mean score of alienation, stereotype endorsement, and social withdrawal. In terms of the presence of stigma, the highest proportion of patients reported internalized stigma in the domain of perceived discrimination followed by stigma resistance [Table 3]. On EMIC scale, the mean total score was 14.7 (SD: 11.9) and the mean participation scale score was 24.6 (SD: 11.2), with 100% participants reporting some restriction in participation [Table 3].

Table 1: Sociodemographic profile and clinical characteristics

Variable	Mean (SD)/Frequency (%)
Physical comorbidity-Present [#]	15 (14.8%)
Age of onset of illness (in years)	28.6 (13.2)
Duration of illness	92.6 (73.9)
Morphological subtypes of Psoriasis	
Guttate - Yes	18 (17.3%)
Lichenoid - Yes	3 (2.9%)
Seasonal exacerbation	62 (59.6%)
Seasonal improvement	57 (54.2%)
Koebner’s phenomenon	21 (20.2%)
Body Surface Area	
Mild (<3%)	12 (11.5%)
Moderate (3%-10%)	77 (74.0%)
Severe (>10%)	15 (14.4%)
Body Surface Area	
Mean score	7.9 (5.9)
Dermatology Life Quality Index	5.9 (4.4)
Psoriasis disability index	4.4 (5.5)

[#]Diabetes mellitus (n=3), Hypertension (n=3), Both diabetes mellitus and hypertension (n=2), Hypothyroidism (n=1), Seizure disorder (n=1) and Irritable Bowel Disease (n=1)

Table 2: Psychiatric morbidity in the study participants

Variables	Frequency (%)
Psychiatric Diagnosis as per the ICD-10 criteria	
No psychiatric disorder as per ICD-10 criteria	73 (70.2%)
Depressive episode	6 (5.8%)
Recurrent Depressive disorder	3 (2.9%)
Dysthymia	7 (6.7%)
Adjustment disorder	11 (10.6%)
Mixed anxiety-depressive disorder	2 (1.9%)
Anxiety NOS	1 (1.0%)
Somatoform disorder	1 (1.0%)
Details of substance abuse	
Tobacco dependence currently abstinent	1 (1.0%)
Alcohol abuse currently abstinent	1 (1.0%)
PHQ-9 Total Score	13.2 (5.7)
PHQ-9 Severity Grades	
Minimal (1-4)	70 (67.3%)
Mild (5-9)	14 (13.5%)
Moderate (10-14)	10 (9.6%)
Moderately severe (15-19)	7 (6.7%)
Severe (20-27)	3 (2.9%)
Suicidal item score on PHQ-9 item of suicidal behaviour	1.4 (0.8)
Grades for the suicidal item score on PHQ-9 item of suicidal behaviour	83 (79.8%)
Not at all	8 (7.7%)
Several days	10 (9.6%)
More than half of the days	3 (2.9%)
Nearly every day	
GAD-7 total score	10.04 (4.7)
GAD-7 Severity grades	
Mild (0-5)	0
Moderate (6-10)	72 (69.2%)
Severe (11-21)	32 (30.8%)

Factors associated with psychiatric morbidity

Participants with current (N = 31) and without current psychiatric morbidity (N = 73) as per the evaluation by the psychiatrist did not differ in terms of demographic variables, age of onset, duration of illness, seasonal exacerbation, seasonal improvement, presence of Koebner's phenomenon, presence of guttate orlichenoid lesions, and the mean body surface area involved. Compared to those without psychiatric morbidity, a higher proportion of those with psychiatric morbidity had moderate to severe involvement of body surface area ($P = 0.018$), higher level of disability ($P = 0.001$) and poor quality of life ($P = 0.001$).

Factors associated with stigma

The presence of psychiatric morbidity was associated with higher stigma scores and higher prevalence of stigma in

all the domains, except for perceived discrimination and stigma resistance [Table 4].

