

INVESTIGATIVE REPORT

Discriminating the Presence of Psychological Distress in Patients Suffering from Psoriasis: An Application of the Clinimetric Approach in Dermatology

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Psoriasis is a chronic dermatologic disease that negatively impacts physical and mental health of patients as well as their social and work life. The aim of this study is to illustrate, by a clinimetric approach, the differences in psychological distress and well-being between patients with mild and moderate to severe psoriasis. Seventy patients with psoriasis were evaluated using the Structured Clinical Interview for DSM-IV (SCID-I), the Diagnostic Criteria for Psychosomatic Research (DCPR), along with the following self-report instruments: the Symptoms Questionnaire (SQ), the Psychological Well-being scales (PWB) and the Temperament and Character Inventory (TCI). Illness severity was evaluated using the Psoriasis Area and Severity Index (PASI). While no differences were reported between groups in terms of psychiatric diagnoses, patients with greater severity (PASI >10) presented higher rates of demoralization (61.5%) and Type A behaviour (53.8%) than subjects with mild severity (17.5% and 21.1%, respectively). Patients with moderate/severe psoriasis also reported impaired levels of psychological well-being in terms of lower autonomy, environmental mastery, personal growth and purpose in life. Furthermore, according to TCI, patients with severe psoriasis reported greater harm avoidance and lower self-directness than individuals with milder psoriasis levels. Overall results highlighted the need in psoriasis care of a more comprehensive psychological and psychosomatic assessment not limited to the customary psychiatric diagnostic criteria. **Key words:** dermatological diseases; psoriasis; well-being; personality; distress.

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The term *clinimetric* was introduced by Feinstein in 1982 (1). He noticed that despite all the improvements in assessment methods, a number of clinical phenomena were still unconsidered during the evaluation process. Feinstein argued that, even though many indexes have

been used to classify diseases, most are inadequate to evaluate clinical phenomena. Thus, he highlighted the need of new indexes to deal with clinical information which do not find room in the customary diagnostic taxonomy. Such information includes those factors that dermatologists and, more in general physicians, pay attention to in clinical practice. For example, severity is often determined by the number of symptoms which are mostly assessed according to a cross-sectional prospective. Clinimetric indexes instead add information such as types of symptoms and sequence of presentation, that are clinically relevant especially when treatment decisions are involved. Similar considerations apply to the longitudinal course of the disease. For instance, the rate of progression of an illness (staging) is important not only because it defines the clinical state of patients in a certain point in time (evaluation), but also because it gives information about their current position on the continuum of the course of illness. Staging thus plays a key role in managing chronic diseases such as psoriasis which is characterized by attention and worsening phases. Again, gathering information about comorbidity (number and severity of comorbid medical and mental conditions), response to previous treatments (onset of side effects, resistance, tolerance, etc), as well as patients' general functioning in their daily life, occurrence of life events, and psychological and social well-being, is crucial when physicians are pondering treatment choices.

According to clinimetrics, indexes should not only have psychometric properties such as validity and reliability, but they should provide a standard of *responsiveness*. This last criterion refers to aspects such as: clinical pertinence, instruction comprehensibility, discriminant validity and ease of use. Another essential requisite for a clinimetric measure is sensibility, namely the ability to detect clinically relevant changes in health status over time (2). Likewise, the clinimetric concept of incremental validity, that refers to the unique contribution (or incremental increase) in predictive power associated with a particular assessment procedure, is an essential aspect of the clinical decision process (2). Accordingly, each distinct aspect of a measurement should deliver a unique increase in information to qualify for inclusion.

All these characteristics are essential, because a tool can be valid and reliable but not clinically relevant (2). However, current formal strategies of assessment fail to capture most of this information.

The use of clinimetric criteria to evaluate psychological distress in dermatology

The Diagnostic and Statistical Manual (DSM) of Mental Disorders appeared almost 3 decades ago and revolutionized the ways psychiatrists and psychologists diagnosed psychopathology. It resulted in impressive gains in decreased variance due to different assessors. However, the use of diagnostic criteria to identify psychiatric disorders has notably reduced the ability to collect some clinically relevant information. The DSM has been criticized for the lack of homogeneity of the clinical syndromes it defines. There could be many combinations of symptoms resulting in many clinical case conceptualizations. A DSM diagnosis may thus encompass a wide range of manifestations, seriousness and prognosis and also miss the individual patient's treatment history such as responses to previous treatments: the patient's current symptomatology may have developed over the years and may reflect previous treatments. The clinical taxonomy misses these distinctions in its classification which are able to demarcate major prognostic and therapeutic differences among patients who otherwise seem to be deceptively similar since they share the same diagnosis. Missing this data may contribute to partial or complete therapy failures.

