Quality-of-Life Effects of Common Dermatological Diseases

Ammar Ahmed, MD,* Argentina Leon, MD,† Daniel C. Butler, BS,‡ and Jason Reichenberg, MD*

Chronic skin conditions can impact a patient’s quality of life beyond the skin. This manuscript gives an overview of the negative impact of common chronic skin conditions, such as psoriasis, vitiligo, acne, and eczema measured by the validated quality of life instruments. Literature has shown that patients with vitiligo and acne are mostly affected by their psychosocial wellbeing, whereas psoriasis and atopic dermatitis patients are affected by both physical and psychosocial well-being. Effective treatments of the above skin conditions correlate with positive quality of life outcomes. Further studies are recommended to better understand factors affecting quality of life.

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Quality of life (QOL) can be difficult to define. The World Health Organization lists QOL as “individuals’ perception of their position in life, in the context of the cultural and value system in which they live and in relation to their goals, expectations, standards and concerns”.1 For patients with chronic skin diseases, QOL can be as simple as wearing a pair of shorts or tank top without feeling ashamed. For healthcare as a whole and dermatology in particular, QOL improvement is increasingly being seen as an important endpoint in clinical practice.

Chronic skin conditions can have a negative impact on one’s QOL, affecting their physical, functional and emotional well-being. For example, patients with psoriasis report physical discomfort, stigmatization, loss of productivity, and low self-esteem, as well as limitations in daily activities, social contacts, and work.2 Many patients with vitiligo experience psychosocial distress and social stigmatization even though it is often considered a “cosmetic skin disorder” in the Western culture.3-5 A study conducted by Spranger et al6 showed that eczema and psoriasis have a negative impact on QOL comparable to that of cardiovascular diseases. This is also supported by Rapp et al,7 who showed the negative impact of psoriasis on QOL is comparable to breast cancer, diabetes, heart disease, and major depressive disorder.

In daily clinical practice, dermatologists can use QOL assessment to help guide individual treatment goals. This is especially true when the patient’s perception of his/her skin condition is different from that of the treating physician. For example, what one may consider a minor case of acne can affect the patient’s ability to sleep or go to work. Since effective treatment has been shown to improve QOL, physicians can use the appropriate treatment modality to achieve the patient’s QOL goals and improve treatment adherence. Asking patients about their QOL status empowers them to feel in control of their skin conditions by allowing them to be part of the treatment decision process. Letting the patient know that the dermatologist values their input and cares about their general wellbeing can also foster trust in the patient-doctor relationship.

Determinants of QOL can be physical, generally manifested by itch or pain; as well as psychosocial, manifested by self-confidence, social acceptance, and the perception of being physically attractive. Different skin disorders can cause varying degrees of physical and psychosocial discomfort. This paper will discuss several QOL measurement scales. It will also provide a brief overview of QOL among more physically uncomfortable skin conditions (ie, eczema and psoriasis) and conditions that largely affect psychosocial health (ie, acne and vitiligo).
Quality of Life Scales

One way to measure QOL is to use an instrument in the form of a questionnaire. A good instrument or scale is one that is reliable, valid, and responsive to change over time, especially when comparing scores before and after treatment intervention. Over the years, different QOL scales have been introduced. They are divided into 3 main categories: general health-related scales, general dermatology scales, and skin-condition specific scales. Each instrument has a different focus for the measurement of QOL.

General Health-Related Scales

General health-related scales can be used to compare a wide range of medical diseases (ie, the negative impact of QOL in patients with psoriasis vs patients with heart disease). They can also help differentiate between the health benefits produced by different treatments. However, it is better to use skin-specific scales when comparing different skin conditions as they are more sensitive than the general health scales. Examples of general health scales include the Short Form (SF)-36 and the Psychological General Well-Being (PGWB) scale.

General Dermatology Scales

General dermatology scales are skin specific but not skin-disease specific. Some examples include the Skindex-29, Dermatology Life Quality Index (DLQI), Dermatology Quality of Life Scales (DQOLS), and Dermatology-Specific Quality of Life (DSQL). The children’s version of DLQI is called the Children’s Dermatology Life Quality Index (CDLQI) which is available in a colored cartoon version.

