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POSITION STATEMENT

Classification of psychodermatological disorders: Proposal of a new international classification

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Abstract

Introduction: Several classifications of psychodermatology disorders have been proposed, with most of them based on two to four main disorder category groups. However, there is, to date, no classification that has resulted from a consensus established by psychodermatology experts. The DSM-5-TR *(Diagnostic and statistical manual of mental disorders (5th ed.), Text Revision)* and the ICD-11 *(International classification of diseases (11th revision))* also do not provide a systematized approach of psychodermatology disorders. Taking into consideration that classifications are a key pillar for a comprehensive approach to the pathologies of each branch of medicine, the proposal of a classification in psychodermatology appeared as a central need for the recognition of psychodermatological disorders, in an attempt to improve their recognition and, in that sense, to find a common language for the development of this subspecialty that crosses dermatology and psychiatry.

Methods: Previously published classifications in psychodermatology were critically reviewed and discussed by expert opinion from an international multidisciplinary panel of 16 experts in psychodermatology and a new classification system is proposed, considering classical concepts in general dermatology and psychopathology.

Results: Two main categories of disorders are presented (a main group related to primary mental health disorders and another main group related to primary skin disorders), which are subsequently subdivided into subgroups considering pathophysiological and phenomenological similarities, including key aspects of dermatological examination, namely the presence of visible skin lesions (primary and secondary skin lesions) and psychopathological correlates.

Conclusion: This new classification aims to unify previous classifications, systematize the disorders that belong to psychodermatology and highlight their tenuous boundaries, to improve their management. It has been built and approved by the Psychodermatology Task Force of the European Academy of Dermatology and Venereology (EADV), the

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European Society for Dermatology and Psychiatry (ESDaP) and the Association for Psychoneurocutaneous Medicine of North America (APMNA).

INTRODUCTION

The classification of diseases and the use of universal terminology have a longstanding place in contemporary medicine for a comprehensive approach, clinical diagnosis, treatment and epidemiological studies. Two major internationally recognized classifications of diseases are available and have been updated more recently: the DSM-5-TR *(Diagnostic and statistical manual of mental disorders (5th ed.), Text Revision)* and the ICD-11 *(International classification of diseases (11th revision))*.[1,2]

In the field of psychodermatological disorders, many changes were proposed from the previous DSM and ICD classifications and there are some conflicting definitions between them. For example, in the spectrum of 'obsessive-compulsive and related disorders' (OCRDs), excessive showering is not included in the ICD-11, but it is included in DSM-5-TR as it was identified as one of the most prevalent repetitive behaviours. Olfactory reference disorder is a separate disorder in ICD-11 and only more recently added as an example of 'other specified obsessive-compulsive and related disorders' in DSM-5-TR. Additionally, in DSM-5-TR, factitious disorders are placed in the group 'somatic symptom and related disorders', a group which belongs to other disorders that are not self-inflicted, such as burning mouth syndrome and vulvodynia; in turn, in ICD-11, factitious disorders are recognized as a separate category in a more general group called 'mental, behavioural or neurodevelopmental disorders'.[1,2] All the above-mentioned examples show that DSM-5 and ICD-11 classifications are not convenient for dermatologists, psychiatrists or psychologists because different disorders are presented in the same group (e.g. factitious disorders and dysesthetic syndromes in the same group in DSM-5-TR) and interrelated psychodermatological disorders are presented in different sections or under different criteria (such as olfactory reference disorder), thus hampering their straightforward recognition. Several classifications of psychodermatological disorders were previously and separately proposed as well. However, the lack of a globally accepted classification in psychodermatology has caused confusion and some difficulties in the systematic approach to these patients. Thus, there is a dire need to define a practical and standardized classification, considering pathophysiological and phenomenological aspects shared by the disorders.[3]

Regarding terminology, a recent paper by some experts from the *Association for Psychoneurocutaneous Medicine of North America* (APMNA) intended to unify the language used in dermatology and psychiatry to make collaboration between the two medical specialties more accessible.[4] Indeed, a common diagnostic language would promote a better identification and assessment of the disorders, thus improving the understanding of phenomenology, pathophysiology and treatment to providers across specialties.

In this position paper, we critically review terminology and previous classifications used in psychodermatology and propose a new consensual international classification.

METHODS

In association with the *European Society for Dermatology and Psychiatry* (ESDaP) and the APMNA, the *European Academy of Dermatology and Venereology* (EADV) Psychodermatology Task Force appointed an organizing committee (AB, AR, BRF, FB, FP, LMi, UG, JS, LTA, DR and NV) in order to propose an international easy-to-use classification of psychodermatological disorders. Other experts were added to the organizing committee: RC, MJ, LMo, FT and MZ.

