Quality of life for patients with psoriasis: more than skin deep

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Quality of Life for Patients with Psoriasis: More than Skin Deep

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2009
Dedication

I would like to dedicate this paper to my Father, who I have seen struggle with psoriasis since I was a little girl.

I would like to thank my boyfriend, Andrew, and my family for their continued support through my graduate education.
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I would like to acknowledge Karen Graham, who served as my advisor for this paper, editor, and motivator.

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Introduction

As a health care provider, you attempt to empathize with your patients who have been diagnosed with a chronic illness, but can you ever truly understand what they go through on a daily basis? Can you imagine the impact on your life if you were suddenly diagnosed with a chronic illness? What would happen to your self-image, your psychological health, even your professional future? What if that chronic disease was psoriasis? Psoriasis involves the largest, most visible organ of the body, the skin. Not only would you have to struggle with your inner personal feelings of the disease, but you would also have to live with the general public’s reaction and stigmatization of your disease. Would the public’s and your personal view of your diagnosis impact your quality of life? For many people, psoriasis does alter their quality of life.

Psoriasis can be emotionally, physically, and cosmetically debilitating. According to a study conducted by the National Psoriasis Foundation in 2008 (n=426), 71% of those surveyed reported that psoriasis has a significant impact on their everyday life; 62% and 59%, respectively, reported significant itching and irritation; 41% considered their psoriasis to be disfiguring; 53% stated that psoriasis significantly impacts their emotional well-being; 63% expressed that psoriasis affects their feelings of self-consciousness in a negative manner; and 58% expressed feelings of embarrassment. When asked how they believe the public perceives them, 61% responded that they believe their psoriasis leads others to stare; 56% agree that others believe their psoriasis is contagious; 42% say their psoriasis leads others to feel uncomfortable around them; and 22% agree that psoriasis negatively impacts the quality of care they receive at salons, swimming pools, gyms, and restaurants (National Psoriasis Foundation, 2008h).

People diagnosed with psoriasis find ways to cope with the negative impact it has on their everyday lives. In a 2001 survey, patients were asked to rate how often they utilize certain
coping strategies when people negatively react to their psoriasis. The most common coping
mechanism used by psoriasis patients is to cover the skin lesions. The second and third most
common coping strategies involved educating individuals about psoriasis and informing the
public that psoriasis is not contagious. A less common coping mechanism involved telling
themselves that most people do not understand their problem. Less frequent coping mechanisms
reported include “telling oneself that others can be insensitive (59%) or telling themselves that
some people are just plain mean (42%)” (p.613). Although people with psoriasis commonly
employ coping strategies, none of the above strategies was associated with a better quality of

Quality of life is a major concern for people diagnosed with psoriasis. Not only do the
lesions themselves cause disability and pain, but the negative stigmatization from the general
public can lead to many psychosocial disorders, including depression and anxiety. Psoriasis is a
chronic disease with no conventional cure. Therefore, those diagnosed with psoriasis live with
the negative impact of this devastating disease daily.

Physician assistants and other health care providers need to gain a better understanding of
how psoriasis impacts the quality of life of those suffering with this incurable disease. This
paper will review the types of psoriasis and examine the impact psoriasis has on one’s
psychological well-being, self-image, economic welfare, and intimate relationships.
Background

Psoriasis is a chronic skin disease that affects approximately 2 to 2.6 percent of the United States’ population (5.8 to 7.5 million people) (U.S. Department of Health and Human Services, 2003), making it a fairly common disease. Psoriasis primarily affects adults, but can also be seen in children. According to the National Psoriasis Foundation (2008g), psoriasis often appears between the ages of 15 and 25. Psoriasis is twice as common in Caucasians as in African Americans and Asians and occurs equally in males and females (Lebwohl, 2003). According to a study performed in 2002, the total direct cost of psoriasis in the United States is approximately $649.6 million. Included in this direct cost estimate is the money spent on hospitalizations, outpatient physician visits, photochemotherapy, dermatologic prescription drugs, and over-the-counter drugs used to treat psoriasis (Javitz, Ward, Farber, Nail, & Vallow, 2002).

Pathophysiology

Within the past 16 years, knowledge about the pathophysiology of psoriasis has changed dramatically. Previously, the keratinocyte hyperproliferation seen in psoriasis was believed to be caused by abnormal epidermal differentiation; however, psoriasis is now accepted as a T cell-mediated inflammatory disease. T cells are antigenically activated through a series of complex interactions with various immune molecules. T lymphocytes are first activated in the lymph nodes by antigen-bearing Langerhans cells. In order for the T cell to become activated, it must interact with either major histocompatibility complex-1 (MHC-I) or MHC-II, both located on the antigen presenting cell (APC). The MHC-I or MHC-II interact with the T-cell receptor (TCR) complex located on the surface of the T lymphocyte. In order to maintain adhesion between the APC and the T lymphocyte during activation, an interaction between lymphocyte function-
associated antigen 1 (LFA-1), located on the T cell, and intercellular adhesion molecule - 1 (ICAM-1), located on the APC, must occur. Activation of the T cell allows it to proliferate, differentiate, and mature. During maturation, T cells gain the ability to exit the vascular system and enter the dermal layers of the skin. Once in the skin the T cells trigger keratinocyte hyperproliferation. It takes only 36 hours for a keratinocyte in a psoriatic lesion to complete the cell cycle, compared to an unaffected keratinocyte which takes 311 hours to complete. This is an eight fold decrease in the amount of time it takes keratinocytes to divide in psoriatic lesions. The release of cytokines interferon-gamma (IFN-γ) and tumor necrosis factor-alpha (TNF-α) play a role in attracting more T cells to the inflamed tissue, further perpetuating the process of T cell-induced keratinocyte hyperproliferation (Krueger, 2002).

Many global studies have confirmed that psoriasis carries a larger risk for cardiovascular disease, metabolic syndrome, and myocardial infarction (Cohen et al., 2007; Gelfand et al., 2006; Gisondi et al., 2007; Kaye, Li, & Jick, 2008; Wu, Mills, & Bala, 2008). Cardiovascular risk factors, such as diabetes, hypertension, hyperlipidemia, obesity, and smoking are seen more often in patients with psoriasis (Neimann et al., 2006). The inflammation caused by psoriasis, through activation of T cells, is thought to be the cause of the increased risk of these life-threatening diseases (Cohen et al., 2007).

The Five Types of Psoriasis

There are five types of psoriasis: plaque, guttate, inverse, pustular, and erythrodermic. Typically, patients will only be diagnosed with one type of psoriasis. However, on occasion a patient may exhibit signs and symptoms from two types. Psoriasis has the ability to change from one form to another, due to different infectious and environmental “triggers” (National Psoriasis Foundation, 2008e).
Plaque psoriasis is the most common type, accounting for 80 percent of psoriasis diagnoses (Lebwohl, 2003). Plaque psoriasis, or psoriasis vulgaris, is characterized by erythematous raised lesions covered with a silvery scale. Plaque psoriasis most commonly occurs on the elbows, knees, scalp, and lower back.