Skin-Condition Specific Scale

Skin-condition specific scale measures the QOL of a specific skin condition. Some examples include the Cardiff Acne Disability Index (CADI), Psoriasis Disability Index (PDI), and Eczema Disability Index (EDI). To date, there is no validated vitiligo-specific QOL scale available, though the DLQI and Skindex-29 are commonly used in this condition. For an outline of commonly used scale instruments, see Tables 1, 2, and 3.

Acne

A 22-year old female patient at the University of Texas-Austin Dermatology Clinic said, “This acne is affecting my life more than you can imagine. I cancelled my trip to the Caribbean with my friends because I was embarrassed to be seen without makeup and in a bathing suit that would reveal my back scars. I feel like crying all of the time.”

Acne vulgaris is a common skin condition that affects more than 85% of the adolescent population, but is also common in adults. Acne can be painful or itchy at times but usually has no debilitating symptoms. Even though acne is not physically disabling, it can cause profound mental distress manifesting as low self-esteem, depression, helplessness, frustration, and anxiety. This can be especially devastating to the QOL of adolescent acne patients, at a time when they are trying to establish their own identity, self-image of physical attractiveness, and acceptance from their peers.

Different studies have supported the profound psychosocial impact of acne. Using the Dermatology Quality of Life Scales, Morgan et al showed that patients with acne scored worse in psychosocial categories compared to patients with psoriasis, suggesting that acne has a greater psychosocial impact than psoriasis. A greater number of patients with acne than those with psoriasis reported their skin condition as “extremely” affecting their feelings of despair (lack of hope, worry about long-term effects, isolated, ashamed) and their feelings of being distressed (anxious, depressed, suicidal). Similarly, a study by Lasek et al compared the QOL in 60 acne patients with 60 psoriatic patients using the Skindex-29 scale. The 2 groups were matched according to sex and lesion severity. The study reported that the psychosocial impact of skin lesions was more important in acne patients than in

Table 1 General Health-Related Quality-of-Life Scales

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<tr>
<th>Instrument</th>
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<th>Scoring Method</th>
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<tr>
<td>Short Form-36</td>
<td>36-item self-reported questionnaire including health status, physical activities, physical role activities, bodily pain, general mental health, emotional role activities, vitality, and general health perceptions</td>
<td>There are 8 scaled scores corresponding to the 8 sections. Each score is converted to a 0-100 scale. (0 – worse health state) (100 – best health state)</td>
<td>Reliable and valid Each sections is equal in scoring consideration</td>
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<tr>
<td>Psychologic General Well-Being Index (PGWB)</td>
<td>22-item questionnaire evaluating the psychological and emotional well-being of subjects. Includes 6 broad domains: anxiety, depressed mood, positive well-being, self-control, general health, and vitality.</td>
<td>A score is created from the summation of all answers, each of which is scored from 0-5 and relates to the intensity or frequency of experience</td>
<td>It measures the emotional well-being but does not address the physical well-being.</td>
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The QOL in children and adolescents with acne has been studied in different cultures. In a cross-sectional study by Walker et al.\textsuperscript{14} surveying 200 Scottish adolescents (ages 15 to 18 years), 11\% of the adolescents perceived their lives to be significantly affected by acne. QOL was measured using the CADI and CDLQI scales. There was no significant gender difference in the mean QOL score with both scales. However, Jankovic et al.\textsuperscript{15} found that the QOL CADI mean score was significantly higher in Serbian adolescent girls with acne than in Serbian adolescent boys with acne. This finding is in line with previous studies suggesting that adolescent girls may be more vulnerable than boys to the negative psychological effects of acne.\textsuperscript{16,17} Rigopoulos et al.\textsuperscript{18} surveyed Greek adolescents (ages 13 to 18 years). Approximately 47\% of the Greek adolescents believed that acne was affecting their interpersonal relationships and 64.4\% believed that acne was affecting their self-image. Similar findings are observed in East Asia. Kubota et al.\textsuperscript{19} conducted a cross-sectional study on Japanese adolescents (ages 13 to 19 years) using the Mental Health Inventory (MHI) subscale of the SF-36 to assess psychological health and depression status of adolescents with and without acne. The mean MHI score of adolescents with acne was significantly lower than students without acne. Additionally, female adolescents with acne were more depressed, with the mean MHI score significantly lower than male adolescents with acne. In Hong Kong, Yeung et al.\textsuperscript{20} surveyed a randomized sample of 522 people (ages 15 to 25 years) by telephone interviews. Approximately 83\% were disturbed by the appearance of acne. These findings confirm that acne negatively impacts the QOL in adolescents cross-culturally on a personal and social level. Gender difference in the impact of acne is not absolute but the majority of these studies suggest that female adolescents may be more affected than male adolescents.