The need to evaluate such information is even more relevant when treating patients with chronic illnesses. Several dermatologic diseases present a chronic course and are usually associated with a number of medical and psychiatric comorbidities (3, 4). Indeed, it has been estimated that at least 30% of dermatologic patients present significant psychiatric comorbidities.

Psychiatric disease and psychological distress may have a profound effect on quality of life, psychological well-being and how the disease process is experienced. This is particularly true for psoriasis. Psoriasis is a chronic dermatologic disease that may exert a negative impact on patients' physical, social, and psychological health to the same extent as other chronic health conditions, including cancer, heart disease, and diabetes (3). A number of studies have found a correlation between the occurrence of psoriasis and psychiatric disorders such as depression and anxiety (5). However, major psychiatric disorders and life dissatisfaction have been proved to not differ across severity levels of the illness (5). Moreover, most investigations have conducted their evaluation using mainly constructs such as those adopted by the customary psychiatric classification (6). As a result, several aspects of emotional distress and psychological impairment have not been considered, even

though minor psychological distress has been proved to affect about half of the patients with psoriasis (5, 6).

In cardiac patients the use of an assessment procedure based on the clinimetric approach has been proved to be suitable in identifying psychological impairment (7, 8). The aim of this investigation is to illustrate the feasibility and the incremental clinical validity of a clinimetric assessment in dermatologic patients suffering from psoriasis. Specifically, our study is going to demonstrate how a clinimetric assessment approach may help in discriminating psoriasis patients with different severity of illness in terms of the presence of psychological distress.

METHOD

Seventy patients with a clinical diagnosis of documented psoriasis were recruited at Dermatology Clinic of Florence, Italy from April 2011 to September 2011. Patients were recruited during routine follow-up. Psoriasis severity was evaluated by the dermatologist. A clinical psychologist who was blind to the illness severity conducted the psychological evaluation the same day of the medical assessment.

Psoriasis assessment

The Psoriasis Area and Severity Index (PASI) was used to establish severity of psoriasis. The human body is divided into 4 sections scored separately (head (H) (10% of a person's skin); arms (A) (20%); trunk (T) (30%); legs (L) (40%)). The 4 scores are then combined into the final PASI score. Also, within each body area, the severity is estimated by 3 clinical signs: erythema (redness), induration (thickness) and desquamation (scaling). Severity is evaluated on a scale of 0 (none) to 4 (maximum). The sum of all 3 severity parameters is then calculated for each section of skin, multiplied by the area score for that area and multiplied by the weight of the respective section. Accordingly, patients were divided into two groups: mild psoriasis (PASI < 10), and moderate to severe psoriasis (PASI ≥ 10).

Psychological assessment

The Structured Clinical Interview for DSM-IV (SCID-I) (9) was used in accord with the standard psychiatric assessment and was used to evaluate the presence of mood and anxiety disorders.

The clinimetric assessment encompassed both self-rated and clinician rated instruments. Specifically, the presence of psychosomatic syndromes was evaluated using the interview for the Diagnostic Criteria for Psychosomatic Research (DCPR) (10). Subjects were also asked to complete the following self-rated questionnaires: Kellner's Symptom Questionnaire (SQ) (11), a widely used 92-item instrument for the measurement of 4 scales of distress (anxiety, depression, somatization and hostility-irritability); Ryff's Psychological Well-Being scales (PWB) (12) consisting of 6 scales for the assessment of psychological well-being dimensions according to the Ryff's theoretical model (autonomy, environmental mastery, personal growth, purpose in life, positive relations, and self-acceptance); the Temperament and Character Inventory (TCI) to assess individual differences according to the Cloninger's biosocial model of personality defined as constituted by 4 temperamental traits (Harm Avoidance-HA, Novelty Seeking-NS, Reward Dependence-RD and Persistence-P) and 3 character dimensions (Self-Directedness-SD, Cooperativeness-C and Self-Transcendence-ST) (13).