Presence of stigma in the domain of alienation was associated with a higher level of education ($P = 0.038$), being female ($P = 0.008$), poorer quality of life as per DLQI ($P = 0.017$), higher disability as per PDI ($P = 0.03$), higher level of depressive symptoms ($P < 0.001$), higher level of anxiety symptoms ($P < 0.001$), lower perceived social support ($P < 0.001$), higher in restriction, and severe/extreme restriction in participation ($P < 0.001$).

In terms of demographic and clinical profiles, stereotype endorsement was associated with poorer quality of life as per DLQI ($P = 0.006$), higher disability as per PDI ($P = 0.001$), higher level of depressive symptoms ($P < 0.0001$), higher level of anxiety symptoms ($P < 0.0001$), lower perceived social support ($P < 0.0001$), higher in restriction, and severe/extreme restriction in participation ($P < 0.001$).

The stigma in the domain of perceived discrimination domain was associated with female gender (0.033), poorer quality of life as per DLQI ($P = 0.006$), higher level of depressive symptoms ($P < 0.0001$), higher level of anxiety symptoms ($P < 0.0001$), and lower perceived social support ($P < 0.0001$).

The presence of stigma in the social withdrawal was associated with female gender (0.033), poorer quality of life as per DLQI ($P = 0.001$), higher disability as per the PDI ($P = 0.001$), higher level of depressive symptoms ($P < 0.0001$), higher level of anxiety symptoms ($P < 0.0001$), lower perceived social support ($P < 0.0001$), higher in restriction, and severe/extreme restriction in participation ($P < 0.001$).

The presence of stigma resistance was associated with poorer quality of life as per DLQI ($p = 0.001$) and higher disability as per the PDI ($P = 0.001$).

The presence of stigma as determined by the total score was associated with poorer quality of life as per DLQI ($P = 0.001$), higher disability as per the PDI ($P < 0.001$), higher level of depressive symptoms ($P < 0.0001$), higher level of anxiety symptoms ($P < 0.0001$), lower perceived social support ($P < 0.0001$), higher restriction in the participation ($P < 0.0001$), and severe/extreme restriction in participation ($P < 0.001$).

In terms of stigma scores, higher stigma in the alienation domain was associated with higher body surface involvement, which in turn was associated with higher stigma resistance, higher total stigma score without the stigma resistance domain and participation restriction.

All the domains, except for domains of perceived discrimination and stigma resistance were associated with higher severity of depression, poorer quality of life, higher disability, and higher level of anxiety. EMIC total score was also associated with similar correlates [Table 5]. Lower social support was associated

Table 3: Level of stigma (ISMI)

Variables	Mean (SD)	Stigma present (i.e., mean score >2.5)
Alienation	2.3 (0.4)	24 (23.1%)
Stereotype endorsement	2.2 (0.4)	27 (26.0%)
Perceived discrimination	2.5 (0.3)	55 (52.9%)
Social withdrawal	2.2 (0.4)	25 (24.1%)
Stigma resistance	2.5 (0.3)	54 (51.9%)
Total score (with stigma resistance)	2.3 (0.3)	28 (26.9%)
Total score (without stigma resistance)	2.3 (0.3)	29 (27.9%)
Explanatory Model Interview Catalogue Stigma Scale	14.7 (11.9)	
Total Participation Scale score	24.6 (11.2)	
Total Participation scale score >12		104 (100%)
No restriction (0-12)		0 (0.0%)
Mild restriction		74 (71.2)
Moderate restriction		6 (5.8%)
Severe restriction		21 (20.2%)
Extreme restriction		3 (2.9%)
Multidimensional aspect of perceived social support scale	5.8 (0.6)	
Multidimensional aspect of perceived social support scale		
Significant Other Subscale	5.83 (0.6)	
Family Subscale	5.9 (0.6)	
Friends Subscale	5.79 (0.7)	
Level of support		
Low (1-2.9)		0
Moderate (3-5.0)		13 (12.5%)
High (5.1-7)		91 (87.5%)