LMi provided a list of psychodermatological disorders from the literature, which was reviewed by all participants, to get a final list of disorders to be considered in the classification, and BRF referenced all published classifications of psychodermatological disorders (Table 1) and related terminology. The list of published classifications was obtained through a literature search performed electronically using Cochrane Library and PubMed/Medline considering the papers published in peer-reviewed journal articles, in English, French, German, Portuguese and Spanish, without time limit; the literature search was conducted in PubMed/Medline with the Medical Subject Headings (MeSH), using the key words "mental disorders," "psychopathology," "mental health," "skin diseases," "classification" and "terminology as topic"; the key words "psychodermatology," "psychocutaneous medicine," "psychodermatological disorders," "psychocutaneous disorders," "classification" and "terminology" were used in Cochrane Library. Classifications mentioned in international books in the field of psychodermatology and additional papers that were not retrieved by PubMed/Medline and Cochrane Library but considered relevant were also included. Thereafter, BRF presented and compared the DSM-5-TR and the ICD-11 classification systems and also presented specific classifications and diagnostic criteria already published for psychodermatological disorders. The need of a new and international classification in psychodermatology and the relevance of a common language, incorporating previous terminology already acknowledged by psychiatrists (DSM-5-TR), were highlighted and acknowledged by all the members.

Afterwards, BRF, LMo and NV have been appointed to propose a classification in the form of a table with a list of comments to explain their reasoning. In one of the first meetings, the number of categories to be considered was

TABLE 1 Previous general classifications of psychodermatological disorders.

Year	First author	Main categories	References
1983	Koblenzer	1. conditions strictly psychological in origin 2. conditions in which strong psychogenic factors are imputed 3. conditions whose course may be affected by emotional stress	5
1996	Gupta	1. cutaneous associations of psychiatric disorders 2. psychiatric associations of cutaneous disorders	6
2001	Koo	1. psychophysiologic disorders 2. primary psychiatric disorders 3. secondary psychiatric disorders	9
2003	Koo	1. classification by different categories of psychodermatological disorders 2. classification by the nature of the underlying psychopathology	7
2003	Misery	1. mental disorders secondary to skin disorders 2. mental disorders responsible for skin disorders 3. skin disorders influenced by mental disorders (e.g. atopic dermatitis) 4. mental and skin disorders without any relationship	12
2007	Poot	1. psychophysiological disorders 2. primary psychiatric disorders 3. secondary psychiatric disorders 4. comorbidity with psychiatric disorders	13
2008	Harth	1. dermatoses of primarily psychological/psychiatric genesis 2. dermatoses with a multifactorial basis, whose course is subject to emotional influences (psychosomatic diseases) 3. psychiatric disorders secondary to serious or disfiguring dermatoses (somatopsychic illnesses)	10
2013	Gieler	Self-inflicted skin lesions: 1. hidden or denied underlying behaviour 2. non-hidden or non-denied underlying behaviour	18
2014	Bewley	1. primary dermatological disorders caused by or associated with psychiatric comorbidity 2. primary psychiatric disorders which present with skin diseases or changes	8
2016	Jafferany	1. psychophysiological 2. psychiatric disorders with dermatological symptoms 3. dermatological disorders with psychiatric symptoms 4. miscellaneous	14
2016	Marshall	1. primary psychiatric condition which presents to dermatologists 2. primary dermatological disorder with secondary psychosocial comorbidities 3. patients who require psychosocial support with their skin disease 4. patients who have a skin condition secondary to their psychotropic medication	15
2017	Zhu	Obsessive-compulsive skin disorders: 1. delusional obsession, minimum insight 2. moderate obsession, fair insight 3. minimal obsession, good insight	19
2018	Reichenberg	1. primary dermatologic conditions causing secondary psychiatric conditions 2. primary dermatologic conditions exacerbated by stress or psychiatric conditions 3. primary psychiatric conditions that manifest as skin concerns	11
2020	Ferreira	1. psychophysiological dermatoses 2. primary psychopathology focused on the skin 3. cutaneous sensory disorders 4. dermatoses or disfiguring skin conditions leading to psychosocial comorbidity	16
2021	Ferreira	1. primary psychodermatological diseases 2. primary psychodermatological illness 3. secondary psychodermatological disorders 3.1. secondary dermatologic diseases related to psychiatric medications 3.2. secondary psychiatric illness related to dermatologic medications	3

discussed and the final decision was to consider two main groups, with the possibility of their division into different subgroups for similar disorders, considering phenomenological and/or pathophysiological similarities. Several virtual meetings were afterwards organized to discuss and improve that table. Finally, BRF, LMo and NV submitted a final version of the table to the members of the organizing committee, which was still presented and discussed at three virtual meetings and one both presential and virtual meeting in Milan, during the EADV congress, in 2022. The table was approved by the organizing committee (with one abstention) then by members of the EADV Psychodermatology

Task Force (with one 'no'), the members of the ESDaP executive committee (unanimity) and the APMNA members (with one abstention).