Statistical analyses

Two tailed Student's *t*- and Fisher's tests were used to compare severity groups in sociodemographic and psychiatric variables as appropriate. The General Linear Model was used to evaluate differences in questionnaire scores between PASI groups. Age, social and work status along with illness duration were also included in the model as covariates. Due to the exploratory nature of the study the Bonferroni's correction was not applied. All analyses were performed using the software SPSS 22.0 for windows. All significance levels were set at $\alpha=0.05$.

RESULTS

Sample description

The sample consisted of 70 psoriasis patients with a mean age of 47.87 years (SD 14.67). The majority of the sample was male (67.1%), married (55.7%) and employed (60%) (Table I). About 4.3% of patients were diagnosed with major depression and 8.6% with anxiety disorders (generalized anxiety disorder and panic disorder). 84.2% reported at least one DCPR syndrome with demoralization (25.7%) and Type A behaviour (27.1%) as the most commonly reported. Patients diagnosed with DCRP somatic symptoms were more likely to also report depression ($\chi^2 = 16.74; p=0.012$) and anxiety ($\chi^2=6.79; p=0.05$). Actually, demoralized patients scored below the 25th percentile in the PWB scales of environmental mastery ($\chi^2 = 22.62; p<0.001$), positive relations with others ($\chi^2 = 4.39; p=0.049$) and self-acceptance ($\chi^2 = 6.37; p=0.002$). Similarly, Type A behaviour and irritable mood were associated respectively with low levels of environmental mastery ($\chi^2 = 4.52; p=0.042$) and purpose in life ($\chi^2 = 6.37; p=0.020$). As for personality traits, patients reporting demoralization presented higher persistence ($t=2.10; p=0.038$) and harm avoidance ($t=5.10; p<0.001$), and lower self-directness ($t=4.46; p<0.001$) than individuals without demoralization. In a similar manner, those who reported Type A behaviour scored higher in persistence ($t=2.75; p=0.008$) and lower in self-directness ($t=2.32; p=0.023$) than patients without Type A behaviour syndrome. A diagnosis of health anxiety was associated with higher levels of harm av-

oidance ($t=2.32; p=0.029$) and lower self-directness ($t=2.25; p=0.028$), while alexithymia was associated with low reward dependence ($t=2.36; p=0.021$) and self-transcendence ($t=2.75; p=0.008$).

Differences in illness severity

Of the patients 18.6% had a PASI score ≥ 10 ($n=13$). No differences emerged in sociodemographic variable between patients with a PASI score ≥ 10 and those with lower scores (Table I).

Concerning the psychiatric diagnoses, patients of different severity groups did not significantly differ in rates of anxiety and depressive disorders (Table II). As to the psychosomatic syndromes, patients with moderate to severe psoriasis were more likely to report Type A behaviour and demoralization than subjects with mild severity. Specifically, 53.8% ($n=7$) of the participants with a PASI score ≥ 10 , reported Type A behaviour and 61.5% ($n=8$) were diagnosed with demoralization, versus, 21.1% ($n=12$) and 17.5% ($n=10$) of patients with a PASI <10 . Both differences were statistically significant (Table II).

Significant differences also emerged in SQ ($F_{(59,4)} = 2.521; p=0.05$) and PWB ($F_{(57,6)} = 2.512; p=0.032$) scores. Precisely, individuals with moderate to severe psoriasis scored significantly lower in the PWB scales of Autonomy, Environmental mastery, Personal growth and Purpose in life than patients with mild psoriasis (Table II). Such patients also reported significantly higher levels of anxiety, depression and somatic symptoms than subjects with less illness severity (Table II). The PASI groups also differed in TCI scores ($F_{(56,7)} = 2.378; p=0.033$), with patients with greater severity of illness showed higher harm avoidance and lower self-directness compared to patients with mild psoriasis (Table II).

DISCUSSION

This study presents obvious limitations (absence of a control group, cross sectional design. However, this preliminary study is the first to evaluate dermatological patients by using instruments such as the Psychological Well-being Scales (12) and the Temperament and Character Inventory (13) according to a clinimetric approach.