Table 4: Level of stigma (ISMI) among those with and without psychiatric morbidity

Variables	Psychiatric illness (Present)	Psychiatric illness (Absent)	Chi-square/ <i>t</i> -test (<i>P</i>)
	<i>n</i> =31 Mean (SD)/Frequency (%)	<i>n</i> =73 Mean (SD)/Frequency (%)	
Alienation	2.7 (0.4)	2.1 (0.4)	7.230 (<i>P</i> <0.001***)
Stereotype endorsement	2.6 (0.4)	2.1 (0.3)	8.135 (<i>P</i> <0.001***)
Perceived discrimination	2.5 (0.2)	2.5 (0.3)	0.331 (0.741)
Social withdrawal	2.6 (0.4)	2.0 (0.3)	8.570 (<i>P</i> <0.001***)
Stigma resistance	2.5 (0.3)	2.5 (0.3)	0.452 (0.652)
Total score (stigma)	2.6 (0.3)	2.2 (0.2)	7.093 (<i>P</i> <0.001***)
Presence of Stigma			
Alienation	18 (58.1%)	6 (8.2%)	30.456 (<i>P</i> <0.001***)
Stereotype endorsement	20 (64.5%)	7 (9.5%)	34.154 (<i>P</i> <0.001***)
Perceived discrimination	16 (51.6%)	39 (53.4%)	0.029 (<i>P</i> =0.866)
Social withdrawal	21 (67.7%)	4 (5.4%)	46.196 (<i>P</i> <0.001***)
Stigma resistance	18 (58.8%)	36 (49.3%)	0.667 (<i>P</i> =0.414)
Total score (stigma)	9 (29.0%)	19 (26.0%)	43.547 (<i>P</i> <0.001***)

****P*<0.001

with higher stigma in all the domains. Further, higher internalized stigma was associated with higher participation restriction [Table 5].

Discussion

This cross-sectional study shows that about 30% of subjects with psoriasis have at least one psychiatric diagnosis, with a broad diagnosis of depressive disorders (dysthymia and depression) and adjustment disorder being the most common

diagnoses. In addition, this study shows that besides syndromal depression and anxiety disorder, a significant proportion of patients have subsyndromal depressive and anxiety symptoms. About one fifth of the patients have suicidal ideations or suicidal behaviour. When the findings of the present study are compared with that of the existing literature, the prevalence of depressive disorders is in the reported range of 9 to 55% among the subjects with psoriasis^[3-5] and is also comparable to the figure of 12–19%

