

# Psychodermatology: A Collaborative Subject of Psychiatry and Dermatology

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## SUMMARY

Dermatology has a special importance in consultation-liaison practice. The brain and the skin originate from the same germ layer, the embryonic ectoderm. The various influences of these 2 organs on each other in later periods of life have been the topic of numerous published studies. These studies are divided into 3 groups: 1. studies about stress and dermatologic diseases; 2. psychoanalytic and psychodynamic approaches to psychodermatological diseases; 3. clinical research and treatment of psychodermatological diseases. Recently, in some countries in which clinicians are aware of the importance of the subject, in psychodermatology departments, psychiatrists, dermatologists, psychologists, and residents work together as a team. In fact, it has been already accepted that it is necessary to link psychiatry and dermatology in many cases. This association between the 2 disciplines aims to enhance the success of therapy and psychiatric support for patients who primarily have a psychiatric disease, but present as if they have a dermatological disease. On the other hand, it provides a more holistic and satisfying approach for both doctors and patients when the patient's primary problem is a dermatological disease and a secondary psychiatric problem develops. Herein is a review of psychodermatology research and the relationship of dermatological and psychological diseases. Within this context, the overlapping areas of psychiatry and dermatology have been investigated, with the aim of attracting attention to this topic. We searched PubMed for psychodermatology papers and our keywords were psychodermatology, psychiatry-dermatology, and psychology-dermatology.

**Key Words:** Psychodermatology, psychocutaneous medicine, psychiatry-dermatology, psychology-dermatology, psychosomatic medicine

## INTRODUCTION

As an easily noticed and touched organ, the skin has a special place in psychiatry. With its responsiveness to emotional stimuli and ability to express emotions such as anger, fear, shame, and frustration, and by providing self-image and self-esteem, the skin plays an important role in the socialization process, which continues from childhood to adulthood (Domonkos, 1971; Koblenzer, 1983).

Ingram states that the skin is an extension of the mind and, therefore, is an essential part of character and personality assessment (1933). The relationship between skin and the brain begins in the embryonic period; skin and the brain stem to the ectoderm and are affected by the same hormones and neurotransmitters (Koblenzer, 1983).

Psychodermatology is a collaborative field of activity that is based on the relationship and interaction between psychiatry and dermatology, and in practice this collaboration may have different applications:

- Diseases that are based on a psychiatric disorder (artifact dermatitis).
- Psychiatric disorders that appear as a dermatological disease, but in reality are actually dermatological diseases (delusional parasitosis, body dysmorphic disorder).
- Dermatological diseases formed or advanced by psychosomatic factors (psoriasis, neurodermatitis, hyperhidrosis, etc.).
- Psychiatric disorders secondary to social iso-

lation or stigmatization (depression comorbid with diseases such as vitiligo and psoriasis).

- Dermatological and psychiatric disorders related to genetic or environmental influences (for example, mania and psoriasis).

- Dermatological diseases that appear in chronic psychiatric patients (skin infections due to negligence of hygiene in schizophrenics).

- Psychiatric disorders that appear in response to the treatment of dermatological diseases such as steroids and roacutane.

- Dermatological diseases that appear in response to medicines that are used for psychiatric treatment (largactil and lithium, etc.) (Bhatia et al., 1996).

Various studies had been conducted and are ongoing in order to establish the cause and affect relationship and to find the etiologies of all the above-mentioned psychodermatological issues. These studies can be grouped, primarily, according to 3 categories:

I. The role of stress in the appearance and exacerbation of dermatological diseases.

II. Dynamic and analytical studies related to dermatology and dermatological diseases.

III. Clinical and drug studies related to psychosomatic dermatological diseases.

### **I. Stress Research**

Stress and other psychological factors trigger the formation and exacerbation of many dermatological diseases (Van Moffaert, 1992; Koo and Pham, 1992). Every person has a shock organ that is sensitive to stress, which is defined by environmental and genetic factors, and this shock organ is the skin in people who display dermatological symptoms under stress. Panconesi suggested naming dermatological diseases that are activated and whose symptoms are exacerbated by emotional stressors as “dermatological stress disorders” (2000). There is much research on the role of stress in dermatological diseases, and they are categorized as:

I. Environmental factors that cause stress;

II. Subjective experiences towards specific situations;

III. Biological responses to stress (Cohen, 1995).

The idea that specific psychosomatic illnesses appear with specific conditions that cause stress is no longer valid today. Research has shown that the subjective experience of stress is more important than the actual stress and the conditions that cause stress. Alexander et al. (1968) reported that psychosomatic symptoms appear in the organs that innervate with the autonomic nervous system, that are formed as the result of lengthened physiological changes induced by unconscious repressed conflicts, and that specific unconscious conflicts result in specific psychosomatic illnesses. Currently, there exist some research findings supporting this idea.

Stress is the first reason that comes to mind, excluding *hemophilus pylori* and anti inflammatory medicine, in the formation of gastrointestinal ulcers and various studies have shown that gastrointestinal ulcers and hemorrhages occur more frequently in situations that cause social stress, such as earthquakes and economic crises.

This can be explained by the decrease in regional blood flow and increase in gastric acid secretion following stress (Levenstein, 1999). In the same way, in a controlled study with 1500 people following the great earthquake in Japan Kodama found that atopic eczema had increased when compared with normal controls (1999). As the rate of exacerbation of this illness in A and B regions that were exposed to the earthquake was 38% and 34%, respectively, this rate was 7% in the non-exposed region. While the stress rates in the exposed regions after the earthquake were 63% and 48%, respectively for A and B regions, this rate was 19% in the non-affected region.

Biological responses to stress vary from person to person; vasoactive peptides, lymphokines, and chemical mediators are secreted after stress and inflammation develops as a result of their influence on the immune system. Experimental studies showed that the endocrine, immune, and nervous systems do not work autonomously and that there is a complex interaction between them (Ader, 1995). According to the 3-stepped stress model developed by Selye, psychosomatic dermatological diseases appear particularly during the adjustment process (1949).

It is known that stress is not only a factor that causes illness, but also in the exacerbation of symptoms of many chronic dermatological diseases, such as atopic eczema, psoriasis, and acne

vulgaris (Katsorou-Katsari, 1999; Weigl, 2000). Katsorou-Katsari found that in patients with alopecia areata, among the 3 types of corticotropin hormone-releasing receptors in hair follicles, the 2 $\beta$  subtype was more common and that emotional stress exacerbates alopecia areata (2001).

## **II. Dynamic and analytical interpretations in dermatological diseases**

Analysts such as Fenichel, Winnicott, and Anzieu pointed out the interaction between the skin and the unconscious, and tried to explain the interaction between some dermatological diseases and unconscious conflicts analytically. According to Fenichel, the skin, which marks the border between the organism and external world as the outer layer of the organism, has 4 important characteristics (1974): I. In addition to being the outer layer, the skin protects against internal and external stimuli. There are also vasomotor changes, such as unconscious impulses forming stiffness in muscles, which results in dermatitis; II. Skin is an important erogenous zone and sense of touch, heat, and pain, and is a source of pleasure. Generally, sadomasochistic tendencies form the unconscious basis of dermatitis. Winnicott explained the psychodynamic formation of papular urticaria as follows: the formation of papules which can be stimulated by psychological causes, as well as physical stimuli such as hot and cold carries a meaning equal to erection. Stimulation based on unconscious fantasies and conflicts developed as a result, causes papule formation on the skin, and scratching and plucking behavior corresponds to manual genital masturbation, and relief is formed by way of the pleasure (1934); III. The skin is visible from outside and, as such, is included in exhibitionism conflicts. This is related to narcissistic needs that are important in the development of a sense of safety. Therefore, conflicts observed in beauty-ugliness phobias, exhibitionism, and social phobia are also evident in dermatitis; IV. Anxiety symptoms can also be localized as skin symptoms. Sympathomimetic stimulation occurs in the skin with anxiety and some symptoms appear. According to Anzieu, the mother-infant relationship formed by touching includes the first forms of sensations that other sensory organs perceive and encode. It is a way for the adults near the baby of showing that they understand the baby's wishes, needs, and anxieties. This two-way communication network activates the energies in the body of the baby, results

in the creation of common meanings, and forms the "skin ego", which is the first version of the ego (Anzieu, 1990).