Overall the findings are consistent with previously reported results showing the frequent occurrence of psychological distress in dermatological patients (6). Our results indicated that evaluating patients only according to the customary diagnostic criteria may not be enough to discriminate individuals suffering from psychological distress. Indeed, patients

Table I. Sociodemographic characteristics of the two PASI groups

	Total sample (n=70)	PASI <10 (n=57)	PASI ≥10 (n=13)	t	χ^2	p
Age, years, mean ± SD	47.87 ± 14.67	48.68 ± 14.15	44.31 ± 16.95	0.970		0.336
Sex: female, % (n)	32.9 (23)	35.1 (20)	23.1 (3)		0.692	0.523
Civil status: married	55.7 (39)	59.6 (34)	38.5 (5)		1.926	0.220
Working status, % (n)					3.614	0.159
Working	65.7 (46)	64.9 (37)	62.9 (9)			
Unemployed	5.7 (4)	3.5 (2)	15.4 (2)			
Retired	28.6 (20)	31.6 (18)	15.4 (2)			
Illness length, % (n)					3.302	0.230
≤ 1 year	8.6 (6)	10.5 (6)	–			
≤ 5 years	28.6 (20)	24.6 (14)	46.2 (6)			
>5 years	62.9 (44)	64.9 (37)	53.8 (7)			

Table II. Psychological assessment in the two PASI groups

	PASI < 10	PASI ≥ 10	χ^2/F	p
	(n=57)	(n=13)		
	% (n)	% (n)		
<i>Psychiatric assessment</i>				
Depression	3.7 (2)	7.7 (1)	0.452	0.465
Anxiety	7 (4)	15.4 (2)	0.946	0.308
<i>Clinimetric assessment</i>				
<i>Psychosomatic syndromes</i>				
Health anxiety	19.3 (11)	21.1 (3)	0.094	0.715
Nosophobia	3.5 (2)	–	0.470	>0.999
Thanatophobia	1.8 (1)	7.7 (1)	1.345	0.339
Illness denial	19.3 (11)	38.5 (5)	2.205	0.156
Somatic symptoms	5.3 (3)	15.4 (2)	1.635	0.230
Persistent somatization	8.8 (5)	–	1.228	0.576
Conversion	1.8 (1)	7.7 (1)	1.345	0.339
Anniversary reaction	7 (4)	23.1 (3)	3.033	0.113
Type A behavior	21.1 (12)	53.8 (7)	5.757	0.033
Irritable mood	17.5 (10)	–	2.661	0.190
Demoralization	17.5 (10)	61.5 (8)	10.726	0.003
Alexithymia	45.6 (26)	46.2 (6)	0.001	>0.999
	Mean ± SD	Mean ± SD		
<i>Psychological well-being</i>				
Autonomy	64.58 ± 2.53	54.20 ± 3.46	9.618	0.003
Environmental mastery	61.70 ± 2.62	50.92 ± 3.58	9.665	0.003
Personal growth	61.19 ± 2.32	53.33 ± 3.17	6.184	0.016
Positive relations with others	62.95 ± 2.39	57.11 ± 3.27	3.418	0.069
Purpose in life	58.72 ± 2.34	52.38 ± 3.20	4.195	0.045
Self-acceptance	57.14 ± 2.74	52.92 ± 3.74	1.358	0.248
<i>Psychological distress</i>				
Anxiety	6.73 ± 1.26	11.87 ± 1.72	9.580	0.003
Depression	5.76 ± 1.07	9.56 ± 1.47	7.211	0.009
Somatic symptoms	8.61 ± 1.32	12.41 ± 1.80	4.738	0.033
Hostility-irritability	6.37 ± 1.11	8.41 ± 1.52	1.924	0.170
<i>Personality traits</i>				
Novelty seeking	54.00 ± 1.73	54.06 ± 2.36	0.001	0.979
Harm avoidance	57.98 ± 2.92	65.83 ± 4.00	4.120	0.047
Reward dependence	64.27 ± 2.34	63.32 ± 3.20	0.093	0.762
Persistence	67.57 ± 3.24	66.53 ± 4.43	0.059	0.809
Self directness	70.11 ± 2.71	58.60 ± 3.70	10.317	0.002
Cooperativeness	73.42 ± 2.20	68.31 ± 3.01	3.087	0.084
Self transcendence	41.48 ± 2.83	48.17 ± 3.87	3.187	0.079

with severe psoriasis, while not differing in rates of psychiatric disorders from those with milder severity of disease, presented greater psychological impairment in terms of personal achievement and satisfaction (low autonomy, personal growth and purposes in life) and higher psychological distress. Furthermore, most of patients with severe psoriasis reported experiencing feelings of demoralization. The term demoralization refers to a condition characterized by feelings of helplessness due to the belief of having failed to meet one's expectations and goals. Demoralized individuals are thus unable to cope with pressing problems or stressful life situations which are then experienced as overwhelming (14). Demoralization, which was found to be distinct from depression, has been frequently reported in various medical settings (cardiology, endocrinology, oncology) in patients suffering from greater illness severity (15).