The second most common form of psoriasis is guttate, occurring in 10% of those diagnosed with psoriasis (Lebwohl, 2003). Guttate psoriasis usually occurs in childhood following a streptococcal infection. Guttate psoriasis is characterized as small, erythematous scaling papules on the skin (Lebwohl, 2003). The two most common locations for guttate psoriasis are the trunk and limbs. There are multiple triggers associated with guttate psoriasis, such as upper respiratory infections, tonsillitis, stress, injury to the skin, and certain drugs such as antimalarials or beta-blockers. The most common trigger is a streptococcal infection such as streptococcal pharyngitis (National Psoriasis Foundation, 2008c). Guttate psoriasis has the ability to spontaneously resolve, recur with repeated streptococcal infection, or become chronic (Wolff, 2005).

The third type, inverse psoriasis, is characterized by its location. Inverse psoriasis is found in the skin folds of the body: the armpits, groin, inframammy folds, and in the genital area (National Psoriasis Foundation, 2008d). This type of psoriasis tends to lack the scale that is associated with plaque psoriasis. Inverse psoriasis appears smooth and shiny and becomes easily irritated from sweat and constant friction associated with these areas. Inverse psoriasis is more common in overweight individuals and those with large skin folds (National Psoriasis Foundation, 2008d).

One of the more rare types of psoriasis is pustular psoriasis, affecting less than 3% of those diagnosed with psoriasis (Lebwohl, 2003). Pustular psoriasis is characterized by white
pustules on erythematous skin. It can be further categorized into either generalized (von Zumbush) pustular psoriasis or localized pustular psoriasis, otherwise known as palmoplantar pustulosis. Von Zumbusch pustular psoriasis is much more severe and can be life-threatening. It is associated with fever, chills, severe pruritus, dehydration, tachycardia, exhaustion, anemia, and muscle weakness (National Psoriasis Foundation, 2008a, 2008f). Von Zumbush pustular psoriasis causes skin to lose its protective function, putting the patient at increased risk for infection and fluid loss (Lebwohl, 2003). Ill patients with a generalized rash should be admitted to the hospital and placed in isolation, given fluid replacement, placed on cardiac support, and given IV antibiotics to prevent septicemia. Repeated blood cultures, temperature control, topical lubricants, and antiseptic baths should also be part of the treatment plan. Oral retinoids are given to rapidly suppress and resolve the lesions (Wolff, 2005). Palmoplantar pustulosis is characterized by pustule formation on the palms of the hands and soles of the feet. It is much less severe than Von Zumbush. Some suspected triggers for pustular psoriasis include medications, irritating topical agents, overexposure to UV light, pregnancy, systemic steroids, emotional stress, and sudden withdrawal of systemic medications or potent topical steroids (National Psoriasis Foundation, 2008f).

Erythrodermic psoriasis is a very life-threatening form of psoriasis occurring in less than 3% of those with psoriasis (Lebwohl, 2003). Erythrodermic psoriasis is characterized by widespread erythema and scaling (Lebwohl, 2003) and associated with severe pruritus and pain (National Psoriasis Foundation, 2008b). Erythrodermic psoriasis causes the skin to lose its protective function, leading to fluid and protein loss, infection, and loss of temperature regulation (National Psoriasis Foundation, 2008b). Complications associated with erythrodermic psoriasis include sepsis (Lebwohl, 2003), congestive heart failure, and pneumonia (National Psoriasis
Foundation, 2008b). Triggers associated with this type of psoriasis include systemic steroids, abrupt withdrawal of systemic drugs, severe sunburns, and the Koebner response (National Psoriasis Foundation, 2008b). The Koebner response is the triggering of lesions by trauma to the skin, such as a needle entering the skin during vaccination injections, sunburns, or scratches.

**Diagnosis**

Psoriasis is typically a clinical diagnosis based on the appearance of skin lesions evaluated by a health care provider. If the lesions have the qualities of psoriasis, a diagnosis can be made. On occasion a skin biopsy will be done to confirm the diagnosis histologically. A biopsy can help to distinguish psoriasis from other similarly appearing skin diseases, such as seborrhoeic dermatitis, lichen simplex, tinea corporis, and subacutecutaneous lupus erythematosus (Lebwohl, 2003). Erythrodermic psoriasis, specifically, can be difficult to discriminate from pityriasis rubra pilaris or Sezary’s syndrome (Lebwohl, 2003). No other laboratory or blood tests are needed for the diagnosis of psoriasis.

**Treatment Options**

There are various types of treatments to decrease the appearance of lesions on the skin. Unfortunately, at this time, there is no definitive cure for psoriasis and current treatments are not always effective. Factors such as the age of the patient, the type of psoriasis, the percentage of the body involved, previous treatments used, and any other medical conditions the patient may have will help to guide treatment selection. Psoriasis can be managed by either the patient’s primary care provider or a dermatologist (Wolff, 2005). Table 1 summarizes the major categories of psoriasis treatments.

The first line therapy for localized management of psoriasis is topical therapy. For psoriasis localized to the trunk and extremities, topical flurinated glucocorticoids including
betamethasone valerate, fluocinolone acetonide, betamethasone propionate, or clobetasol propionate in an ointment base are recommended. Prolonged application of fluorinated glucocorticoids is known to cause cutaneous atrophy, permanent striae, and telangiectasia. Other recommended treatments are hydrocolloid dressings to prevent scratching, triamcinolone acetonide intradermally injected into smaller plaques that are less than four centimeters, topical anthralin, vitamin D analogs, or tazarotene (Wolff, 2005). Tazarotene is a topical retinoid and is used as an alternative to corticosteroids (Wolff, 2005). Anthralin is a synthetic derivative of chrysarobin, a natural substance found in the bark of the araroba tree in South America. Anthralin decreases keratinocyte hyperproliferation (National Psoriasis Foundation, 2009).

Calcipotriene is a synthetic vitamin D₃ analog that is indicated for the topical treatment of moderate to severe psoriasis. The mechanism of action of calcipotriene is currently unknown, however, it does affect the proliferation and differentiation of a variety of cells (Warner Chilcott US, 2007). Vitamin D analogues are non-steroidal antipsoriatic topical agents that do not cause cutaneous atrophy (Wolff, 2005).

For the treatment of mild psoriasis of the scalp, tar or ketoconazole shampoo followed by betamethasone valerate 1% lotion is recommended. If scalp psoriasis is severe, then 10% salicylic acid in mineral oil is applied and left on overnight to remove the scales. After removal of the scales, fluocinolone cream or lotion is applied to the scalp and left on overnight. Once the thickness of the scales is reduced, clobetasol propionate or calcipotriene can be used for maintenance (Wolff, 2005).