Repressed sexuality can be considered in special diseases of the skin such as chronic scratching. Again, scratching is observable in male homosexuality in the anus and perineal area, and in the vulva in sexually inhibited women (Drueck, 1943; Saul, 1938). Similarly, Winnicott suggested that one of the causes of urticaria could be a powerful desire that could not find another form of satisfaction. (1934).

In his article, Pines (1980) considered the transference and counter transference dynamics of a patient with eczema in terms of the early mother-infant relationship, and summarized the subject as follows: eczema appearing in the first years of life is a result of a faulty mother-infant relationship and relationship problems recurring in later life causes this illness to exacerbate repeatedly. The appearance of anxiety related to the deformation or disappearance of the self and the need to be held and preserved, as a whole, effects character formation. Babies, making their psychic pain visible in order to have their needs, communicate these needs with the body and obtain care by this way. In the analyses of these patients, it is seen that their narcissistic needs are not met and they are excessively sensitive in object relations. The disappointment of the mother with the look of the baby results in deformations in the self-image of the baby and problems arise in the true self. (1980).

The psychodynamic approach is important in the psychiatric treatment of dermatological diseases, and in some cases it is essential to supplement the pharmacological treatment approach.

## **III. Psychosomatic dermatological diseases**

Koblentz is one of the most active writers on these diseases who is both a dermatologist and a psychoanalyst, divides these illnesses in three groups: purely dermatological, purely psychiatric, or a combination of both to clinical practice. This classifications made by the writer, who, are accepted by many writers with minor changes later. In this most frequently used classification system, diseases are divided into 3 groups (1987):

### **1. Primary psychiatric disorders**

Artifact dermatitis, delusional parasitosis, neurotic skin picking, trichotillomania, and hypo-

chondriacal preoccupations related with the skin are placed under this category. In this group, the underlying cause of symptoms is psychiatric and patients harm their skin due to unconscious defenses. When these patients present to a dermatologist, they deny their psychopathologies and want to be treated by the dermatologist. Directly destroying the defenses of these patients and referring them to psychiatry is harmful because of the possibility of suicidal intentions or the appearance of severe psychiatric conditions. Brief and frequent dermatology consultations let the patient develop a good relationship, making the passage to psychiatry easier.

**Below are some of the diseases in this group:**

**Delusional Parasitosis (DP):** Although these cases are defined as monosymptomatic hypochondriac psychosis in ICD-10, some cases may not meet all of the diagnostic criteria (Trabert, 1995). Etiologically, DP is divided into 3 groups: when there is no underlying psychiatric or organic cause, it is primary psychotic delusional parasitosis or monosymptomatic hypochondriac psychosis; when developed on the basis of a psychiatric disorder such as schizophrenia or depression, it is secondary functional delusional parasitosis; and when there are organic causes such as multiple sclerosis, vitamin B<sub>12</sub> deficiency, or cerebrovascular diseases, it is secondary functional delusional parasitosis (Le, 2003). When accompanied by a physical illness it is classified as psychotic disorder due to general medical condition in DSM-IV (Johnson, 1985). Primary symptoms refer to the belief of being infected with any kind of microorganism. Patients think that organisms grow, move, and sometimes come out of the skin. Some patients collect the small pieces of skin that they pick and bring them to the doctor; this is called the matchbox sign (Mercan, 2005). Skin picking due to delusions is a very rare condition.