Table 5: Correlates of Stigma in the study sample

Variables	Alienation	Stereotype endorsement	Perceived discrimination	Social withdrawal	Stigma resistance	Total score with stigma resistance	Total score without stigma resistance	EMIC Scale Score
Age	0.123 (0.212)	0.137 (0.164)	0.047 (0.632)	0.121 (0.223)	0.016 (0.872)	0.121 (0.222)	0.131 (0.187)	0.095 (0.336)
Education	0.182 (0.064)	0.057 (0.568)	0.046 (0.645)	0.043 (0.663)	0.085 (0.390)	0.064 (0.522)	0.082 (0.406)	0.178 (0.070)
Age of onset	0.110 (0.268)	0.050 (0.612)	0.064 (0.517)	0.142 (0.150)	0.008 (0.932)	0.124 (0.209)	0.131 (0.184)	0.165 (0.095)
Duration of illness	0.114 (0.251)	0.050 (0.612)	0.054 (0.689)	0.027 (0.786)	0.074 (0.452)	0.078 (0.429)	0.072 (0.470)	0.118 (0.233)
Body Surface Area	0.197 (0.045*)	0.186 (0.058)	0.110 (0.266)	0.186 (0.059)	0.075 (0.448)	0.201 (0.041*)	0.202 (0.039*)	0.067 (0.501)
Dermatology Life Quality Index	0.245 (0.012*)	0.258 (0.008**)	0.079 (0.424)	0.256 (0.009**)	0.041 (0.678)	0.250 (0.011*)	0.257 (0.008*)	0.234 (0.017*)
Psoriasis disability index	0.332 (0.001**)	0.329 (0.001**)	0.087 (0.378)	0.333 (0.001**)	0.082 (0.407)	0.329 (0.001**)	0.334 (<0.001***)	0.342 (<0.001***)
PHQ-9 score	0.571 (<0.001***)	0.566 (<0.001***)	0.133 (0.177)	0.618 (<0.001***)	0.153 (0.122)	0.576 (<0.001***)	0.585 (<0.001***)	0.612 (<0.001***)
PHQ-9 suicidal ideation score	0.452 (<0.001***)	0.494 (<0.001***)	0.081 (0.415)	0.489 (<0.001***)	0.101 (0.310)	0.464 (<0.001***)	0.472 (<0.001***)	0.521 (<0.001***)
GAD-7	0.659 (<0.001***)	0.668 (<0.001***)	0.149 (0.132)	0.673 (<0.001***)	0.155 (0.115)	0.654 (<0.001***)	0.666 (<0.001***)	0.643 (<0.001***)
Family support (PSS)	-0.473 (0.001***)	-0.558 (0.001***)	0.069 (0.489)	-0.644 (0.001***)	-0.094 (0.341)	-0.531 (0.001***)	-0.546 (0.001***)	-0.500 (0.001***)
Friend support (PSS)	-0.438 (0.001***)	-0.479 (0.001***)	0.102 (0.302)	-0.594 (0.001***)	0.127 (0.199)	-0.492 (0.001***)	-0.500 (0.001***)	-0.394 (0.001***)
Other social support (PSS)	-0.532 (0.001***)	-0.573 (0.001***)	0.122 (0.219)	-0.680 (0.001***)	0.120 (0.227)	-0.576 (0.001***)	-0.591 (0.001***)	-0.560 (0.001***)
Total participation score	0.618 (<0.001***)	0.630 (<0.001***)	0.231 (0.018*)	0.646 (<0.001***)	0.208 (0.034*)	0.641 (<0.001***)	0.645 (<0.001***)	0.614 (<0.001***)

* $P \leq 0.05$; ** ≤ 0.01 ; *** $P \leq 0.001$

when the participants are evaluated as per the ICD-10 and DSM-IV criteria.^[3,6] The prevalence of other psychiatric disorders is also comparable with the previous studies.^[25] The prevalence of suicidal ideations and behavior is also comparable with the existing literature.^[26] In view of these findings and the existing literature, it can be said that subjects with psoriasis must be routinely evaluated for psychiatric morbidity and suicidality. Although, it may not be feasible to seek a psychiatric consultation for all patients with psoriasis, all patients must be screened by using simple screening instruments like PHQ-2, PHQ-4 or PHQ-9, and GAD-7 for the presence of common psychiatric morbidity and those found to have the same must be evaluated in detail in liaison with a mental health professional.

In the present study, the mean weighted score was highest for the domain of perceived discrimination and stigma resistance, and these were followed by a mean score of alienation, stereotype endorsement, and social withdrawal. In terms of the presence of stigma, the highest proportion of patients reported internalized stigma in the domain of perceived discrimination, followed by stigma resistance, stereotype endorsement, social withdrawal, and alienation. Available data suggests that 73%–99% of subjects with psoriasis experience some degree of stigma due to their illness.^[11] However, in the present study rates of stigma