Psoriasis of the palms and soles is treated by applying an occlusive dressing with a class I topical glucocorticoid. If this treatment is ineffective, then psoralen and ultraviolet A (PUVA) photochemotherapy may be used. PUVA should be administered to allow specific exposure to
the hands and feet. PUVA soaks is a specific treatment in which the hands and feet soak in 8-methoxypsoralen for 15 minutes and are then exposed to UVA phototherapy. Another option to treat psoriasis of the palms and soles is to use a systemic retinoid. Systemic retinoid can be combined with topical glucocorticoids or PUVA to improve its efficacy (Wolff, 2005).

The initial therapy for inverse psoriasis is topical glucocorticoids. Since areas where inverse psoriasis occurs are more prone to atrophy, glucocorticoid therapy should be limited and switched to a topical vitamin D derivative, tazarotene, topical tacrolimus, or pimecrolimus (Wolff, 2005). Topical tacrolimus is a macrolide immunosuppressant produced by Streptomyces tsukubaensis. Tacrolimus inhibits T-lymphocyte activity and production of cytokines (Astellas Pharma Manufacturing, 2006). Pimecrolimus is similar to tacrolimus in that they both act by inhibiting the activity of T-lymphocytes. Pimecrolimus also inhibits the release of inflammatory cytokines from mast cells upon mast cell activation (Novartis Pharmaceuticals Corporation, 2006). If inverse psoriasis is refractory to topical therapy, systemic therapy should be considered (Wolff, 2005).

The treatment for acute guttate psoriasis is to first treat the streptococcal infection with antibiotics. Narrow-band UVB radiation is the most effective treatment, however topical treatment and oral PUVA photochemotherapy are also used (Wolff, 2005).

The treatment of generalized plaque-type psoriasis is very complex and can include narrow-band UVB phototherapy, oral PUVA photochemotherapy, oral retinoids, methotrexate, cyclosporine, or immunomodulatory drugs, better known as biologics. These treatments can also be given in combination, in which two or more modalities are used. Rotational therapy can also be used. Rotational therapy involves switching the patient’s medication after clearing and a subsequent relapse to prevent long-term side effects (Wolff, 2005).
Narrow-band UVB phototherapy is only effective at treating thin psoriasis plaques. To increase its effectiveness it is often combined with topical glucocorticoids, vitamin D analogues, tazarotene, or topical tacrolimus (Wolff, 2005).

Oral PUVA photochemotherapy consists of taking 8-methoxypsoralen orally followed by exposing the patient to adjusted doses of UVA light one to two hours after taking the medication. Phototoxicity testing should be done prior to the treatment in order to determine the patient’s sensitivity to PUVA. Treatments are administered two to three times a week with increasing doses. Most patients clear after 19 to 25 treatments. PUVA keratoses and squamous cell carcinomas are known adverse side effects from long-term treatment. Acetretin in males and isotretinoin in females can be combined with PUVA in patients with refractory plaque-type psoriasis. This also decreases the length of treatment and total amount of antipsoriatic drug exposure (Wolff, 2005).

Acitretin and isotretinoin are oral retinoids that effectively induce desquamation, but only moderately suppress psoriatic plaques. To increase effectiveness they can be combined with narrow-band UVB and PUVA photochemotherapy, known as Re-PUVA (Wolff, 2005). Acitretin is prescribed for severe cases of psoriasis that do not respond to other therapies. The mechanism of action for acitretin is unknown. Acitretin is known to cause serious birth defects and should not be used in pregnant women or women who plan to become pregnant (Stiefel Laboratories, 2007). Contraception is mandatory during treatment and two months following cessation of treatment because the birth defects are so severe (Wolff, 2005).

Methotrexate is a systemic drug used to treat generalized plaque-psoriasis (Wolff, 2005). Methotrexate is an antimetabolite drug that interferes with DNA synthesis, repair, and cellular replication by inhibiting the enzyme dihydofolic acid reductase. Methotrexate targets actively
proliferating tissues, such as the epithelial cells in psoriasis, to decrease proliferation. Methotrexate has many serious side effects including bone marrow, lung, liver, and kidney toxicities; bone marrow suppression, aplastic anemia, and gastrointestinal toxicity (Xanodyne Pharmacal, 2004). Hepatic toxicity may occur after cumulative doses in a normal person, but risk factors such as alcohol intake, abnormal liver chemistries, IV drug use, and obesity increase the risk of liver toxicity (Wolff, 2005). Since methotrexate can cause such severe side effects, it is only approved for the treatment of severe, disabling psoriasis that is not adequately controlled by other medications, and only after the diagnosis of psoriasis has been confirmed by a biopsy (Xanodyne Pharmacal, 2004).

Cyclosporine suppresses the immune system by selectively inhibiting T lymphocytes. Psoriasis is a T cell-mediated immune disease; cyclosporine slows skin cell turnover by inhibiting T lymphocytes. Cyclosporine should only be used in non-immunosuppressed adults with severe psoriasis refractory to other types of systemic medications or when other systemic medications are contraindicated or cannot be tolerated. Patients may experience rebound psoriasis after discontinuation of cyclosporine. Cyclosporine may cause kidney damage and hypertension; therefore, frequent monitoring of serum creatinine and blood pressure is essential. Cyclosporine increases the risk of skin and lymphoproliferative malignancies in patients with psoriasis, especially if patients have been previously treated with methotrexate or other immunosuppressive drugs, UVB, coal tar, or radiation therapy (Novartis Pharmaceuticals Corporation, 2005).

The fastest growing class of medications used to treat psoriasis is the newly introduced immunomodulatory medications, or biologics. Examples include alefacept, adalimumab, infliximab and entanercept. Alefacept is a fusion protein that blocks the activation of T
lymphocytes by binding to the lymphocyte antigen, CD2, and inhibiting LFA-3/CD2 interaction (Astellas Pharma US, 2009). Alefacept is given intramuscularly and is only moderately effective, but induces long periods of remission (Wolff, 2005). Infliximab, adalimumab, and etanercept all bind to TNFα, decreasing its activity (Abbott Laboratories, 2008; Centocor Inc., 2009; Immunex Cooperation, 2008). By neutralizing TNF-α, inflammatory cytokines 1 and 6 are decreased, leading to reduced lymphocyte migration (Centocor Inc., 2009). Immunomodulatory medications are recommended to use in patients with moderate to severe psoriasis and/or when other systemic medications are contraindicated or are “less appropriate” (Abbott Laboratories, 2008; Centocor Inc., 2009).