Studies suggest that effective acne treatments correlate with improvement of QOL in acne patients. Berg et al.\textsuperscript{21} reported a positive correlation between DLQI and clinical outcome (\( P < .05 \)) after 6 months of acne treatment with isotretinoin or oral antibiotics. Women with clinical grade 1, 2, and 3 acne had an average of 50\% improvement in DLQI scores after 6 months of acne therapy; the more severe the acne at baseline, the greater the DLQI improvement after treatment. Similarly, Cylrulnik et al.\textsuperscript{22} examined the impact of QOL before and after the treatment of high-dose isotretinoin (1.6 mg/kg/day) for an average of 178 days in a cohort study. Completion of this high-dose isotretinoin regimen correlated with good clinical outcome (100\% clearance after completion of therapy and 12.5\% relapse rate within 3 years) and improved Acne-QOL domains in self-perception, social role, and symptoms. Social-anxiety symptoms in acne patients have also improved with clinical outcome after completing 6 months of isotretinoin therapy (0.5-1.0 mg/kg/day). These findings are in line with other studies supporting the fact that improvement in QOL after acne treatment correlates with good clinical outcome.\textsuperscript{16,23-26}

In summary, these studies suggest:

- acne has a profound psychosocial effect compared to psoriasis and other chronic medical conditions;
- adolescents across a variety of cultures are impacted negatively by their acne; and

### Table 2: General Dermatology Quality-of-Life Scales

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<tr>
<td><strong>Dermatology Life Quality Index (DLQI)</strong></td>
<td>10-item self-reported survey which addresses feelings, daily activities, leisure, work, school, personal relationships and treatment</td>
<td>Each item is worth 3 points. A higher score indicates greater QOL impairment (maximum score of 30).</td>
<td>High validity, reliability, and consistency. Short and practical for efficient use. Its brevity may not fully address the emotional impact of the skin condition.</td>
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<tr>
<td><strong>Skindex-29</strong></td>
<td>29-item survey which addresses emotions, symptoms, and functioning</td>
<td>The domain and overall score are expressed on a 100-point scale. A higher score indicates a greater QOL impairment.</td>
<td>Short and practical for efficient use. Addresses psychosocial impact and correlates to clinical severity.</td>
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<tr>
<td><strong>Children’s Dermatology Life Quality Index (CDLQI)</strong></td>
<td>10-item survey that addresses the QOL in children ages 3-16 and is used with the assistance of their parents. It has similar structure to adult DLQI.</td>
<td>Same scoring system as adult DLQI. A higher score indicates greater QOL impairment (maximum score of 30).</td>
<td>Test is available in cartoon form.</td>
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effective acne treatment correlates with QOL improvement.

Thus, early treatment intervention may prevent psychological sequela (social anxiety and low self-perception) and physical sequela (irreversible scarring).

**Vitiligo**

“I feel embarrassed . . . Now that I am single again, I don’t feel confident to meet other men. I don’t know how they will think about me with this skin problem,” said a 48 year old Asian female vitiligo patient at the University of California, San Francisco Dermatology Clinic.

Vitiligo is a chronic disorder of skin depigmentation that affects 1%-2% of the general population.\textsuperscript{27} It is a disease that has been observed in patients for over 4,000 years. The term comes from the Latin word *vitelius* which means “white flesh of calves.”\textsuperscript{28} Vitiligo is characterized by white depigmented patches from the loss of melanocytes, usually in symmetrical distribution. It is one of the most frustrating skin conditions for patients in that it has an unpredictable natural course of progression and there is no consistent effective treatment. Many patients with vitiligo experience social stigmatization that may lead to exclusion in some countries, such as Asia and Africa. The first prime minister of India, Pt Jawaharlal Nehru (1889-1964), ranked vitiligo as one of the 3 major