RESULTS

Previous general classifications of psychodermatological disorders

Previous classifications in psychodermatology mostly divided the disorders into two to four groups, as reported in Table 1. These classifications have been published between 1983 (Koblenzer)[5] and 2021 (Ferreira et al.).[3] The following authors suggested two groups of disorders: Gupta et al.[6] Koo et al.[7] and Bewley et al.[8] Koo et al.[9] also suggested that psychodermatological disorders could be divided into three groups, along with Koblenzer,[5] Harth et al.,[10] Reichenberg et al.[11] and Ferreira et al.[3] However, Koo et al.[7] also acknowledged that the disorders in psychodermatology could be organized into four main groups, which was also acknowledged by the following authors: Misery et al.,[12] Poot et al.,[13] Jafferany et al.,[14] Marshall et al.[15] and Ferreira et al.[16] Thus, most of the past classifications identified four main groups, where, commonly, the following categories are considered: psychophysiological skin disorders (those that are induced or worsened by psychological stress), primary psychiatric disorders (where a main mental health disorder is responsible for the skin symptoms), cutaneous sensory disorders (to include skin symptoms that occur in absence of a clear diagnosis of a primary skin disease) and skin disorders which are mostly associated with secondary psychiatric disorders like depression or anxiety disorders (to highlight the impact several skin disorders can have on mental health).

Previous specific classifications of psychodermatological disorders

Misery et al.[17] suggested that psychogenic pruritus should be considered a separate category within chronic pruritus, where globally psychopathology could also be present and modulate the experience of pruritus. The criteria for the diagnosis of psychogenic pruritus would include three compulsory criteria and 3 of 7 optional criteria (patients without a skin or systemic disorder which could explain the presence of chronic pruritus and, at the same time, who presented some characteristics that pointed out to a psychosocial dynamic or psychopathology as aetiological factors for the symptoms).[17]

Gieler et al.[18] proposed a classification for self-inflicted skin lesions, which was a first position paper from the ESDaP. This classification considered two groups of self-inflicted skin lesions: hidden or denied underlying behaviour (e.g. to include factitious disorders) and non-hidden and non-denied underlying behaviour (e.g. to include skin picking).[18]

Regarding the spectrum of OCRDs, Zhu et al.[19] highlighted the 'obsessive-compulsive insight continuum', to include the disorders where there is a minimal obsession with good insight (e.g. skin picking), moderate obsession with fair insight (e.g. body dysmorphic disorder) and delusional obsession with minimal insight (e.g. delusions of parasitosis and some cases of body dysmorphic disorder).[19]

Terminology

The importance of a common language was also reinforced by all the experts, who agreed that 'mental health disorders' would be the preferred term, in contrast to 'mind disorders'. An overview of previous publications about terminology to be used in psychodermatology was performed.

The general term 'disorder' is preferred as it points out to 'dysfunction', in contrast to other current terms, such as 'condition'.[3]

Mostaghimi et al.[4] reported a list of DSM-5 equivalents of terms used in dermatology, such as 'delusional disorder somatic type' for delusion of parasitosis, 'somatic symptom and related disorders' for vulvodynia and burning mouth syndrome. The terms 'factitious disorder' and 'excoriation (skin picking) disorder' are mentioned in DSM-5 and are also acknowledged as the correct terms.[4,20]

Regarding psychotic disorders in psychodermatology, Wilson et al.[21] had already highlighted that the term 'acarophobia' is a misnomer as these patients seldom attribute their disease to this limited group of parasites, they do not have a fear of these organisms but are firmly convinced that they are already infested with them.[21] Freudenmann et al.[22] suggested that the following terms should be avoided: Ekbom's syndrome ('Ekbom' is also used to refer to restless legs syndrome and because of the presence of only one or two defining symptoms and often well-circumscribed aetiological origins) and parasitophobia ('phobia' is an anxiety disorder). Delusions are part of thinking disorders (a false belief that is based on an incorrect interpretation of reality), while hallucinations involve sensory experiences in the absence of an external stimulus. Delusional infestation would be a preferred term, to include delusion of parasitosis/delusional parasitosis.[22]

The term 'hypochondriasis circumscripta' seems to be a construct only supported by some specialists and described in a few papers.[23] Core symptoms of hypochondriasis circumscripta show a huge overlap with different diagnoses of self-inflicted skin lesions and delusional disorders, such as Morgellons disease. Morgellons disease is a kind of delusional disorder, characterized by delusional infestation, along with delusional parasitosis.[24]

Gieler et al.[18] proposed that the following terms should be avoided: dermatitis artefacta, factitial dermatitis or dermatitis factitia (dermatitis suggests underlying inflammation)—factitious disorder should be the preferred term; dermatitis para-artefacta (dermatitis suggests inflammation) and neurotic or psychogenic excoriations (these terms may lead to

TABLE 2 The new international classification of psychodermatological disorders.