Although the new biologic medications are effective at treating generalized plaque psoriasis, they are not without severe side effects. All biologic medications suppress the immune system, putting the patient at an increased risk for lymphoma and serious infections including sepsis and tuberculosis (Abbott Laboratories, 2002; Biogen Inc., 2003; Centocor Inc., 2006; Immunex Cooperation, 2003). Genetech, the maker of Raptiva (Efalizumab), has recently voluntarily pulled Raptiva from the market due to the risk of developing progressive multifocal leukoencephalopathy (PML) (U.S. Department of Health and Human Services, 2009). Health care providers need to clearly discuss the risks and benefits of using biologic medications with their patients.

Advancements in the understanding of the pathophysiology of psoriasis have led to the development of new treatments. Unfortunately, a cure for psoriasis stills remains elusive. Many patients continue to cope with the repercussions psoriasis has on quality of life, despite aggressive treatment. While physician assistants and other health care providers are trained to recognize the physical symptoms of psoriasis, it is equally important to understand and recognize
how psoriasis impacts the patient’s quality of life, psychological well-being, functional ability in the workplace, and intimate relationships.
Impact on Quality of Life

The literature demonstrates that quality of life is negatively impacted for patients with psoriasis, especially for females and those with more severe disease. According to Rapp et al. (1999) “psoriasis imparts a negative impact on health related quality of life (HRQL) similar to the impact of other major medical and psychiatric conditions” (p. 404). A study comparing the impact psoriasis has on quality of life to other health conditions demonstrated that psoriasis patients scored significantly lower on the social functioning aspect of the Medical Outcomes Study Short Form 36 (SF-36) than individuals with hypertension, chronic back pain, and arthritis (Weiss et al., 2002).

A 1998 survey by the National Psoriasis Foundation explored how patients felt psoriasis impacts their lifestyle, emotional well-being, employment, and social conditions. The results concluded that psoriasis has a negative impact on all aspects of quality of life for those affected. When comparing age groups, those age 18 to 54 reported a greater impact on psychosocial aspects than respondents 55 years or older (See Table 2). However, patients greater than 55 years old reported that psoriasis has a stronger impact on their ability to complete their daily activities, use their hands, or walk compared to those age 18 to 54 (See Table 3) (Krueger et al., 2001).

Seventy-nine percent of those surveyed with severe psoriasis reported an overall negative impact on their lives. This population also reported that psoriasis disrupts activities of daily living at least 10% of each month. Severe psoriasis, in the National Psoriasis Foundation survey, was defined as “psoriasis on more than 10% of the body, erythrodermic psoriasis, generalized pustular psoriasis, or disease that caused difficulty in at least three of the following four activities: standing, use of hands, sitting for long periods of time, or sleeping” (p. 281). In
addition, those treated with PUVA, methotrexate, etretinate, acitretin, or cyclosporine were also considered to have severe psoriasis (Krueger et al., 2001).

Many studies have shown that when patients rate their psoriasis as more severe, patients also rate that psoriasis has a stronger negative impact on their quality of life (Augustin, Kruger, Radtke, Schwippl, & Reich, 2008; Dubertret et al., 2006; Gelfand et al., 2004). A study conducted by Dubertret et al. (2006) demonstrated that individuals classified as having a more severe psoriasis case of psoriasis, more frequently responded that psoriasis causes a significant problem, compared to those with more mild psoriasis who reported psoriasis was just a problem. Those with more severe psoriasis also reported a higher Psoriasis Disability Index (PDI) score compared to the average, 43.8 vs. 25.4 respectively. The PDI is a disease specific quality of life questionnaire with scores ranging from 0 to 48, with 48 correlating to the highest amount of negative impact on quality of life (Dubertret et al., 2006).

A study conducted by Ciocon et al. (2008) compared 140 individuals with psoriasis plus psoriatic arthritis to 278 individuals with cutaneous psoriasis only. Following the study, they found no significant difference between self-reported disease severity, disease impact on quality of life, and psoriasis-specific quality of life impact. These results suggest that quality of life impairment stems from the cutaneous lesions, not from the arthritic pain associated with psoriatic arthritis.

A study conducted by Sampogna et al. (2006) in Italy used the SF-36 questionnaire, which consists of 36 items focusing on physical functioning, restrictions at work or other daily activities due to either physical or emotional limitations, pain, general health, energy level, limitations on social functioning, and mental health to determine quality of life impairment. The results demonstrated that those with palmoplantar, pustular, and psoriatic arthritis had the lowest
scores, thus a poorer quality of life compared to those with generalized plaque, localized plaque, and guttate psoriasis. The same study demonstrated that women and patients greater than 65 years of age experienced a poorer quality of life due to their psoriasis. However, a study conducted in the United States demonstrated conflicting results and discovered that younger individuals experience a poorer quality of life (Schmitt & Ford, 2007). The conflicting data may be due to the fact that the two studies were conducted in different countries. These two studies also used separate questionnaires to measure the impact psoriasis has on quality of life. The Italian study used the SF-36 questionnaire (Sampogna, Tabolli et al., 2006) which is a generic health status indicator, whereas the U.S. study used the Dermatology Life Quality Index (Schmitt & Ford, 2007), which is more specific to dermatological conditions. A separate study by Sampogna et al. (2006) used the Dermatology Life Quality Index and concluded that older adults (those greater than 65) suffer from more impaired quality of life, however this finding was not significant. A direct conclusion that older adults experience poorer quality of life cannot be derived from this study.

According to a study by Schmitt and Ford (2007), factors that are associated with more health related quality of life (HRQL) impairment are younger age, lower annual family income, currently smoking, more severe psoriasis, lesions of the face and genital area, and intense pruritus of the psoriatic lesions. Another study found that psoriatic involvement of the feet, armpits, genitals, and hands were correlated with a more significant impact on activities of daily living (Dubertret et al., 2006). Females reported that psoriasis has a greater negative affect on their health-related quality of life compared to males with similar amount of skin involvement (Gelfand et al., 2004).
**Quality of Life Research Limitations**

Many of the studies were conducted in European countries; results may not be generalized to other countries, including the United States. Many studies focused on the population with severe psoriasis. This can skew results because those with severe psoriasis are going to feel more strongly about their disease than those with mild psoriasis. Other studies only focused on plaque-type psoriasis. Plaque-type psoriasis is the most common form, but there is little research done on the four other types of psoriasis. Many studies obtained their participants through hospitals or dermatology offices. Obviously those who are seeking care from a dermatologist or are hospitalized are going to have stronger feelings about how psoriasis impacts their quality of life than those who do not feel the need to seek out care, also possibly skewing research results.
Psychological Impact

The literature focusing on psoriasis and psychological comorbidities clearly identifies a strong correlation. Patients who suffer from psoriasis are more likely to suffer from depression, psychological distress, anxiety, and/or alcoholism. Of those age 18-34 surveyed by the National Psoriasis Foundation in 2001, 54% reported feeling depressed (Krueger et al., 2001). The incidence of depression in the general population ranges between 3.7% to 4.5% (Murphy, Laird, Monson, Sobol, & Leighton, 2000). Many studies have shown that depression is a common psychological comorbidity in psoriasis patients (Devrimci-Ozguven, Kundakci, Kumbasar, & Boyvat, 2000; Esposito, Saraceno, Giunta, Maccarone, & Chimenti, 2006; Gupta & Gupta, 1998; Gupta, Schork, Gupta, Kirkby, & Ellis, 1993; Schmitt & Ford, 2007).