**Neurotic skin picking:** It is characterized by repetitive skin picking due to irritation, loss of sensation, and benign irregularities of the skin (Freunsgaard, 1984). The scratching and picking cycle turns into an obsessive-compulsive ritual in some patients (Hatch, 1992). In neurotic skin picking, patients pick their skin with their nails and unlike cases of artifact dermatitis, they accept that they have caused the wounds. It was reported that the accompanying psychiatric conditions to

this illness are, a perfectionist and obsessive personality structure, obsessive-compulsive disorder, and depression, and that psychosocial stressors exacerbate symptoms in 33%-98% of cases (Gupta, 1987a). Histopathological appearance is congruent with repetitive local traumas to the skin (Van Disk, 1979).

**Artifact dermatitis:** Although patients deny it, artifact dermatitis are the lesions caused by the patient using nails, the butt of a cigarette, sharp objects, or chemicals (Gupta, 1987a; Fabish, 1980). Lesions separate from the surrounding normal tissue with exact geometrical borders and may replicate many skin disorders. Severe personality disorders, obsessive-compulsive disorder, depression, psychosis, mental retardation, and Munchausen's syndrome are among the psychiatric disorders that accompany artifact dermatitis (Gupta, 1993a; Stein, 1992). As these patients cannot control their self-images and moods, they have difficulty in maintaining interpersonal relationships. They engage in self-mutilating behavior with feelings of emptiness and anger. These lesions are a cry for help in response to the stress associated with undeveloped coping mechanisms. It was reported that the rate of manifestation of the lesions after situations that cause severe stress, such as illness, accident, and bereavement, was 19%-33%, and that the lesions regress as the stressful situation disappears (Sneddon, 1975). In addition to mutilating their skin, suicidal tendency, substance use, or compulsive eating are frequent in borderline personality disorder patients. The peculiar looks of the lesions and the fact that patients cannot explain how they were formed make the diagnosis easy (Hollender, 1973). Direct confrontation of the patient is not suggested (Spraker, 1983). Early diagnosis can prevent the illness from becoming chronic.

**Trichotillomania:** In dermatological terms, trichotillomania is the pulling out of one's own hair; in terms of a psychiatric definition, impulsiveness accompanies the hair pulling behavior (Stein, 1995). It was reported that in trichotillomania patients, a severe distress forms immediately before the hair pulling behavior and distress decreases, while pleasure and satisfaction is felt afterwards. Generally, hair on the forehead and temporal regions, eyebrows, eyelashes, beard, and pubic hairs are pulled, and these may then be sucked on and swallowed (Gupta, 1987a). Hairs in the affected region have varying lengths. Fifty percent of the



patients can be misdiagnosed with alopecia areata and trichotillomania is diagnosed when eyebrow and eyelash pulling behavior is present (Muller, 1972).

The definitions of the illness up to date cannot be applied to many patients or stay very insufficient (Stanley, 1992, Reeve, 1992). It was categorized among not otherwise defined impulse control disorders in DSM IV; however, later on it was included to obsessions. Interestingly, with PET scans it has been determined that brain glucose metabolism of trichotillomania patients differ from obsessive-compulsive patients (Swedo, 1991). According to another point of view, based on the finding that 43% of trichotillomania patients are unconsciously pulling their hair, it was related to dissociation psychogenic amnesia (Christenson, 1991).

Today, the etiology of trichotillomania is accepted to be variable and it is known that the rate of comorbidity with other diseases is high, the most frequent being obsessive-compulsive disorder, and sometimes it may not meet DSM IV criteria (Mc Elroy, 1994). Among other causes of trichotillomania are simple habit, reaction to stress, mental retardation, depression, anxiety, and delusions in rare cases.

In delusional cases, patients believe that there is something in the hair root, and when pulled out, it will disappear and normal hair will grow. This rare condition is called trichophobia. The identification of the underlying etiology and designing the treatment accordingly is essential. Trichotillomania is one of the rare dermatological diseases that show diagnostic symptoms in the histopathological examination of the skin. This change is called trichomalacia and is only observed in trichotillomania patients (Lachapelle, 1977). Forty-three percent of the cases deny that they pull out their hair and with histopathological examination the correct diagnosis can be made in these cases (Christenson, 1991).