Psychodermatological disorders				
Primary mental health disorders affecting the skin		**Primary skin disorders linked with mental health**		
Visible skin lesions (Secondary skin lesions)	**No visible skin lesions**	**Visible skin lesions (Primary skin lesions ± secondary skin lesions)**		**± Visible skin lesions (Secondary skin lesions)**
Psychotic disorders		**Primary dermatoses**		**Functional skin disorders**
Delusional disorder somatic subtype (e.g. delusional infestation)	Delusional disorder somatic subtype (e.g. delusional infestation)	Dermatoses potentially worsened or triggered by stress and also associated with secondary psychiatric comorbidities – e.g. • Acne • Alopecia areata • Atopic dermatitis • Chronic spontaneous urticaria • Dermatomyositis • Hyperhidrosis • Infectious diseases: herpesviruses, warts • Lichen planus • Lupus erythematosus • Pemphigus vulgaris • Psoriasis • Rosacea • Scleroderma • Seborrheic dermatitis • Telogen effluvium • Vitiligo	Dermatoses not worsened or triggered by stress that can cause secondary psychiatric comorbidities – e.g. • Androgenetic alopecia • Autoimmune bullous dermatoses • Cicatricial alopecias • Genodermatoses • Hidradenitis suppurativa • Lichen sclerosus • Stevens–Johnson syndrome • Toxic epidermal necrolysis	With visible skin lesions • Lichen simplex • Prurigo nodularis • Chronic pruritus of unknown origin • Chronic pruritus in systemic disorders	No visible skin lesions • Burning mouth syndrome • Vulvodynia • Peno-scrotodynia • Chronic pruritus of unknown origin • Chronic pruritus in systemic disorders • Cutaneous dysesthesia
Somatic symptom and related disorders	• Burning mouth syndrome • Vulvodynia • Peno-scrotodynia • Psychogenic pruritus • Illness anxiety disorder			
Obsessive-compulsive and related disorders • Body dysmorphic disorder • Tanorexia • Body-focused repetitive behaviours (Self-inflicted skin lesions): ➔ *Non-denied/non-hidden behaviour*: • Cheek-biting • Dermatodaxia, Dermatophagia, Dermatothlasia • Onychodaknomania, Onychophagia, Onychoteiromania, • Onychotemnomania, Onychotillomania • Perionychophagia, Perionychotillomania • Pseudo-knuckle pads • Rhinotillexomania • Self-inflicted cheilitis • Skin picking disorder • Trichoteiromania, Trichotemnomania, Trichotillomania ± trichophagia	• Body dysmorphic disorder • Olfactory reference disorder			
Non-substance-related addictive disorders • Tanorexia • Body-focused repetitive behaviours (Self-inflicted skin lesions)				
Nonsuicidal self-inflicted disorders Self-inflicted skin lesions: ➔ *Non-denied/non-hidden behaviour*: • Impulsive behaviour: e.g. burning, cutting • The desire to obtain a physical impairment: Body identity integrity disorder ➔ *Denied or hidden behaviour*: • The sick role with no immediate tangible benefits: Factitious disorders (e.g. Munchausen syndrome, Munchausen syndrome by proxy) • Motivated by external incentives: Malingering				

the stigmatization of patients as neurotic)—skin picking should be the preferred term.[18]

Body-focused repetitive behaviours (BFRBs) is a group of disorders that must interfere with daily functioning characterized by (a) feelings of tension, anxiety or boredom before committing the behaviour, (b) gratification or relief while engaging in the behaviour, and (c) ensuing feeling of remorse or guilt. They are repetitive self-grooming behaviours, which cause visible damage to the body. Aetiology of BFRBs is unclear. However, research suggests that reduced impulse control and difficulty in emotion regulation is involved. Given the compulsory characteristics of BRFBs, they are classified as OCRDs in the DSM-5 and ICD-11. However, that is still a topic of discussion as BFRBs and compulsions serve different functions. BFRBs must not be behaviours in response to obsessions. They are bodily focused, to reduce tension or may occur as an habit to reinforce positively, at least in the short term. Another misconception is that BFRBs are self-mutilation behaviours. Patients' initial intentions are not self-harm but instead a way to improve the appearance. The most common BFRBs are hair pulling (trichotillomania) and skin picking (excoriation disorder). Other BFRBs include lip biting/picking, cheek biting/chewing and nail biting/picking. Self-inflicted skin, hair and nail lesions are then the most common lesions associated with BFRBs.[25]

The clinical characteristics of several BFRBs have been described, as listed below[18,25–30]:

- Dermatillomania or skin picking disorder (excoriation disorder);
- Trichotillomania (pulling out the hair, potentially resulting in marked hair loss);
- Trichoteiromania (physical damage to the hair by rubbing and scratching the scalp);
- Trichotemnomania (compulsive hair cutting);
- Trichophagia (rare disorder connected with trichotillomania, characterized by compulsive eating of pulled hairs, with risk of trichobezoars);
- Onychophagia (nail biting);
- Onychotemnomania (cutting nails too short leading to traumatization of the nail body/nail fold);
- Onychotillomania (trauma of the paronychium or continuous manipulation, picking and/or removal of the cuticle/nail);
- Onychoteiromania (the patient rubs the fingernails);
- Onychodaknomania (the patient bites on single nails to get a lustful pain);
- Perionychotillomania (the habit of picking and tearing of the periungual skin);
- Perionychophagia (the patient bites one's own periungual skin; pieces of skin can be ingested);
- Rhinotillexomania (nose picking),
- « Washboard nails » (median nail dystrophy resulting from an habit-tic deformity, where patients present with a central linear depression surrounded by parallel transverse ridges running from the proximal to the distal end; the nail resembles a washboard; lunulae may become hypertrophic and the proximal matrix may lie exposed);
- Bidet nails (triangular worn-down nails of the second–fifth fingers of the dominant hand due to repeated trauma caused by obsessional cleanliness);
- Pseudo-knuckle pads (rubbing, chewing, sucking the finger joints);
- Self-inflicted cheilitis (compulsive licking);
- Cheek-biting and Morsicatio buccarum (cheek-biting is related to the simple act of biting one's own buccal mucosa, while a particularly vigorous form of cheek-biting in which pieces are torn from the mucosa is 'morsicatio buccarum');
- Dermatophagia, Dermatodaxia and Dermatothlasia ('dermatodaxia' for the compulsion to bite one's own skin without consumption of the skin and dermatophagia when pieces of skin are actually ingested; 'dermatothlasia' is characterized by the compulsion to rub or pinch one's own skin to form bruised areas).

New classification

Table 2 shows the new international classification which was approved by EADV Psychodermatology Task Force, ESDaP and APMNA. The term 'disorder' was then the preferred term for both mental health or dermatology diagnoses. Two main groups were recognized considering pathophysiological and phenomenological similarities. In both groups, patients may present secondary psychiatric disorders both resulting from the psychosocial impact of having a skin disease or a psychiatric disorder. These secondary psychiatric comorbidities are not highlighted in the table as they cut across the disorders listed in both main groups and often include depression, anxiety and sleep disorders.[31]

The first main group is called 'primary mental health disorders affecting the skin' and it should include the psychodermatological disorders which present a psychiatric disorder and/or psychosocial features as a major aetiology, with secondary skin symptoms and/or secondary skin lesions. The main spectrum of psychiatric disorders behind each diagnosis is mentioned in the table (e.g. 'psychotic disorders'), although other psychiatric disorders may also be involved (e.g. anxiety disorders can also coexist with psychotic and obsessive-compulsive disorders and contribute to worsen the symptoms). The second main group is called 'primary skin disorders linked with mental health' to include primary skin disorders with multifactorial aetiology involving psychological stress and/or psychiatric comorbidities.

Each main group is subdivided into two subgroups considering the presence or absence of visible skin lesions based on what is typically observed in each disorder even though it was acknowledged that these features are not rigid and should be used as general guidelines for the diagnosis. Visible skin lesions could be then divided into primary and

secondary skin lesions, according to current classification in dermatology.[32]

Primary skin lesions are visible skin lesions that arise de novo, characterize a primary skin disease and are present at its onset (such as erythematous plaques in psoriasis and vesicles in herpes zoster).[32] They are not observed in primary mental health disorders affecting the skin.

In turn, secondary skin lesions are visible skin lesions that occur over time through disease progression, such as scales (e.g. in psoriasis), and lesions that do not characterize a primary skin disease but that result from changes caused by pathological behaviour and/or traumatic skin manipulation (e.g. excoriations in primary dermatoses such as atopic dermatitis, but also in other skin disorders, like chronic pruritus and prurigo nodularis, and primary mental health disorders, such as delusional infestation; another example is localized acquired hypertrichosis due to repeated trauma/friction to the skin).[32,33]

Thus, in contrast to primary lesions, secondary skin lesions could be observed both in primary mental health disorders affecting the skin and primary skin disorders linked with mental health. In primary mental health disorders affecting the skin, secondary skin lesions result from changes caused by traumatic skin manipulation, commonly excoriations, erosions, crusts, ulcers, scars and lichenification (e.g. frequently in the setting of self-inflicted skin lesions and delusional infestation).

Primary mental health disorders affecting the skin

Five subgroups were considered: psychotic disorders; OCRDs; non-substance-related addictive disorders; non-suicidal self-inflicted disorders (NSSIDs); somatic symptom and related disorders.