A 2006 Italian study of 2,391 patients determined the occurrence of depression in patients with psoriasis. Esposito et al. (2006) used the Center for Epidemiological Studies Depression Scale (CES-D), a questionnaire consisting of 20 items that are answered as “rarely or never,” “sometimes,” “occasionally,” or “all the time,” to determine the degree of depression symptomatology. If a patient scored 23 or higher on the CES-D, they were considered to be clinically depressed. The results demonstrated depressive symptomatology in 62% of patients, with a mean CES-D score of 26.1. Further results demonstrated that females reported significantly more depression than males (p <0.03). The same study demonstrated that males less than 40 years of age had a significant increase in the amount of depression reported compared to males greater than 40 years of age (p <0.002). This study did not evaluate the correlation between disease severity and depressive symptomatology (Esposito et al., 2006).

Gupta and Schork (1993) found that as the severity of psoriasis increases, so too does the severity of depression. Gupta and Schork had 217 patients complete the Carroll Rating Scale for
Depression (CRSD) and self-rate their psoriasis severity according to amount of redness, scaling, plaque thickness, and global severity. The CRSD is a 52 question tool that is completed by patients to screen for the presence of depression. A score of greater than 10 indicates a strong likelihood of clinical depression. Included in the CRSD were four yes or no questions that related directly to suicidal ideation. These questions were “Dying is the best solution for me,” “I often wish I were dead,” “I feel that life is still worth living,” and “I have been thinking about trying to kill myself.” From the responses, Gupta and Schork (1993) discovered that 9.7% of patients with psoriasis wished they were dead and 5.5% had current thoughts about committing suicide. These results are consistent with the results of a 1998 National Psoriasis Foundation survey that demonstrated 10% of 18-34 year olds (n=1918), 7% of 35-54 year olds (n=6625), and 3% of those 55 years or older (n=8891) contemplated suicide (Krueger et al., 2001). The rate of active suicidal ideation in psoriasis patients is much higher than those in general medical patients, which has a rate of 2.6 % (Cooper-Patrick, Crum, & Ford, 1994). Gupta et al. (1993) also demonstrated that patients who wished they were dead had higher depression scores on the CRSD and considered their psoriasis more severe (Gupta et al., 1993).

A study by Gupta and Gupta (1998) compared suicidal ideation in patients with acne, alopecia areata, atopic dermatitis, and psoriasis using the CRSD. The study concluded that those with extensive psoriasis, needing inpatient care, had the most depression with a mean CRSD score of 13.4. This was greater than the mean scores for patients with alopecia areata or atopic dermatitis. The group that scored higher than psoriasis patients on the CRSD was patients with mild to moderate non-cystic acne. Acne patients in this study were considerably of younger age, with an average age of 23.7 years, compared to psoriasis patients, with an average age of 47.8 years. The authors commented that adolescents and young adults are typically more susceptible
to the development of depression, and therefore, the cosmetic impact of even mild to moderate acne can cause significant emotional unbalance (Gupta & Gupta, 1998).

Schmitt and Ford (2007) aimed to discover the role of depression on quality of life in a 2005 study that included 265 adults with psoriasis. Schmitt and Ford used the Dermatology Life Quality Index (DLQI) to determine the HRQL, the CES-D, the Psoriasis Life Stress Inventory (PLSI), and the self-administered Psoriasis Area and Severity Index (SAPASI). From these instruments, Schmitt and Ford discovered that 32% of those surveyed screened positive for depression, of which only 16.5% who were considered to have high depression were receiving treatment. Just over fifty percent (50.3%) of those surveyed had high HRQL impairment. The psoriasis-related stress mean score (PLSI) was 9.5, in which a score of 10 was used to define high stress. Patients with high HRQL impairment were five times more likely to screen positive for depression than those with low HRQL impairment. Those with high HRQL impairment also had more stressful situations in their daily lives due to their psoriasis and had more illness-related stress (Schmitt & Ford, 2007).

Other studies have tried to determine the correlation between psoriasis and psychological distress. A study involving 1580 Italian adults diagnosed with psoriasis revealed that 46% of participants had minor psychopathological distress and 11% had major psychopathological distress. This study used several questionnaires to evaluate the participants’ psychological status. The General Health Questionnaire-12 (GHQ-12) was used to evaluate minor psychological distress while the Brief Symptoms Inventory (BSI) was used to evaluate major psychological distress. As with other studies, females more commonly showed psychological distress than males (Finzi et al., 2007).
A study using the Depressed and Anxiety Mood Scales compared the scores of psychiatric outpatients to the scores of psoriasis patients. Forty-six percent of psoriasis patients scored equal to or above psychiatric outpatients’ score on the depression aspect of the scale, while 33% scored equal to or above on the anxiety aspect. Further investigation found that 20% of patients with psoriasis scored equal to or above those diagnosed with clinical depression or anxiety (Evers et al., 2005).

A small study of 83 patients admitted to a psoriasis patient specialty clinic looked at alcohol consumption and psychological distress as it correlates to the disease. The researchers concluded that 30% of those participating in the study had difficulties with alcohol (assessed with the CAGE scale), and 22% consumed more than 20 drinks per week. When asked if they believe they have a drinking problem, 13% stated they have a current drinking problem and 18% stated they had a past drinking problem. The study also assessed anxiety and depression; 42% of those surveyed had anxiety and 22% were depressed. There was a significant correlation between alcohol intake and anxiety (p < 0.01) and depression (p < 0.03). Those with higher levels of anxiety, depression, and disability reported a higher weekly intake of alcohol and current drinking problem. In conclusion, the study demonstrated a significant correlation between alcohol consumption and psoriasis severity (p < 0.01), psychosocial disability (p < 0.01), pathological worrying (p < 0.03), anxiety (p < 0.01), and depression (p < 0.01) (Kirby et al., 2008).

Predictors of Psychological Distress in Psoriasis Patients

Factors that were associated with a higher likelihood of screening positively for depression were younger age, lower annual family income, currently smoking, alcohol abuse, having severe psoriasis, having genital lesions, and intense pruritus of psoriasis lesions. These
are the same factors that were found to be associated with higher HRQL impairments (Schmitt & Ford, 2007). Another study done by Fortune, Main, O’Sullivan, and Griffiths (1997a) also found that a younger age of onset and the female gender were predictors of greater psychosocial stress.