## **2. Secondary psychiatric disorders:**

Fundamentally, dermatological diseases are in this group, but these diseases are strongly influenced by psychosomatic factors. Although the etiology of the disease is physiological, psychological factors and stress exacerbate the dermatological symptoms and psychosocial effects of the diseases increase stress. The most important variable that results in psychological susceptibility in dermato-

logical diseases is deformation. The magnitude of this effect is closely related to patients' relationships between self-perception and others. Other important variables are the age of the patient, and location and nature of the lesions (Holter, 1961). Despite the size of the lesion, psychological reaction can be very different and this is related to the extent of the underlying psychopathology (Medansky, 1981). Although dermatological diseases do not threaten life, they have a negative impact on the quality of life, and in majority of patients, psychological and social distraction is observed. Many patients facing social isolation adapt to this situation, however, in some patients, serious adaptation problems may arise and psychological disorders such as depression, anxiety, and social phobia may develop (Higgins, 1994). Although the main cause is physiological and the primary treatment approach is dermatological, with the addition of psychiatric treatment, patient adaptability to treatment increases and quality of life improves (Medansky, 1981). Although not used with patients who respond to dermatological treatment, psychiatric assessment and the questioning of situations that create stress are important for patients who do not respond to dermatological treatment.

## **3. Collaborative group:**

Patients in this group are the most difficult to treat. The etiology of the disease is, again, multifactorial. On the one hand, stressful situations, and on the other hand, complex physiological and psychological defense mechanisms attract attention. The relationship between dermatosis and psychological conditions is least understood in this group. While looking for the organic causes, psychological reasons should also be considered in these patients. There are various theories about the complicated mechanisms that cause diseases. Psychoneuroimmunological factors have a role in the majority of diseases such as liken planus, atopic dermatitis, psoriasis, chronic idiopathic urticaria, and alopecia areata (Gupta, 1990). Neuropeptides such as substance P and vasoactive intestinal peptide have a role in the pathophysiology of diseases like psoriasis and atopic dermatitis (Anand, 1991). Neuroregulation-forming effects of these neuropeptides are affected by psychopathologies such as major depression and psychological stress. Furthermore, additional research is needed on the issue. Some of the diseases in this group are:

Atopic Dermatitis: The prevalence of stress-

ful life events before the onset of atopic dermatitis is 70% (Faustich, 1985). Stress related to the disease or due to familial reasons plays an important role in increasing the severity of the disease (King, 1991). Before evaluating familial problems in these patients, depression should be excluded (Allen 1989). Depression, hypochondriacal symptoms, chronic anxiety, and anger management difficulties are significantly more frequent in adult patients in comparison to controls (Ginsburg, 1993). While the severity of scratching is comparable, the severity of depression, the severity of psychopathology, and severity of atopic dermatitis was not found to be comparable (Gupta 1994). In treatment, resistant chronic eczema, dysfunctional family dynamics, and problematic parent-child relationships are important. Although in some studies it is proposed that a rejecting mother figure and insufficient tactile stimuli are responsible for childhood atopic dermatitis, recent research showed that severe childhood atopic dermatitis is not related to the quality of mother-infant attachment (Daud, 1993).

**Psoriasis:** While the effect of psychosocial factors in the development of or exacerbation of the disease in adult psoriasis patients is 40%-80%, this rate is 90% in childhood psoriasis cases (Gupta, 1987b; Çetin, 1991). No relationship was found between the development and exacerbation of psoriasis and effects of stress. The individual differences in the perception of stress and coping mechanisms used may be the reason for this. However, it was suggested that the effect of stress on the development of the disease is higher in comparison to urticaria, acne, alopecia, and non-atopic eczema (Al'Abadie, 1994). Psychological stress has an important effect in treatment response of psoriasis patients. Several psychological disorders such as depression, anxiety, obsessive-compulsive disorders, and alcohol dependence are frequent in psoriasis patients (Vidoni, 1989; Rubino, 1989; Higgins, 1994; Devrimci-Özgüven, 2000). The relationship between psoriasis and mood disorders and their treatment are multidimensional. Normally, psoriasis is not a disease with scratching, but when the severity of depression increases, the severity of scratching also increases, suicide risk increases, and with antidepressant treatment, symptoms such as scratching and insomnia disappear (Gupta, 1988; Gupta, 1993b; Gupta, 1994). Alcohol usage in psoriasis decreases the response to treatment, while insomnia and scratching behavior develop