were lower. These comparisons must be interpreted in light of the differences in the assessment instruments and the cut-off values. A large-sample multicentric study, although evaluated the internalized stigma in 1485 subjects with psoriasis, by using ISMI, it did not provide the details of the mean scores and the prevalence of stigma as per the ISMI.^[12] Hence, it is not possible to compare the findings of the present study with these study. Occasional study have assessed stigma by using ISMI in patients with other dermatological conditions, like acne vulgaris, vitiligo, and alopecia areata.^[27] However, this study did not provide the mean scores for various domains. Hence, we are not able to compare the findings of our study with other dermatological conditions. For patients, with various dermatological disorders, the authors reported the lowest score for the subscale of stigma resistance and highest score was reported for the subscale of alienation for patients with vitiligo.^[27] In contrast to this finding, our study suggests relatively higher scores for the subscale of stigma resistance, indicating lower vulnerability to stigma.

Many studies from India have evaluated stigma among patients with severe mental disorders by using ISMI.^[28,29] A multicentric study from India, which included patients with schizophrenia, bipolar disorder, and recurrent depressive disorder reported the prevalence of stigma in the domains

of alienation to be 20.1%, stereotype endorsement to be 35.7%, perceived discrimination experience to be 33%, social withdrawal to be 37.5%, stigma resistance to be 38.3%, and stigma as per the ISMI, after excluding stigma resistance domain to be 29.4%. In terms of participation restriction, severe to extreme participation, restriction was reported by 56% of the participants. Compared to other two diagnoses, patients with schizophrenia reported higher stigma.^[27] If we compare the findings of the present study with this data, it is apparent that compared to subjects with severe mental disorders, higher proportion of subjects with psoriasis experience perceived discrimination, but lower proportion of them experience stigma in other domains and severe to extreme restriction in participation. These findings suggest that compared to mental disorders, psoriasis is associated with slightly higher perceived discrimination, but do not differ much with respect to other domains of stigma as assessed by ISMI. Accordingly, the clinicians dealing with subjects with psoriasis need to evaluate stigma experienced by subjects with psoriasis and develop public awareness programs to mitigate the same. This will go a long way in improving the overall outcome and quality of life of subjects with psoriasis.

In the present study, quality of life was evaluated by DLQI and disability was assessed by using PDI. The mean DLQI score for the study sample was 5.9 (4.4) indicating a moderate level of impairment in quality of life. Some of the earlier studies from India, which have evaluated the quality of life also suggest a small to moderate level of impairment in quality of life in patients with psoriasis and the mean scores obtained in the present study are comparable with other studies.^[30,31]

In terms of correlates of stigma, the present study suggests that the presence of psychiatric morbidity, and subsyndromal depressive and anxiety symptoms and poor perceived social support are associated with higher internalized stigma among subjects with psoriasis. In terms of outcome, stigma is associated with poor quality of life and higher disability. These findings of the present study of the association of stigma with psychiatric morbidity are supported by the existing literature^[8,11] and are understandable if someone considers the double jeopardy experienced by these patients. The existing literature also supports the association of stigma with poor social support.^[11] In view of these findings, it can be said that any attempt to improve the outcome of subjects with psoriasis must focus on identifying and managing psychiatric morbidity adequately and improving the social support of these subjects.

The existing literature also suggests, although inconsistently, an association of higher level of stigma with variables, like employment status, lower education level, longer duration of illness, lower age of onset, and severity of the disease.^[11] However, the findings of the present study

do not support these associations. The association of stigma with the extent of visibility of the disease activity has also been associated.^[11] However, this association could not be evaluated in the present study, in view of the small sample size, especially, in terms of involvement of different body surface areas.

The present study has certain limitations. First, this study involved the selection of the subjects by purposive sampling. Second, the sample size was relatively small and the study involved a cross-sectional assessment of the participants. The assessment of stigma was limited to certain scales and various other aspects of stigma, such as the impact on various domains, and discrimination at specific places was not assessed. Further, other psychosocial variables, such as self-esteem, coping, personality features, etc., which can have a significant impact on experience and reporting of stigma could not be evaluated. Suicidality was assessed by using only a single item of PHQ-9 scale. The study was limited to clinic attending participants, and accordingly, the findings cannot be generalized to the community samples, not attending the dermatology clinics. Future studies must attempt to overcome these limitations.