Finzi et al. (2007) identified that female gender was a strong predictor for both major and minor psychological distress. Psoriasis severity was not found to be a predictor for either major or minor psychological distress in this study. Young age (18-30 years vs. greater than 50 years) and lack of drinking alcohol were found to be protective factors against minor psychological distress. Different coping strategies that were found to be risk factors for developing major psychological distress were venting, denial, and behavioral. Active coping was found to decrease the risk of developing psychological distress (Finzi et al., 2007).

A study of psychological distress contributors in patients with psoriasis and atopic dermatitis revealed significant correlations of psychological distress with fatigue, high quality of life impairment, helplessness and decreased disease acceptance, less perceived social support, and a smaller social network. A multiple regression analysis of the data in this study revealed that the most significant predictors of distress in these patients were higher levels of fatigue (p <0.01), feelings of greater helplessness (p <0.01), and less perceived support (p <0.01). Interestingly, clinical status and itching did not predict psychological distress (Evers et al., 2005).

_Psychological Impact Research Limitations_

With all studies come limitations and the studies mentioned in this paper are no different. Many studies did not occur in the United States. Consequently, results from these studies may not be generalized to patients in the U.S. Some examples of these studies include: Esposito et
Many studies only used patients from one institution for their research, which can result in selection bias. Evers et al. (2005) used patients from the University Medical Center St. Radbound in the Netherlands. Finzi et al. (2007) collected data from patients that attend tertiary clinics. Fortune et al. (1997a) used patients from the University of Manchester’s psoriasis clinic at Hope Hospital. Gupta & Schork (1993) used psoriasis patients from the Department of Dermatology at the University of Michigan.

The same data obtained from psoriasis patients by Gupta and Schork in “Suicidal Ideation in Psoriasis” was used in another publication by Gupta and Gupta, “Depression and suicidal ideation in dermatology patients with acne, alopecia areata, atopic dermatitis, and psoriasis,” which was published five years later.

Studies conducted by Evers et al. (2005) and Schmitt & Ford (2007) had a greater number of female participants, 61%, 63.4% respectively. This can skew the results, especially since psychological disorders, such as depression, are more common in females.

The study conducted by Schmitt and Ford was conducted over the internet. Patients were recruited by an advertisement on google.com when the term “psoriasis” was entered in the search box. The internet allowed for a large geographical region to participate in the study, however, the internet also has many limitations. Schmitt and Ford’s research consisted of 91.3% whites, with a high and early drop out rate from nonwhite ethnic groups. Schmitt and Ford (2007) theorized the reason ethnics had such a high and early drop out rate was due to the time it takes to load multiple web pages with a dial-up modem. The use of the internet to survey patients also
excluded many people with a lower income who do not have the means to afford a computer or the internet.

Although depression was extensively researched, other psychological pathologies were not. Anxiety, bipolar disorder, and personality disorder are common psychological disorders that are not well studied in psoriasis patients.
Self-Image and Stigmatization

As a very visible disease, psoriasis undoubtedly affects self-image. The results of a small study consisting of 35 participants illustrated that 74.3% felt that psoriasis affected their self-confidence (Weiss et al., 2002). A study conducted in 1996 by Koo explored the impact that psoriasis has on self-esteem and body image. When asked to rate the impact psoriasis had on their emotions, respondents were most likely to feel self-conscious, helpless, embarrassed, angry, and frustrated about their psoriasis. As the severity of psoriasis increased, the more likely respondents were to feel uncomfortable or apprehensive about their appearance. Many believed that psoriasis caused their physical appearance to be unsightly. The severity of psoriasis seemed to impact the response of the participants in this study with the more severely affected individuals feeling more unsightly and more excluded than those with mild disease. When asked to define the worst and second worst aspects of psoriasis, over 50% responded with appearance-related comments with unsightly appearance, flaking, and noticeable flakes the most commonly stated (Koo, 1996).

Among the group age 18 to 34 (n=1918) surveyed by the National Psoriasis Foundation, 88% reported they were concerned their disease state would worsen; 81% reported feeling embarrassed when people viewed their psoriasis; and 75% reported feeling unattractive because of their psoriasis (Krueger et al., 2001). Another study reported that 53% of 215 people felt self-conscious among strangers and 46% wore unattractive or uncomfortable clothing in order to cover up their lesions (Gupta & Gupta, 1995). One study found that 82.9% of participants felt they needed to hide their psoriatic lesions from the public (Weiss et al., 2002). An extensive European study examining the quality of life for individuals with psoriasis determined that nearly 40% (n=7,538) of individuals classified with moderate to severe psoriasis felt that
psoriasis affects their clothing choice, makes them feel they need to bathe more frequently, and
gives them the feeling to change or wash their clothes more frequently (Dubertret et al., 2006)
When Gupta and Gupta (1995) compared appearance and socialization among different age
groups and gender, they found that those age 18 to 45 suffered the most, however, there were no
gender differences.

Respondents of the National Psoriasis Foundation survey commonly reported that others
mistake their psoriasis as a contagious disease (57%) or that their psoriasis has been mistaken as
another disease (48%). Diseases that psoriasis is often mistaken for are poison ivy (24%) and
acquired immunodeficiency syndrome (9%) (Krueger et al., 2001). In another study, 15% of
people with psoriasis (n = 215) reported the public mistaking their psoriasis for AIDS, leprosy,
or a venereal disease (Gupta & Gupta, 1995).

Stigma is defined as a discrediting mark that sets a person off from others (Ginsburg &
Link, 1989). A study conducted by Ginsburg and Link (1993) strived to obtain a further
understanding of the feelings of stigmatization and rejection felt by those suffering from
psoriasis. The results revealed people with psoriasis had in fact been rejected as a direct result of
their psoriasis. Those that encounter rejection and are aware of being stigmatized are more likely
to seek help. Those that encounter rejection and are unaware of being stigmatized are more
likely to consume alcohol (Ginsburg & Link, 1993). This study indicates that those with
psoriasis could benefit from support groups or individual therapy to help positively cope with the
feelings of rejection and stigmatization.

Gupta, Gupta, and Watteel (1998) examined how the feelings of stigma and the lack of
social touch impacted the psychological well-being of those with psoriasis. A group of 137
inpatients with psoriasis at the University of Michigan completed psychosocial questionnaires
that focused on social touch. Of the 137 participants, 26.3% stated they had experienced a situation within the last month in which someone had made a conscious effort not to touch them due to their psoriasis. Those that were stigmatized were more likely to have depression ($P=0.0001$), anxiety ($P=0.005$), hostility ($P=0.04$) and somatization ($P=0.04$) than those who did not experience lack of social touch.