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<tr>
<td>Acne Disability Index (ADI)</td>
<td>48-item survey which addresses 8 domains: psychological, physical, recreation, employment, self-awareness, social reaction, skin care, and financial impact</td>
<td>Each item is scored from 0 to 3. A higher score signifies a greater QOL impairment.</td>
<td>Survey is thorough, but the length limits its use</td>
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<tr>
<td>Cardiff Acne Disability Index (CADI)</td>
<td>5-item questionnaire derived from the longer Acne Disability Index (ADI).</td>
<td>Each item is scored from 0 to 3 and calculated by summing the scores of the 5 questions (maximum total score of 15). A higher score signifies greater QOL impairment</td>
<td>Short and practical for efficient use</td>
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<tr>
<td>Psoriasis Disability Index (PDI)</td>
<td>15-item survey which addresses daily activities, work or school, personal relationships, leisure, and treatment.</td>
<td>Two possible scoring systems: 1) visual analog scale – questions answered on a scale of 1 to 7; 2) tick box – questions answered from 0 (“not at all”) to 3 (“very much”).</td>
<td>More appropriate to evaluate for disability than to assess emotional impact</td>
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<tr>
<td>Koo-Menter Psoriasis Instrument (KMPI)</td>
<td>A 2 page questionnaire which combines the objective and subjective severity to assist dermatologists in deciding when to initiate systemic therapy. For the subjective portion, the patient answers the 12-item survey, marks “X” on the figures where there is psoriasis involvement, and answers questions related to joint symptoms. For the objective portion, the physician evaluates for body surface involvement, types of psoriasis, and phototherapy options.</td>
<td>12 item survey: each item is scored from (0 to 10) addressing the emotional and physical impacts of psoriasis.</td>
<td>It integrates both subjective and objective measures Derived for practical clinical use</td>
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<tr>
<td>Eczema Disability Index (EDI)</td>
<td>15-item survey which addresses 5 domains: daily activity (5 items), work or school (3 items), personal relationships (2 items), leisure (4 items) and treatment (one item).</td>
<td>Questions are answered on a 1-7 linear analog scale, representing grades from ‘not at all’ to ‘very much’.</td>
<td>Short and compact Addresses functional and social impact The questions for each domain are not equally distributed</td>
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medical problems in India next to malaria and leprosy. The stigma is mainly from myth-based misconceptions and superstitious religious beliefs (ie, a person who committed “Guru Droh” [a sin or mischief] in their previous life suffers from vitiligo in the present life). In Western societies, vitiligo is generally considered a harmless cosmetic skin condition in which the necessity for treatment is often underestimated by insurance companies. Yet, vitiligo can severely impact one’s QOL and psychosocial well-being.

The adverse impact of vitiligo on QOL seems to be centered on psychosocial well-being. The most common QOL problems in vitiligo patients include worry of vitiligo getting worse (60%), anger (37%), embarrassment (34%), depression (31%), impact on social life (28%), and shame (28%). In comparison to other chronic skin disorders, Linthorst et al found that vitiligo had a negative impact on QOL comparable to psoriasis, eczema, chronic hand dermatitis, and acne in the emotional domain of the Skindex-29 scale. However, the overall QOL (measured by mean DLQI) was better in vitiligo patients than psoriatic patients. Vitiligo patients with darker skin color ( Fitzpatrick skin type IV-VI), those with greater skin involvement, more visible lesions, longer disease duration, and prior vitiligo treatments generally tend to have a lower QOL.

The impact of vitiligo between men and women varies in different cultures. Studies suggest that women suffer from a lower QOL in the Asian and Middle Eastern cultures. Young females with vitiligo can suffer severe social consequences, including difficulty finding a partner and maintaining a satisfying marital relationship. If a woman did not disclose her vitiligo to her husband before marriage, there is a law in Iran that supports men filing for a divorce without alimony. Females in the Western societies suffer less stigmatization. Many studies in the Western countries do not show a gender difference of QOL in patients with vitiligo.

There are limited studies evaluating QOL in children and adolescents with vitiligo. Recently, Choi et al evaluated QOL of 57 Korean adolescents with vitiligo (ages 12 to 18 years) using the Skindex-29 scale. Similar to the adult findings, this study found that adolescents with longer duration of vitiligo, greater facial involvement, and a history of previous treatment had lower QOL. The Skindex-29 score also had a strong positive association with psychological measures, such as the Center for Epidemiologic Studies Depression Scale (CES-D) and the Revised Children’s Manifest Anxiety Scale (RCMAS). Thus, the findings suggest that lower QOL is associated with depression and anxiety in adolescents with vitiligo. Similarly, Bilgic et al showed that children (ages 8 years to 12 years) with vitiligo scored higher on the Child Depression Inventory (CDI) compared with controls; however, this effect was not observed in adolescents (ages 13 to 18 years) with vitiligo.