In 'psychotic disorders', the classic example is delusional disorder somatic subtype, which usually presents as a delusional infestation.[4,22,24] Excoriations, erosions and ulcers can be observed, but some patients may not present self-inflicted skin lesions, so this disorder was placed in both subgroups of primary mental health disorders affecting the skin (with visible skin lesions and no visible skin lesions).

In OCRDs, some disorders can present with visible skin lesions, such as BFRBs (with self-inflicted skin lesions), body dysmorphic disorder (BDD) and tanorexia. In tanorexia, hyperpigmentation results from a pathological behaviour related to tanning. In body dysmorphic disorder, skin picking is diagnosed as a compulsion (and main symptom), belonging to the diagnostic criteria of BDD in DSM-5-TR: 'B. At some point during the course of the disorder, the individual has performed repetitive behaviors (e.g. mirror checking, excessive grooming, skin picking, reassurance seeking) or mental acts (e.g. comparing his or her appearance with that of others) in response to the appearance concerns'.[1,25,34] Other OCRDs, such as olfactory reference disorder, and also some patients with BDD do not present with visible (secondary) skin lesions; thus, these disorders are examples of the second column (no visible skin lesions).

Tanorexia and self-inflicted skin lesions were also identified as part of the group of 'non-substance-related addictive disorders' as patients may present with characteristics of behavioural addictions.[34,35]

BFRBs were acknowledged as part of OCRDs, when self-inflicted lesions due to 'non-denied/non-hidden behaviour' are present.[18,20] Some of these disorders may also be placed in the group 'non-substance-related addictive disorders'. All these disorders can present with secondary lesions (e.g. lichenification in trichoteiromania; broken hairs at different levels, trichoptilosis and haemorrhagic crusts in trichotillomania).[36]

Self-inflicted skin lesions can also be part of NSSIDs. The core symptom of NSSID is intentional self-inflicted damage occurring on 5 or more days over the past year expected to relieve from negative feelings/thoughts, resolve interpersonal problems or create a positive mood.[37]

Self-inflicted skin lesions in NSSIDs were divided into two subgroups: 'non-denied/non-hidden behaviour'; 'denied or hidden behavior'. The first would include the following subgroups: patients with impulsive behavior (e.g. burning, cutting); patients who present with the desire to obtain a physical impairment (body identity integrity disorder). The second would include the following subgroups: patients who present with the sick role with no immediate tangible benefits, where the diagnosis should be 'factitious disorders'; patients who show a motivation by external incentives, where the diagnosis should be 'malingering'. Munchausen syndrome and Munchausen syndrome by proxy were highlighted as examples of factitious disorders.[18] Excoriations, erosions, ulcers, scars, hair and nail changes (e.g. onycholysis semilunaris[27]) due to traumatic manipulation could be observed in those disorders.

Still in 'primary mental health disorders affecting the skin', the group 'somatic symptom and related disorders' was included for the following disorders: dysesthetic syndromes (burning mouth syndrome, vulvodynia, penoscrotodynia), psychogenic pruritus and illness anxiety disorder.[1,16,17] The first three examples could also be examples of 'primary skin disorders linked with mental health' if somatic aetiologies could be found. In the absence of somatic aetiologies, they should be mentioned as 'somatic symptom disorders'; thus, the latter terminology could be preferred when significant psychological stress would be observed, with no obvious dermatological/somatic aetiologies.

Primary skin disorders linked with mental health

This main group includes the disorders whose pathophysiology was related to a primary skin dysfunction, involving psychological stress in its pathophysiology and/or secondary psychiatric comorbidities. It was divided into two subgroups: primary dermatoses and functional skin disorders.

'Primary dermatoses' was the term attributed to primary skin diseases; thus, visible primary skin lesions would always be observed and secondary lesions could be present, depending on particular characteristics of the dermatosis and its evolution. In primary dermatoses, secondary lesions could be the result of traumatic manipulation (e.g. excoriations due to pruritus), but also lesions that could occur over time through disease evolution, as outlined above. The primary dermatoses were divided into two subgroups: dermatoses potentially worsened or triggered by stress and also associated with secondary psychiatric comorbidities (e.g. alopecia areata and atopic dermatitis); and dermatoses usually not worsened or triggered by stress that can cause secondary psychiatric comorbidities (e.g. lichen sclerosus). A list of all the disorders that could be placed in each subgroup considering the available scientific evidence of a possible pathophysiological link with stress was provided (Table 2).

