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Psychiatric Consequences of Skin Conditions: Multiple Case Study Analysis with Literature Review

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Abstract
This review of current literature demonstrates the psychological implications of skin conditions. Skin conditions of varying severity can impact the quality of patients' lives and have psychiatric consequences. This impact provides a need for healthcare providers to consider the psychological implications of one's skin conditions and their effect on quality of life. The psychological challenges that arise from varying skin conditions show the potential need for both dermatological and psychiatric interventions. The following literature review details the psychiatric consequences of skin conditions under various conditions. It first looks at literature highlighting the psychiatric consequences experienced through various age ranges, from adults to adolescents and children. The paper then explores multiple skin conditions and their psychological effect before highlighting some of the interactions that stress has on the skin that could further exacerbate one's condition. Finally, it examines how patients characterize their experience with their skin condition and goes into some clinical case studies of patients with psychological implications as a result of their skin disorder. The paper also highlights the magnitude of dermatologic patients experiencing psychological conditions in conjunction with their skin conditions.

Keywords Acne vulgaris · Vitiligo · Skin conditions · Psychiatry · Pediatric Psychiatry · Adolescent Psychiatry · Dermatology · Psychodermatology

Introduction

Skin conditions that occur across all ages and genders can have a psychological and social impact on a patient's quality of life [1]. Psychological factors play a significant part in

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approximately 30% of skin disorders showing a need to get better data on how skin disorders play a role in psychological disorders and vice versa [2]. AlRayalat et al. states that patients who have chronic skin conditions are more likely to report mental health symptoms than those who do not have chronic skin conditions [2].

A wide range of skin conditions ranging from moderate to severe can have a psychological effect on patients. Tuckman states that patients with visible skin conditions have poorer quality of life and psychosocial functioning scores than those who do not have these conditions [1]. Tuckman states that patients with conditions like eczema, skin cancer, and psoriasis face psychological challenges impacting social functioning and daily life [1]. Silvan et al. highlight that up to 80% of dermatology patients exhibit psychiatric symptoms [3].

Adults

After studying 718 patients ages 18–60 with sarcoidosis confirmed by biopsy, AlRayalat et al. looked at the sample based on those with a presence and absence of skin involvement. They underwent mental health assessments, including depression and mood scales [2]. Sarcoidosis is a disease that affects multiple systems and results in skin lesions related to their illness in approximately 25–30% of patients [2]. Sarcoidosis is also often a disease that can initially present itself as a skin condition where primary care or dermatologist may be the first to see the patient. This leads to a challenge in addressing the multi-systemic disease at hand and any comorbidities involving mental health [2]. In those with skin involvement, approximately 143 of the sarcoidosis patients had experienced a more depressed mood than those with no skin involvement [2]. The survey showed that those patients with skin involvement experienced low mood and loss of appetite more frequently than those without the presence of skin involvement. Those with skin involvement also showed a statistically significant loss of acceptance compared to those without [2]. Several studies have shown that addressing psychiatric comorbidities in patients with chronic systemic diseases with skin manifestations is effective; however, limited research addresses these issues [2].

The British Skin Foundation conducted a survey that showed that 56% of participants reported low self-confidence and difficulty making friends, and 29% felt that their skin condition was an active barrier to finding a partner [4]. These results contribute to the idea that one's skin condition affects participants' quality of life. Psoriasis is a common autoimmune inflammatory disorder that presents as red or silver scaly patches on the skin and affects approximately 1.4 -2% of the population, according to Jafferany et al. [5]. Jafferany et al. states that a reported 19% of patients with moderate to severe form of psoriasis have experienced a form of social rejection due to their skin condition [5].

Children and Adolescents

Children and Adolescents have a unique position in the psychodermatology of skin conditions due to the high frequency of skin conditions and the significant impact that they can have on their well-being. De Vere et al. states that the psychological and physical development that occurs during adolescence is a critical period of growth. Because skin conditions are very common in adolescence, De Vere et al.; states that there is a considerable psycho-

logical burden that exists in adolescents with skin conditions and higher rates of anxiety and depression in those with chronic skin conditions [6].

A common skin condition that affects children is atopic dermatitis, an inflammatory skin disease that affects 15 to 20% of children. Atopic Dermatitis can affect skin sensation, which is critical for sensory perception and communication in infants, resulting in delayed or impaired emotional development [7]. Barankin et al., in a study, found that children with severe atopic dermatitis had twice the rate of psychological disturbance than the control group [7]. Disturbance in sleep is also a commonality among patients with skin diseases. A study showed that 60% of children with eczema had complaints of impaired sleep quality, which can lead to psychosocial stress and can affect children and adolescents' academic performance [4].