A study conducted by Vardy et al. (2002) used the Questionnaire on Experience with Skin Disease to compare the amount of stigmatization felt by those with psoriasis to those with other dermatological conditions such as acne vulgaris, atopic dermatitis, eczema, sun-damaged skin, and fungal and viral skin infections. The Questionnaire on Experience with Skin Disease measures five different parameters of stigmatization. The five parameters include: self-esteem, the feeling of unattractiveness when skin lesions flare (labeled as retreat in the questionnaire), feelings of rejection due to the reaction of others, patient’s composure, and concealment of lesions (Schmid-Ott, Jaeger, Kuensebeck, Ott, & Lamprecht, 1996). The results showed that those with psoriasis experienced more stigmatization than those with other dermatological diseases, with refusal and retreat having the most significant difference (Vardy et al., 2002).

Gupta and Gupta (1995) discovered that social stigma has a greater effect on quality of life in those under age 45 than those over age 45. They theorized that this is because those over 45 have established their social network and feel more comfortable within these social networks, whereas those younger than 45 are beginning to form social networks and are more likely to suffer from stigmatization and social discrimination.

**Self-Image and Stigmatization Research Limitations**

This section will highlight some of the limitations of the research used. Many of the journal articles that were used in this section were published in the mid to late 1990s, therefore,
the information may be out-dated. A major weakness of most studies on psoriasis is that the participants score their psoriasis severity themselves, rather than a dermatologist. This is the weakness of the Koo study. Gupta and Gupta only obtained information from participants in a small geographical location; therefore, the information obtained may not be generalized to the United States population. The study conducted by Dubertret et al. was performed in Europe and selection was not based on random sampling (Dubertret et al., 2006). The study by Ginsburg and Link had a small sample size of 100 participants with moderate to severe psoriasis, excluding those with mild psoriasis.
Employment and Financial Impact

“Cost of care, time taken off to care for this skin disease [psoriasis], interference with work, and a decrease in the financial dimension of quality of life all contribute to the economic burden of psoriasis” (Pearce et al., 2006, p. 27). According to a 2001 National Psoriasis Foundation survey, patients currently employed report having to miss an average of 2.3 days in a 12 month period due to their psoriasis. Six percent (6%) of those with severe psoriasis reported discrimination while at work (Krueger et al., 2001). A German study from 2008 demonstrated similar results: employed patients lost an average of 4.9 days in a 12 month period due to their psoriasis. The study also revealed that the amount of days missed directly correlates to increasing psoriasis severity (Augustin et al., 2008).

Of the respondents surveyed by the National Psoriasis Foundation that were currently unemployed, 8% claim that psoriasis prevented them from working outside the home. Thirty-one percent (31%) of respondents reported that they had suffered some degree of financial distress as a direct cause of their psoriasis (Krueger et al., 2001). Unemployment was found to correlate with more severe disease, a younger age of onset, and higher weekly alcohol intake (Fortune, Main, O'Sullivan, & Griffiths, 1997b).

The results of a study conducted by Pearce et al. (2006) demonstrated that 33% of the 90 participants surveyed were currently unemployed, with 16.7% contributing their unemployment directly to psoriasis. Participants that were employed reported on the Work Productivity Assessment Index (WPAI) a 15.5% impairment in overall work and impairment while working. Individuals with more severe psoriasis demonstrated more impairment in the workplace and also with daily activities than those with mild psoriasis (Pearce et al., 2006).
Feldman et al. (1997) observed that with more severe disease comes more work and financial burden. Another study by Horn et al. (2007) obtained the same results revealing that patients with more severe psoriasis were less likely than those with mild psoriasis to be employed full-time. Feldman et al. (1997) noted that as severity increases, out of pocket expenses increase, cost and time for treatment both increase, and time lost at work increases. When asked if they were moderately bothered by the time lost from work because of their psoriasis, 36% of patients with severe psoriasis, 15% with moderate psoriasis, and 10% with mild psoriasis agreed. Fifty-seven percent of patients with severe psoriasis reported having a poorer quality of life at work. This percent was more than double the percentage of those with moderate (24%) and those with mild (17%) psoriasis. When asked about quality of life in money matters, 62% of participants with severe psoriasis reported it as “fair” or “poor,” 41% with moderate and 37% with mild also reported feeling the same. Eighty-six percent (86%) of patients with severe psoriasis reported being bothered “moderately” or “a lot” by the time spent on caring for their psoriasis (Feldman et al., 1997).

Gupta and Gupta (1995) found that those age 18 to 45 encountered more occupational/financial distress, compared to those greater than 45. Occupational and financial distress was considerably lower in those over 45 years of age. Gupta and Gupta (1995) account their results to the likelihood that those greater than 45 have generally less financial stress/burden than those less than 45, allowing those greater than 45 to feel more comfortable to take time off work or less stressed with medical expenses. The study showed that men had more occupational stress than women due to the fact that men feel more afraid of losing their job. Men also felt they could not take time off work or school for medical appointments (Gupta & Gupta, 1995). The most commonly reported occupational and financial stress (22% of n=215) was “not enough
money to pay medical bills,” with those in the 18-29 age group experiencing significantly more stress than those 30 years of age or older (p <0.003) (Gupta & Gupta, 1995).

When employees are not able to be productive at the workplace due to a disability, such as psoriasis, the eventual economic disparity is felt on the country’s economy. A study by Schmitt and Ford (2006) determined that on average participants missed 6.6% of work in the past four weeks due to health problems. Presenteeism, when workers are on the job but cannot function to their full capacity because of some medical condition (Hemp, 2004), accounted for mean productivity loss of 7.6%. Absenteeism due to psoriasis costs $7,696,383,000.00 in the U.S. annually. Presenteeism costs $8,862,415,000.00, making the total health-related work productivity loss (HRWPL) for psoriasis $16,558,723,000 (Schmitt & Ford, 2006). This number far outweighs the total annual cost of the illness at $649.6 million (Javitz et al., 2002). Factors that were found to be associated with higher HRWPL were lesions located on the hands, more severe disease, a self-reported health status of “poor” or “fair,” and more health related quality of life impairment (Schmitt & Ford, 2006).

Employment and Financial Impact Research Limitations

Schmitt and Ford collected their data over the internet using the same method as they did for “Role of Depression in Quality of Life for Patients with Psoriasis.” Therefore, this study has much of the same limitations as their previous study. Although the internet allows for a wider geographical population, it does not allow those with lower income to participate. The authors commented that patients who were more frustrated with their psoriasis may have been more likely to complete the online survey, which could have caused a selection bias leading to an overestimation of the adverse working affects due to psoriasis. The authors also did not ask
about comorbidities, therefore, HRWPL due to psoriasis could have been overestimated (Schmitt & Ford, 2006).