'Functional skin disorders' was the term attributed to the disorders where a dysfunction of itch and/or pain processing could be present as the main pathophysiological mechanism. When visible skin lesions would be present, there would be secondary lesions (e.g. excoriations and lichenification). Lichen simplex, prurigo nodularis, chronic idiopathic pruritus and chronic pruritus in systemic disorders (e.g. in end-stage renal disease and diabetes mellitus) would be examples of functional skin disorders with secondary skin lesions. Burning mouth syndrome, vulvodynia and penoscrotodynia would be examples of functional skin disorders without secondary lesions, along with some cases of chronic pruritus (both idiopathic and in systemic disorders) and other skin sensory disorders (e.g. sensitive skin syndrome and other skin pain syndromes).[2,38,39]

DISCUSSION

The present classification should be considered a guideline for the diagnosis and clinical approach of psychodermatological disorders. Some overlap between the disorders may be observed. For example, even though most patients with psychogenic pruritus do not present secondary skin lesions, such lesions can be observed in some patients (commonly, excoriations), but in order to facilitate the recognition of the disorders, and also to organize them considering pathophysiological and phenomenological similarities, this diagnosis was placed together with other examples of somatic symptom and related disorders, where typically secondary skin lesions are not observed. Moreover, the presence of secondary skin lesions is not part of the criteria to diagnose psychogenic pruritus,[17] in contrast to BDD, where secondary skin picking belongs to the possible criteria for the diagnosis; thus, BDD was placed both under the subgroups visible and no visible skin lesions.[1,20] Moreover, some patients with BDD could also present with psychotic symptoms, namely delusional beliefs, but available evidence suggests that delusional and nondelusional variants have far more similarities than differences.[40] As the main mechanism behind the disorder is obsessive-compulsive, it was classified under the subgroup OCRDs.[1,20]

Regarding the subgroup 'psychotic disorders', it was reinforced that the term 'delusional parasitosis' should be considered a subtype of delusional disorder somatic subtype (if the delusion concerns a parasite) and 'Morgellons disease' another subtype (when the delusion concerns inorganic material/fibres), without difference concerning the treatment (antipsychotics) and that is the reason why 'delusional infestation' or 'delusional disorder somatic subtype' should be the preferred terms.[4,41]

As mentioned above, the term 'hypochondriasis circumscripta'[23] should be avoided, considering the overlap with some diagnoses of self-inflicted skin lesions and also with delusional disorder somatic subtype. Thus, the symptoms described for that diagnosis could be part of (I) a delusional disorder somatic subtype with visible skin lesions when there is a focus on overvalued ideas regarding the aetiology of the pain or tactile sensations (such as 'ducts' and 'particles'); or (II) it could be included under 'nonsuicidal self-inflicted disorders', when there is a focus on specific self-inflicted skin lesions without delusions/body fantasies/ overvalued ideas.

The main primary mental health disorder affecting the skin linked with self-inflicted skin lesions with non-denied/non-hidden behaviour, such as trichotillomania, could belong to OCRDs, dissociative, impulsive and/or addictive behaviours. However, the main mechanism for the majority of the patients should be obsessive-compulsive, as explained for BDD; thus, those disorders were placed under OCRDs.[1,20] However, addictive (and related impulsive) behaviour was acknowledged as an emerging and important aspect which justified the identification of a new subgroup 'non-substance-related addictive disorders', also included in DSM-5-TR.[1] Indeed, self-inflicted skin lesions, such as skin picking disorder and trichotillomania, along with tanorexia, also exhibit characteristics of an addictive behaviour and could then present a mixed compulsive-impulsive nature. Tanorexia was highlighted as a persistent and problematic tanning behaviour with some similarities to gambling behaviour.[34,35,42] Tanorexia was also included in the subgroup OCRDs as the compulsive aspect to acquire and maintain a suntan seemed to be a main feature behind this behaviour too.[34,42] Further research related to non-substance-related addictive disorders in psychodermatology is required to confirm and strengthen these clinical findings.

Still regarding self-inflicted skin lesions, in the subgroup NSSIDs, it should be important to highlight that the term 'Munchausen syndrome' should be used an example of factitious disorder, with particular diagnostic criteria (hospital shopping, delegate self-harm and pseudologia phantastica). When the skin lesions imitate a defined skin disease, then the term 'pathomimicry' could be used.[18] The subject may be aware that he or she is driven to create the lesions. For some patients, the behaviour may happen outside the patient's awareness (dissociative disorder). Regardless of that aspect, the motivation is not conscient in factitious disorders, in contrast to malingering. Both factitious disorders

and malingering happen to cope with a difficult psychosocial background. In malingering, the motivation is known (a social or financial advantage), while in factitious disorders there are no immediate tangible benefits and the behaviour may be a way of 'crying for help' through the 'sick role'.[16,18,43]

'Body identity integrity disorder'[44] was recognized as an important diagnosis to be mentioned in the subgroup NSSIDs, along with factitious disorders, although a rare diagnosis and a controversial topic that was not included in DSM-5-TR.[1] It was included under non-denied/non-hidden behaviour as it seems that the behaviour is mostly non-denied. However, due to some embarrassment/shame or even social and financial reasons, some patients may deny the behaviour to some people. That would be a main difference in relation to a factitious disorder, where the behaviour is always denied regardless of the people (thus, including family and friends). Furthermore, even if both have a denied behaviour, the motivation is clearly different from a factitious disorder, as a patient with body identity integrity disorder has the clear feeling that, for instance, his leg is not truly belonging to the body and the desire for an amputation and other self-inflicted lesions is clear, while in factitious disorders there is a 'sick role with no immediate tangible benefits'.[16,18,43,44]