Vitiligo

Vitiligo, an autoimmune disorder that manifests on the skin as depigmentation, affects approximately 1% of the world's population [5]. Vitiligo's severity ranges from small areas of the skin to depigmentation that covers the entire body. As a result, it can have a significant psychological effect on patients with vitiligo. Vitiligo occurs due to autoimmune destruction of melanocytes and causes milky white patches on the skin. Vitiligo most commonly occurs on the hands and face. Jafferany et al. report that approximately 75% of vitiligo patients have a psychological disorder [5]. Due to the unpredictable nature of vitiligo patients, it leaves patients with lesions that drastically impair their quality of life [5]. Some of the implications that can cause the onset of vitiligo include stress which can cause a hydrogen peroxide accumulation that can lead to melanocyte damage in the epidermal layer of the skin according to Jafferany et al. [5].

Jafferany et al. states that the most common psychological condition amongst vitiligo patients is depression. Sarkar et al. explored this statement through a case-controlled study comparing healthy controls with vitiligo patients [5].

The study provided participants with a self-reported questionnaire and a 61-item survey questionnaire that assessed psychiatric morbidity. This study found that 62.29% of vitiligo patients suffer from depression [5]. Vitiligo patients who have been diagnosed with vitiligo for more extended periods were shown to express more severe depressive symptoms than those that have experienced vitiligo for shorter periods [5]. Showing that there may be a linear relationship between the duration of vitiligo and the severity of depressive symptoms [5]. Additionally, Bonotis et al. found gender differences in the effect of vitiligo; there are statistically significant results showing that women with vitiligo have lower self-esteem and higher levels of neuroticism than men with vitiligo [5].

Parad et al. states that patients diagnosed with vitiligo earlier during their childhood are more at risk for developing psychiatric conditions and long-term effects on their self-esteem than those who develop and are diagnosed with vitiligo as adults. Approximately half of the vitiligo cases have a childhood-onset showing the need for treatment that addresses psychological impact [8].

Acne

Acne vulgaris is extremely prevalent amongst patients throughout their life and can have a psychological impact that varies depending on age, gender, and career. Dreno et al. states that acne has a significant and underestimated psychological impact and that stress, anxiety, and other life factors have a "reciprocal relationship with disease susceptibility and severity [9]."

In a study done by Bez et al., one-hundred and forty patients with acne vulgaris and 98 control subjects were studied. A psychiatrist diagnosed social phobia in 45.7% of patients with acne vulgaris versus 18.4% of the healthy control patients [10]. Showing that there may be a correlation between acne and forms of social anxiety. Barankin et al. states that there is a demonstrable association between acne, depression, and anxiety affecting patients' self-image and self-esteem as well as their personality and emotions [7].

In a study done by Akran et al., 2,657 high school students were examined, and those with acne were interviewed [11]. The Hospital Anxiety and Depression Scale was used for one of every two subjects with acne and for a sex-matched control group to determine the prevalence of anxiety and depression [11]. This survey found that acne results in higher anxiety among adolescent girls than their male counterparts despite similar severity found in boys and girls with acne. Adolescent girls were also more vulnerable to psychological effects than boys [11].

Interaction between stress and skin and its impact on skin conditions

Alternatively, stress can have a reciprocal relationship with the skin and can impact healthy skin by producing conditions like acne or exacerbating prior skin conditions. Psychosocial stress has a tendency to affect immune response. Hunter et al. express that the response to psychosocial stress is complex and involves communication between the endocrine, immune and nervous systems, and both the peripheral and central pathways to form a response. Psychosocial stress can suppress the immune system and cause dysregulation of the immune system. Hunter et al. states that psychosocial stress causes an increase of glucocorticoids that in turn suppresses IL-1β and TNF-α production, two inflammatory cytokines that are key to wound healing. Stress affects the skin barrier's function and healing [12]. The effect on the skin's healing and function could cause a domino effect, further exacerbating the skin and thus the potential to exacerbate the psychological conditions that have developed due to the skin condition.

Characterizing the Effect of skin conditions

In a survey given to capture the views of patients with chronic skin conditions at the "Skin Matters" conference in London on May 20th, 2017, it was found that approximately 85% of dermatology patients reported that the psychological part of their skin diseases was one of the major components of their illness and that aspects of their daily life such as mood (21%) and stress levels (21%) were most commonly affected by their skin condition [13]. 77% of the participants at the conference also noted that they could benefit from having more

psychological support to help manage their skin condition [13]. Participants characterized through free-text responses that their "confidence was adversely affected and that the skin condition made the sufferer feel less attractive and embarrassed [13]." Others stated that they "have found their condition very isolating" Dalgard et al. reported that many participants with skin conditions are clinically depressed and anxious [13]. Results showed that a large majority of the participants felt that psychological support would be beneficial as part of managing their skin conditions [13].