(Gupta, 1993c). It should be remembered that valproic acid, carbamazepine, and antipsychotics in the phenothiazine group, and some antidepressants can interact with PUVA and UVB, which are used in the treatment of light sensitivity diseases (Gupta, 1989, Kochevar, 1980). Again, lithium has a triggering or exacerbating effect on psoriasis, and lithium should be stopped in uncontrolled psoriasis patients (Deandrea, 1982; Selmanowit, 1986).

**Urticaria and angioedema:** While the etiology is unknown in 79% of urticaria and angioedema patients, it is also known that psychological factors have a direct effect on the development of the disease in 11%-21% of the patients and plays a facilitating role in 24%-68% (Champion, 1969; Michaelsson, 1969). Whatever the reason is, severe emotional stress exacerbates urticaria and traumatic events such as earthquakes may cause the disease (Arnold, 1990, Stewart, 1989). While 51% of urticaria cases begin with stressful life events, this percentage is 77% in cholinergic urticaria and 82% in dermographism (Czubalski, 1977). Depression is also frequent in these patients and it was reported that as the severity of depression increases, scratching of urticaria plaques increases (Gupta, 1994). When personality type and disease are matched, it was reported that these patients can not express their anger and hostility sufficiently and that they seek approval from others (Juhlin, 1981). While Ünal et al. (1991) reported that, anxiety and depression are three times more frequent in chronic urticaria patients than the general population. Topal et al.'s study failed to find a difference between normal controls and chronic urticaria patients, in terms of depression, anxiety, and personality disorders, but reported that certain personality disorders are significantly more frequent in cases who are single, female, have no history of physical illness, who do not use any medication, and have a family history of psychiatric illness (2004).

**Alopecia areata:** Although the effect of psychosocial factors on the development of alopecia areata is present in 22%-29% of childhood cases and 17% in adult cases, there was no direct relationship between the severity of alopecia and patient psychological condition and severity of emotional stress (De Waard, 1989). Some research showed that there was no difference between alopecia and control patients in terms of significant events experienced in the last year (Picardi, 2003; Demet, 2003). The most important factor of psychologi-

cal stress is related to cosmetic aspects (Beard, 1986). The percentage of psychiatric disorders, primarily anxiety and depression, in these patients ranges from 33% to 93%, and these psychological problems may continue for years, even after the regrowth of hair (De Waard, 1989). Severe psychiatric disorders including psychosis can be seen in 11% of patients (Koo, 1994). It has been reported that these patients experience avoidance in attachment relationships, display more alexithymia and have less social support than general population (Picardi, 2003).

When all these issues are considered, the need for the collaboration of dermatology and psychiatry specialists in handling psychodermatology patients is obvious. There are discussions of how psychodermatology units should operate and offer training and different models are proposed. Mostly, these units are formed in dermatology departments and function under the name of psychodermatology, and psychiatrists, psychologists, and dermatol-

ogy assistants and specialists work in these units. The presence of a psychiatrist in the dermatology unit makes the acceptance of the psychiatric treatment by patients easier (Gould, 2004). Choosing dermatology department for the treatment of these patients is not a coincidence. Therefore, smooth transition from a structure such as psychodermatology, which includes a collaborative working space, to psychiatry is important in increasing patients compliance to treatment and effectiveness of the treatment. In the psychodermatological approach, in addition to treating dermatological diseases, the treatment plan also takes into consideration the patient's personality characteristics, accompanying psychiatric disorders, familial factors, profession, and social status.

Units functioning in this specialty are very limited, but their numbers are increasing. These structures should be developed in Turkey and research on this issue should be encouraged.

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