Research has demonstrated that NSSIDs are associated with several internalizing, externalizing and personality disorders, and even can occur in the absence of any psychiatric disorder.[37] Differences between BFRBs or OCRDs and NSSI include those who engage in BFRBs often report a low level of awareness while engaging in the behaviour, which may not be common in NSSI. Furthermore, BFRBs or OCRDs may be more related to mundanely experienced negative emotions whereas NSSI are related to more intense and acutely distressing emotions. Finally, NSSI typically peak in adolescence and declines by early adulthood, while BFRBs or OCRDs tend to be chronic habits that persist for decades. However, there is a paucity of empirical data that directly compares NSSI to BFRBs or OCRDs. Therefore, more research is needed.[45]

In the main group 'primary skin disorders linked with mental health', the pathophysiological link with psychological stress was documented in the following disorders: some autoimmune bullous dermatoses (pemphigus vulgaris),[46] acne,[47] alopecia areata,[48] atopic dermatitis,[49] chronic spontaneous urticaria,[50] dermatomyositis,[51] hyperhidrosis,[52] infectious diseases (herpesviruses and warts),[53,54] lichen planus,[55] lupus erythematosus,[56] psoriasis,[57] rosacea,[58] systemic sclerosis,[59] seborrheic dermatitis,[60] telogen effluvium[61] and vitiligo.[62] These primary dermatoses are also associated with secondary psychiatric comorbidities which is a relevant aspect in other primary dermatoses that do not seem to present a pathophysiological link with stress, such as some examples of autoimmune bullous dermatoses (dermatitis herpetiformis, IgA bullous dermatosis), androgenetic alopecia, hidradenitis suppurativa, lichen sclerosus, toxic epidermal necrolysis, Stevens–Johnson syndrome, genodermatoses and cicatricial alopecias, particularly, primary neutrophilic cicatricial alopecias, such as folliculitis decalvans and dissecting cellulitis of the scalp.[63–66] In lymphocytic primary cicatricial alopecias, including chronic cutaneous lupus erythematosus, lichen planopilaris and frontal fibrosing alopecia, a pathophysiological link with stress could be possible, but studies are required on these dermatoses.[67,68]

In the subgroup 'functional skin disorders', psychological stress can also contribute to the pathophysiology of the disorders, within a multifactorial etiopathogenesis. Additionally, patients with chronic pruritus may present with important psychological characteristics and psychiatric comorbid disorders (namely anxiety and depression) that modulate the experience of pruritus, with relevance in the management.[69] Some of these functional skin disorders can coexist with primary dermatoses, such as atopic dermatitis and lichen simplex or prurigo nodularis.[70] Furthermore, patients with functional skin disorders may have relevant subclinical skin changes in the absence of visible skin lesions. For instance, patients with sensitive skin syndrome and prurigo nodularis may present with a small fibre neuropathy.[71] While patients with chronic pruritus can present with visible skin lesions characterized by excoriations and lichenification, the visible skin lesions in prurigo nodularis have particular clinical features that were described more recently, where the most common are excoriated hyperkeratotic nodules.[72] Globally, prurigo nodularis can occur as a consequence of primary skin diseases (such as atopic dermatitis), systemic disorders associated with pruritus but also as a result of a psychiatric disorder (namely anxiety, depression and dissociative experiences).[73] However, regardless the cause, prurigo nodularis will evolve 'by itself', through an itch-scratch cycle. Thus, it shares a dysfunction in itch processing, along with other functional skin disorders. An overlap of the different known itch types could also be possible for some patients (pruriceptive, neuropathic and pruriplastic itch). Neuropathic mechanisms may also be involved in some disorders belonging to this subgroup (e.g. vulvodynia, some patients with chronic pruritus related to systemic disorders). While some of the patients in this group would only present with itch, most of them can present with dysesthetic syndromes, where different unpleasant and abnormal sensations could be observed, including itch and pain. Thus, both central sensitization of itch and pain could be involved in most of the disorders included in this subgroup, then involving the related concepts of 'pruriplastic itch' and 'nociplastic pain'.[74]

With this proposal of international classification, the authors intended to systematize the psychodermatological disorders, through a straightforward and practical classification, considering basic principles of dermatological examination and psychopathology applied to dermatology, with a common language for dermatologists and psychiatrists. The purpose with this international classification system was to broaden the recognition of psychodermatological disorders, to improve the clinical approach of patients suffering from these disorders and provide useful guidelines for the diagnosis and management.

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

ETHICS STATEMENT

Not applicable.

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