To conclude, the present study suggests that more than one-fourth of the subjects with psoriasis have a diagnosable current psychiatric disorder, other than substance use disorders. Further, more than half the subjects with psoriasis experience perceived discrimination while one fourth experience stigma in the domains of alienation, stereotype endorsement, and social withdrawal. About half of the patients with psoriasis also report stigma resistance, suggesting that they are able to handle the stigma. In terms of restriction in life, due to the illness, all the psoriasis patients face some amount of participation restriction, with about one-fourth facing severe to extreme restrictions. The presence of psychiatric morbidity is associated with a higher level of stigma which is associated with poorer quality of life, higher disability, higher level of depressive symptoms, higher level of anxiety symptoms, lower perceived social support, and severe/extreme restriction in participation. Keeping in mind, the above findings, it is important that all patients with psoriasis should be evaluated for the presence of psychiatric morbidity, stigma faced and appropriate social support provided. It can be said that addressing these issues can possibly reduce the disability and participation restriction and improve the overall quality of life of the patients.

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Conflicts of interest

There are no conflicts of interest.

References

- Chovatiya R, Silverberg JI. Pathophysiology of atopic dermatitis and psoriasis: Implications for management in children. *Children (Basel)* 2019;6:108.
- Multifactorial cutaneous diseases- Psoriasis vulgaris. In: Herth W, Gieler U, Kusnir D, Tausk FA, editors. *Clinical Management in Psychodermatology*. Leipzig, Germany: Springer-Verlag Berlin Heidelberg, le-tex publishing services oHG. 2009, p. 91-5.
- Kleyn CE, Talbot PS, Mehta NN, Sampogna F, Bundy C, Ashcroft DM, *et al.* Psoriasis and mental health workshop report: Exploring the links between psychosocial factors, psoriasis, neuroinflammation and cardiovascular disease risk. *Acta Derm Venereol* 2020;100:1-8.
- Dommasch ED, Li T, Okereke OI, Li Y, Qureshi AA, Cho E. Risk of depression in women with psoriasis: A cohort study. *Br J Dermatol* 2015;173:975-80.
- Koo J, Marangell LB, Nakamura M, Armstrong A, Jeon C, Bhutani T, *et al.* Depression and suicidality in psoriasis: Review of the literature including the cytokine theory of depression. *J Eur Acad Dermatol Venereol* 2017;31:1999-2009.
- Dowlathshahi EA, Wakkee M, Arends LR, Nijsten T. The prevalence and odds of depressive symptoms and clinical depression in psoriasis patients: A systematic review and meta-analysis. *J Invest Dermatol* 2014;134:1542-51.
- Ghorbanibirgani A, Fallahi-Khoshknab M, Zarea K, Abedi H. The lived experience of psoriasis patients from social stigma and rejection: A qualitative study. *Iran Red Crescent Med J* 2016;18:e27893.
- Hrehorow E, Salomon J, Matusiak L, Reich A, Szepeitowski JC. Patients with psoriasis feel stigmatized. *Acta Derm Venereol* 2012;92:67-72.
- Bohm D, Stock Gissendanner S, Bangemann K, Snitjer I, Werfel T, Weyergraf A, *et al.* Perceived relationships between severity of psoriasis symptoms, gender, stigmatization and quality of life. *J Eur Acad Dermatol Venereol* 2013;27:220-6.
- Richards HL, Fortune DG, Griffiths CE, Main CJ. The contribution of perceptions of stigmatisation to disability in patients with psoriasis. *J Psychosom Res* 2001;50:11-5.