Consistently with what was found by Picardi et al. (6), patients with severe dermatological illnesses also repor-

ted high rates of Type A behaviour. Type A behaviour characterizes competitive individuals overcommitted to work or other activities, who tend to experience a steady and pervasive sense of urgency when subject to deadlines and to feeling under time pressure (16). Similarly to demoralization, Type A behaviour has been found to frequently occur in medical setting (17). The presence of such a high rate of Type A behaviour may be an attempt to overcompensate feelings of helplessness that are work-related. Indeed, especially in work settings, patients' inability to succeed in accomplishing their ambitions, may trigger a number of unadaptive behaviours aimed at regaining some control over their unsatisfying situation.

Findings on personality traits are also consistent with such psychological patterns. Similarly to Kilic et al. (18), patients with greater illness severity scored lower in the TCI dimension of self-directedness and higher in the TCI dimension of harm avoidance than participants with mild psoriasis. Individuals high in harm avoidance are described as cautious, doubtful, discouraged, insecure, passive, negativistic, or pessimistic even in situations that do not normally worry other people. These individuals tend to be inhibited and shy in most social situations (13). Furthermore, individuals who are low in self-directedness are described as blaming, ineffective, poorly integrated in social ties and unable to define, set, and pursue meaningful goals. They tend to experience minor, short term aims, none of which can be developed to the point of long-lasting personal significance and realization (13).

Such impaired psychological functioning may refer to the concept of cumulative life course impairment recently introduced in psoriasis patients by Kimball et al. (19). According to this model, psoriasis results in significant psychological burden that negatively influences several aspects of the patient's life (relationships, social activities, work and wellbeing). The concept of cumulative life course impairment entails the cumulative effect of stigma, medical and psychological comorbidities, along with the economic and social consequences that may ultimately result in a failure to achieve "full life potential" in some patients (19, 20). Chronic skin conditions have been reported to negatively influence job decisions, relationships, level of education, self-confidence and well-being (20). Thus, once a chronic medical condition develops, environmental, social and psychological factors influence illness progression as well as overall life conditions of the patients. Conversely, illness exerts its influence on all other factors, which are all mutually interacting (21). Thus, identifying patients at risk of developing a cumulative disease-related impairment may be a significant contribution to understand the real impact of psoriasis (3, 19). Such a multidimensional approach aims to provide a comprehensive model to explain the

“cumulative disease-related impairment” experienced by patients throughout their life (22). As pointed out by Picardi et al. (6), psychiatric diagnostic criteria alone may not provide a comprehensive description of psychological distress arising in patients with skin diseases. A clinimetric approach may help physicians in detecting clinically relevant information such as the presence of Type A behaviour, demoralization or allostatic overload (23) not otherwise assessed by the customary taxonomy (24). Indeed, the presence of such conditions may worsen the course of psoriasis leading to the accumulation of progressive physical and psychological impairment.

These results stressed the need of a more comprehensive assessment of the psychosocial features in chronic disease such as psoriasis. In clinical settings, the use of psychometric indexes and diagnostic criteria may provide only limited information on clinical phenomena. The clinimetric approach, being more sensitive in detecting clinically relevant information than diagnostic criteria, may thus respond to these emerging needs and may play an important role in supporting the caring process. Such a clinimetric approach may thus guide the clinical decision process by incrementally increasing the predictive power of the assessment procedure. The fulfillment of clinimetric criteria may detect conditions that may develop before an underlying psychiatric disorder becomes noticeable. Thus, clinimetric indexes more than diagnostic criteria, may help the physician to identify important information and clinically relevant differences which may be helpful in managing difficult doctor-patient relationships or partial response to treatment (25). Indeed, the ultimate goal of clinicians working with chronic illnesses should be to prevent or decrease the negative impact of excessive distress on patients' health.

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