As with acne, effective treatment seems to help QOL in vitiligo patients. Parsad et al demonstrated that vitiligo patients with successful treatment with photochemotherapy and/or betamethasone correlate with greater than 50% DLQI QOL score improvement compared to baseline score. Successful treatment is defined by no new lesions, no increase in size of the existing lesions, and more than 25% repigmentation after one year. Njoo et al also showed a similar finding in children. Fifty-three percent of children treated with narrow-band UVB twice a week showed 75% overall repigmentation. Response to treatment correlates with QOL improvement measured by mean CDLQI; the more repigmentation, the better the QOL score. Children with 75% overall repigmentation had 80% improvement in QOL, whereas children with 26%-75% repigmentation had 52% improvement in QOL scores compared with pretreatment scores. These studies suggest a positive association between effective therapy and QOL in vitiligo patients.

In summary, even though there are some conflicting data among studies, the most common characteristics leading to lower QOL in patients with vitiligo are:

- dark-skinned individuals,
- more visible lesions,
- extensive area of involvement,
- prolonged duration of vitiligo, and
- failing previous treatments.

The negative emotional impact of QOL in vitiligo patients is just as severe as other chronic skin disorders. However, the overall QOL in vitiligo patients is better than psoriasis in most studies. Effective response to treatment seems to improve one’s QOL. Future research is warranted to establish vitiligo-specific QOL tools to address skin-specific QOL impact. Given the lack of effective uniform treatments and the severe psychosocial impact of vitiligo, one might consider using a psychological approach to help with the improvement of QOL. Counseling has been demonstrated to improve body image, self-esteem and quality of life of patients with vitiligo.

Therefore, recognizing and managing the psychological component is just as important as finding an effective clinical treatment for this disease. It is apparent that vitiligo can be a psychodermaologic skin condition causing psychiatric comorbidities, (ie, depression, low self-esteem, anxiety).

### Atopic Dermatitis

“I was itchy everywhere . . . I would get little skin tears and bleed through my clothes . . . these things made it impossible to go out in public . . . my peeling body and face scared my daughter and her friends,” revealed a 35 year-old female atopic dermatitis patient of the University of California, San Francisco Goeckerman Day Program.

Atopic dermatitis is a chronic inflammatory skin disorder most commonly affecting children, with 17% of children in the United States and 10%-20% of children in Europe affected. It is suggested that patients with atopic dermatitis have a genetic defect in the epidermal barrier, thus resulting in dry and sensitive skin. Physical symptoms may include dryness, redness, swelling, flaking, blistering, cracking, bleeding; but most notably, intense itching that can lead to emotional stress, irritability, and sleep dysfunction. The impact of atopic dermatitis goes beyond physical appearance.

In a survey of members from the National Eczema Society, work was adversely affected due to eczema in 54% of 1,972
adults. Atopic dermatitis has the greatest impact on patients' symptoms, emotions, and functions. In children, itching and loss of sleep negatively affect their school performance as well as their social and sports activities. Embarrassment as a result of their appearance can lead to social isolation. Such effects, if not addressed early with effective treatments, may lead to low self-esteem, mood changes, and depression.

Parents caring for children with atopic dermatitis are also impacted in multiple ways; including sleep disturbance, altered social and holiday plans, and personal relationships. Frequently reported difficulties for parents include increased daily chores such as special food preparation and increased house cleaning, the need for special clothing and detergents, as well as frequent doctor visits. These difficulties equate to lost time from work and increased financial burden. In the United Kingdom, caring for a child with atopic dermatitis accounts for 36% of the total disease cost, which includes changes to the home environment, over-the-counter medications, transportation costs, visits to homoeopaths and salary loss. The other disease costs are attributed to National Health Service (NHS) consultations (36%) and NHS prescriptions (28%). The other reported difficulty for parents is psychological stress. A majority of the parents reported anxiety, depression, guilt, and frustration when caring for a child with atopic dermatitis. Perhaps one method to alleviate the psychological stress for parents is appropriate education. A survey of National Eczema Society members revealed that parents wanted more available and understandable information on atopic dermatitis.