Case Reports

Case #1 A 14-year-old high school swimmer was referred for psychiatric evaluation because of an onset of depressive symptoms and new anxiety. He confirmed that his mood symptoms began when he went out for his new high school swimming team. He was an excellent competitive swimmer and had grown up with his former pre-high school teammates, who were not fazed by his extensive psoriasis. However, his new prospective teammates had never seen psoriasis and were visibly horrified by it and shunned the patient. The psychiatrist began cognitive-behavioral therapy (CBT) and low dose sertraline which produced quick mental health improvement. Simultaneously, he was referred to a dermatologist who began narrowband UVB treatments. The results were marginal, and he was then treated with UVA photochemotherapy (more powerful and stronger) and had a topical psoralen as part of the treatment. He responded and had a full recovery. Periodic narrow band UVB along with topical psoralen maintained remission. He was accepted onto the high school team, where the coach invited a dermatologist to give a presentation to the team members. He continued to blossom with social acceptance.

Case #2 A 17-year-old university freshman gymnastics athlete was noted to have severe pitting and some pustular acne on his face, chest, and back. His teammates were not bothered by it, but they did tease him, especially when showering after practice. He greatly resented being teased. A second-year medical student who had been formerly a gymnast worked out daily with the team for health and exercise. The medical student prodded the freshman to see someone at the student health center. Initially reluctant, he finally agreed. The physician started him on a regimen of daily doxycycline and, noting some blunted affect, and referred the gymnast to student mental health. He was diagnosed with dysthymia and was begun on CBT with excellent results. The doxycycline also produced excellent results with virtually 100% clearing. The gymnast expressed amazement at how much better he felt about himself, not realizing before that his acne had given him low self-esteem.

Case #3 A 13-year-old girl, beginning puberty, developed extensive acne on her face. Her boyfriend told her that she "looked gross" and dropped her. She was devastated. Her pediatrician started her on isotretinoin (Accutane) and simultaneously referred her for a child psychiatric evaluation because isotretinoin had a small incidence of producing suicidality in adolescents who were taking it. The child psychiatrist did diagnose mild depression secondary to the rejection by her boyfriend, and she was started on CBT and low dose sertraline.

Her depression remitted, and her acne cleared. Continuing the isotretinoin, she never developed any suicidal ideation.

Case #4 A 36-year-old woman observed that her chronic eczema seemed to produce a flare-up, creating small clear vesicles on her hands when she was under great stress at her office. Her dermatologist treated the flare-up with PUVA therapy. When he heard of her correlation of flare-ups with stress, he referred her to a psychiatrist. The psychiatrist prescribed buspirone which helped relieve her anxiety around the stress. Simultaneously, he gave her behavioral therapy, teaching her relaxation techniques using count-down numbers/deep breathing and the five-finger relaxation technique. Being a devout and practicing Roman Catholic, she discovered that when she would say and repeat the Rosary at night using her Rosary beads, that the daytime stress would be alleviated, and she would have a sound sleep. She had been reluctant to bring her beads with her while traveling or at work. The psychiatrist showed her how to use her ten fingers as a substitution for the beads when she was in public places. She took the NYC subway at least twice daily and used her fingers on the train. The combination treatments, dermatologic and psychiatric, produced increased periods of quiescence between flare-ups. The combined treatments also produced less severe flare-ups when they did occur.

Conclusions

The presence of varying skin conditions and the resulting psychiatric implications that arise from them show the need for multi-specialty treatment. Addressing and treating the psychological impact while also treating the condition is essential in improving patients' quality of life. This paper also highlights that skin conditions can still affect patients' self-esteem and social life and contribute to psychological conditions despite the severity of the condition. This shows the need for more research to address the psychiatric needs of dermatologic patients and interventions that could improve patients' quality of life. In conclusion, there is a significant need for psychological intervention when addressing skin conditions due to the apparent effect that varying conditions have on patients.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s11126-022-09991-6.

Declarations

Disclosure of potential conflicts of interest Nicole Baker declares that she has no conflicts of interest. Dr. Stephen Bates Billick declares that he has no conflicts of interest.

Research Involving Human Participants and/or Animals Not applicable.

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