- Chen A, Beck KM, Tan E, Koo J. Stigmatization in psoriasis. *J Psoriasis Psoriatic Arthritis* 2018;3:100-6.
- Alpsoy E, Polat M, FettahluGlu-Karaman B, Karadag AS, Kartal-Durmazlar P, Yalcın B, *et al.* Internalized stigma in psoriasis: A multicenter study. *J Dermatol* 2017;44:885-91.
- Pichaimuthu R, Ramaswamy P, Bikash K, Joseph R. A measurement of the stigma among vitiligo and psoriasis patients in India. *Indian J Dermatol Venereol Leprol* 2011;77:300-6.
- Ritsher BJE. Internalized stigma of mental illness: Psychometric properties of a new measure. *Psychiatry Res* 2003;121:31-49.
- Weiss M. Explanatory model interview catalogue (EMIC): Framework for comparative study of illness. *Transcult Psychiatry* 1997;34:235-63.
- Brakel V, Anderson AM, Mutatkar RK, Bakirtzief Z, Nicholls PG, Raju MS, *et al.* The Participation Scale: Measuring a key concept in public health. *Disabil Rehabil* 2006;28:193-203.
- Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA. Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *J Pers Assess* 1990;55:610-7.
- Ottenbreit ND, Dobson KS. Avoidance and depression: The construction of the cognitive-behavioral avoidance scale. *Behav Res Ther* 2004;42:293-313.
- Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: Validity of a brief depression severity measure. *J Gen Intern Med* 2001;16:606-13.
- Avasthi A, Varma SC, Kulhara P, Nehra R, Grover S, Sharma S. Diagnosis of common mental disorders using PRIME MD Patient Health Questionnaire. *Indian J Med Res* 2008;127:159-64.
- Spitzer RL, Kroenke K, Williams JBW, Lowe B. A brief measure for assessing generalized anxiety disorder: The GAD-7. *Arch Intern Med* 2006;166:1092-7.
- World Health Organization. *International Classification of Disease, Mental and Behavioral Disorders, Tenth Revision*, 1992.
- Finlay AY, Kelly SE. Psoriasis: An index of disability. *Clin Exp Dermatol* 1987;12:8-11.
- Finlay AY, Khan GK. Dermatology life quality index (DLQI): A simple practical measure for routine clinical use. *Clin Exp Dermatol* 1994;19:210-6.
- Parisi R, Webb RT, Kleyn CE, Carr MJ, Kapur CN, Griffiths CEM, *et al.* Psychiatric morbidity and suicidal behaviour in psoriasis: A primary care cohort study. *Br J Dermatol* 2019;180:108-15.
- Singh S, Taylor C, Kornmehl H, Armstrong AW. Psoriasis and suicidality: A systematic review and meta-analysis. *J Am Acad Dermatol* 2017;77:425-40.
- Temel AB, Bozkurt S, Senol Y, Alpsoy E. Internalized stigma in patients with acne vulgaris, vitiligo, and alopecia areata. *Turk J Dermatol* 2019;13:109-16.
- Grover S, Avasthi A, Singh A, Dan A, Neogi R, Kaur D, *et al.* Stigma experienced by patients with severe mental disorders: A nationwide multicentric study from India. *Psychiatry Res* 2017;257:550-8.
- Singh A, Mattoo SK, Grover S. Stigma and its correlates in patients with schizophrenia attending a general hospital psychiatric unit. *Indian J Psychiatry* 2016;58:291-300.
- Vettuparambil A, Asokan N, Narayanan B. Psoriasis can markedly impair the quality of life of patients irrespective of severity: Results of a hospital-based cross-sectional study. *Muller J Med Sci Res* 2016;7:111-4.
- Simi SM, Anish TS, Jeny MS, Hainaf E, Suja V. Quality of life of patients with psoriasis seeking care from out patient department (OPD) of a tertiary care centre of South India assessed by dermatology life quality index (DLQI) and its correlation with psoriasis area severity index (PASI). *Ind J Clin Exp Dermatol* 2017;3:182-6.