The QOL in children with atopic dermatitis is comparable to children with other chronic medical conditions. Beattie et al compared QOL of children (ages 5 to 16 years) with chronic skin diseases to children (ages 5 to 16 years) with other chronic medical conditions using the CLQI measurement scale. The study showed that cerebral palsy has the worst QOL score, followed by generalized atopic dermatitis, renal disease, cystic fibrosis, urticaria, asthma, psoriasis, epilepsy, enuresis, diabetes, alopecia and acne. Similarly, Lewis-Jones et al also showed a worse QOL (measured by CLQI scale) in children with atopic dermatitis than psoriasis, vitiligo and acne. Based on these studies, it appears that atopic dermatitis affects QOL more than the other 3 skin conditions (psoriasis, vitiligo, and acne).

Effective treatment improves QOL of patients with atopic dermatitis. Kim et al assessed the efficacy of tacrolimus ointment from studies conducted in 8 Asian countries (China, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand). These studies demonstrated significant improvement of QOL in adults and children (measured by DLQI and CDLQI) after treatment with tacrolimus ointment. The subjective QOL improvement correlates positively with objective clinical improvement (measured by Physician's Global Evaluation of Clinical Response and Eczema Area and Severity Index [EASI]). Clinical efficacy of tacrolimus therapy was also shown in studies from Europe, North America, and Japan. One study also demonstrated improvement in both clinical outcomes (measured by SCORAD) and QOL (measured in DLQI) after 2 consecutive visits to the dermatology office ($P < .05$). These studies seem to suggest that effective treatment of atopic dermatitis and dermatology consultation visits are correlated with improvement of patients' QOL. In addition to medical treatment, providing adequate education to patients and their family members also correlates with QOL improvement and medical adherence.

In summary, atopic dermatitis can have a severe negative impact in patients' quality of life on both a functional and emotional level. Based on the limited data reviewed, children with atopic dermatitis seem to have the worst QOL compared to children with acne, vitiligo, and psoriasis. Effective treatment and patient education has a positive correlation with patients' QOL. Atopic dermatitis is one of the few chronic skin conditions that affect not only the patients but also their partners and family members. When treating the patient, it is important to keep in mind that the physician is also treating the patient's family.

**Psoriasis**

“I change my dress to long sleeves and leggings when skin is noticeable. . . friends don’t understand. Time devoted searching for a doctor and doing Goeckerman [has affected my quality of life]. . .” said a 68 year-old female psoriatic patient from the University of California, San Francisco Goeckerman Day Program.

Psoriasis is an autoimmune chronic inflammatory skin disorder that affects up to 2.5% of the world’s population. The name psoriasis originated from Greek, meaning “itching condition” (psora “itch” + sis “condition”). Other physical discomforts may include burning, bleeding, and pain from the irritated skin. The skin condition is characterized by hyperproliferation of keratinocytes and abnormal cell differentiation leading to epidermal hyperplasia, thus leading to thick scaly plaques. Similar to atopic dermatitis, psoriasis can have a negative impact on the patient’s physical, occupational, and psychosocial well-being.

Over the past decade, studies have shown the association of psoriasis with serious comorbidities. These comorbidities include cardiovascular disease, depression, hypertension, diabetes, malignancies, metabolic syndrome, and psoriatic arthritis. Compared to healthy controls, the core factors for metabolic syndrome (ie, insulin resistance, dyslipidemia, and obesity) are significantly higher in patients with psoriasis. Depending on the severity of the skin condition, psoriasis can lead to negative self-image, decreased productivity at work, and limitations in daily activities and social outreach. To assess the severity of psoriasis, Physician Global Assessment (PGA) has been used in the clinical setting, and the more detailed Psoriasis Area and Severity Index (PASI) is often used in clinical trials. The severity of psoriasis is usually inversely related to QOL; the more severe the psoriasis, the higher the PASI score, and the lower QOL.

In comparison to other chronic diseases, the landmark study by Rapp et al showed that the QOL based on SF-36 in
patients with psoriasis is comparable to other chronic major medical conditions such as heart disease, type-2 diabetes, and breast cancer. When compared to other skin diseases, Finlay et al. showed that psoriasis and atopic dermatitis have a greater negative impact on QOL than acne, basal cell carcinoma, and warts. When comparing psoriasis and atopic dermatitis, Lundberg et al. found no difference in health-related QOL between the 2 skin conditions or between genders. Additionally, psoriatic patients have been shown to have a lower QOL and higher level of depression than patients with vitiligo and alopecia.

Itching and problems with treatment have the greatest impacts on QOL in children with psoriasis. Beatte et al. showed that children with psoriasis have a worse QOL compared to children with epilepsy, enuresis, diabetes, alopecia, and acne. A study conducted by Varni et al. demonstrated that children (ages 4 to 17 years) with moderate-to-severe eczema, atopic dermatitis, and psoriasis have a lower QOL compared to children with diabetes.

As with the above-mentioned skin conditions, effective clinical treatment correlates with QOL improvement in patients with psoriasis. A prospective study conducted by Bhutani et al. showed a significant improvement of QOL in patients with psoriasis after 24 weeks of adalimumab treatment compared to the pretreatment baseline QOL. QOL improvement positively correlates with the objective improvement of psoriasis as measured by the PASI. Zhu et al. demonstrated that 82.5% of patients who had ustekinumab achieved PASI 75 (75% improvement or more from baseline at week 12) and significant DLQI score improvement from baseline at week 12 (P < .05). Yang et al. showed 81% of patients with psoriasis achieved PASI 75 after infliximab treatment at week 10. Similar to the 2 studies mentioned above, this study also showed an association between clinical improvement and QOL improvement measured in DLQI. There is limited data in the influence of treatments on QOL in children with psoriasis. Nevertheless, Oostveen et al. showed improvement of QOL (measured by CDLQI) in children after dithranol and systemic treatments which also positively correlated with clinical improvement.

In summary, the impact of psoriasis goes beyond the scope of skin, both physically and psychosocially. Both psoriasis and atopic dermatitis have a comparably negative effect on one’s QOL. Most studies support that the overall QOL (measured by mean DLQI) in psoriasis is worse than vitiligo and acne. Similar to acne, vitiligo, and atopic dermatitis, studies suggest that effective treatment correlates with improvement of QOL. Psoriasis is unique in that it can be associated with other comorbidities (including cardiovascular disease, metabolic syndrome, malignancies, and psoriatic arthritis) which can further impact one’s QOL.

Conclusion

It is clear that acne, vitiligo, eczema and psoriasis can have a severe impact on one’s QOL. Acne and vitiligo are more likely to affect the psychosocial component of QOL. Atopic dermatitis and psoriasis patients are generally affected by both physical and psychosocial factors. As such, atopic dermatitis and psoriasis patients can have a worse QOL score compared to acne and vitiligo patients when QOL tools measure the composite scores of both physical and psychosocial domains. However, one should interpret QOL scores with caution. It is important not to discount other skin conditions because they have better QOL scores. For example, even though studies support that acne patients have better overall QOL scores, acne can have a more profound effect on the patient’s life than psoriasis. Due to the risk of long-term scarring, one must also account for the effect that acne can have on future QOL, though the current tools used do not measure this phenomenon. QOL is a dynamic process that can change with time and circumstances, and cannot be fully evaluated by a single QOL questionnaire.

One consistent finding in all 4 skin conditions reviewed is that effective treatment seems to correlate with positive QOL outcomes. Even though it is logical to assume that the improvement in QOL is due to improvement of the clinical outcomes, it is important to know that it is not always the case. Certain skin conditions (most notably, acne, atopic dermatitis, and psoriasis) can be exacerbated by stress and emotions. Thus, the cause-and-effect relationship can go both ways.

It is also important to note the limitations of this paper. The studies reviewed in this paper vary in patient population, percent skin involvement, cultural backgrounds, QOL tools, and methodologies. Thus, the comparison made among these 4 conditions should be interpreted conservatively. Future studies are encouraged to better understand factors affecting QOL, ways to improve it, and how to best account for the associated comorbidities with each skin condition.

As more research and studies are underway, one can continue to educate the patient and their family members about the skin condition. A patients’ overall satisfaction increases significantly when the physician is able to explain and empathize with the patient’s skin condition. Having a good relationship with the patient as well as interpersonal skills can increase patient satisfaction, which is likely to improve treatment adherence and clinical outcomes.

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