Feldman et al. (1997) did not use a validated instrument to measure expenses; rather, they relied on the patients’ perspective of their own expenses. To obtain more accurate data, the patient, physician, pharmacy, and insurance records would need to be assessed.

Pearce et al. (2006) mentioned that since they had a small sample size, they were unable to provide statistically significant evidence of the impact psoriasis has on the workplace. Other health disorders were not accounted for in this study. Therefore, comorbidities may add to the negative impact on the workplace. Results also may have been biased by a large number of participants that work in the “professional, technical, or related” fields. These fields often require face-to-face contact, thus increasing the amount of work-related distress.
Sexual Impairment

Psoriasis can cause significant sexual impairment leading to a decreased quality of life (Gupta & Gupta, 1997; Mercan, Altunay, Demir, Akpınar, & Kayaoglu, 2008; Sampogna, Gisondi, Tabolli, & Abeni, 2007; Turel Ermertcan et al., 2006). According to a survey conducted by the National Psoriasis Foundation, patients age 18-54 more commonly reported difficulty engaging in sexual activities (27%) due to their psoriasis, compared to patients 55 years and older (13%) (Krueger et al., 2001).

When asked if people with psoriasis believe their sexual activity declined after the onset of their psoriasis, 40.8% agreed. Of the 40.8% who believe psoriasis impacts their sexual activity, 60% related the decline to the effect psoriasis has on their physical appearance. Only 14.9% reported the decline was due to a decrease in the sexual interest of their spouse or partner. Other factors that contributed to a decline in sexual activity include: fear of passing psoriasis on to their children, spouse or partner fearing psoriasis is contagious, the inconvenience of shedding skin, and the inconvenience of applying medications to the body (Gupta & Gupta, 1997). Those with more psoriatic lesions in the genital area, more scaling, and more pruritus expressed a higher amount of sexual impairment. Those who felt psoriasis did impact their sexual activity also had a higher depression score on the CRSD (Gupta & Gupta, 1997). Two separate studies demonstrated that sexual impairment is increased in those with psoriasis when compared to healthy controls (Mercan et al., 2008; Turel Ermertcan et al., 2006). Those with psoriatic arthritis experience more sexual impairment than those with psoriasis alone (Gupta & Gupta, 1997; Sampogna et al., 2007). At one month follow-up, 61 – 75% of patients who had 75% or more decrease in the self-administered Psoriasis Area and Severity Index reported no further sexual impairment (Sampogna et al., 2007).
Sexual Impairment Research Limitations

There is not much research yet about how sexual impairment impacts quality of life in those diagnosed with psoriasis. Of the current research, only one study was conducted in the U.S. Gupta et al. (1997) researched the impact of psoriasis on sexual activity at the Department of Dermatology, University of Michigan Hospital using only 120 patients. The results, although important, are not strong enough to generalize to the rest of the psoriasis population.
Conclusion

It is obvious from the research that psoriasis negatively impacts the quality of life of those suffering from this incurable disease. Those who consider themselves to have more severe disease feel they are more negatively affected by psoriasis compared to those who have mild psoriasis. Psoriasis can make even the simplest activities of daily living, including sleeping and walking, more difficult. Psoriasis affects the way those with the disease interact with the general public. Individuals with psoriasis are more likely to cover up their lesions and avoid going to places were their lesions will be exposed. Psoriasis increases the risk of depression, anxiety, alcoholism and other psychological illnesses. Psoriasis causes those affected to have a negative self-image, viewing themselves as unattractive and dirty. It causes significant disability which can make functioning at the workplace very difficult, causing patients with psoriasis to miss more work days and have higher unemployment rates. Psoriasis also has a negative impact on the most intimate relationship one can have with their partner, sexual intercourse. Psoriasis clearly affects every aspect of the lives of its victims.

Physician assistants (PAs) need to be aware that these effects on quality of life exist and be able to communicate with their patients suffering from psoriasis about their health-related quality of life. PAs need to pay particular attention to patients with more severe psoriasis, younger patients, and females with psoriasis, as these patients experience more impact on quality of life. PAs also need to extend their treatment beyond the treatment of skin lesions to the treatment of mental health, physical health, and sexual functioning.

Physician assistants need to ask whether or not patients feel as if the treatments they are currently using are clearing their psoriasis. Psoriasis needs to be treated aggressively to improve quality of life. The more control patients feel over their psoriasis, the less likely psoriasis will
negatively impact their quality of life. If psoriasis is controlled well, then the amount of
disability will decrease. This in turn allows for less interference in the workplace, translating
into less financial stress. The more well-controlled the psoriasis is, the less likely it will cause
sexual impairment. Sexual impairment should be recognized in psoriasis patients and should be
treated promptly to improve quality of life.

The fact that psoriasis patients have higher rates of depression means it is very important
for the PA to screen for a range of behavior disorders in all patients with psoriasis on a regular
basis. Effective treatment of depression should improve quality of life. PAs also need to
understand that patients with psoriasis feel stigmatized by their community, causing low self-
esteeem. It is important to counsel these patients and recommend support groups in order to help
them not feel isolated. Patient education is a very important aspect of treating psoriasis. One
study showed that those patients who demonstrated a better understanding of their disease had a
better quality of life (Jankowiak et al., 2005). PAs can direct their patients to the National
Psoriasis Foundation’s website, www.psoriasis.org. The website contains educational
information about the disease and its treatment options, as well as where patients can find
support groups in their community.

Although much research has been conducted in the field of quality of life and psoriasis,
there is still room for further studies. Much of the current research was conducted in Europe,
making it difficult to generalize results to patients in the United States. Much of the current
research used patients who were either hospitalized or receiving treatment in another type of
tertiary care clinic. Patients who are hospitalized or receiving other specialized care are going to
feel more strongly about how psoriasis impacts their daily lives. More research needs to be
conducted in patients with mild disease. The same type of questionnaires could be used to
determine quality of life, depression/suicidal ideation, self-image/stigmatization, impact at work, and sexual function. It is important to determine the amount of impact mild psoriasis has on quality of life to guide providers in the treatment of these patients.

A majority of the current research focused on plaque-type psoriasis, ignoring the four other types of psoriasis. Further research must be conducted exploring the impact the different types of psoriasis have on quality of life, including a study that differentiates which class of psoriasis negatively impacts quality of life the most. If researchers could obtain questionnaire results from each of the five different classes of psoriasis (plaque, guttate, inverse, pustular, and erythrodermic) and determine which type of psoriasis impacts the quality of life the greatest, then health care providers would have the knowledge to screen and treat patients of that specific type of psoriasis more aggressively. Researchers could then become more specific and conduct studies comparing which type of psoriasis causes more depression or suicidal ideation, which type causes poorer self-image, which type requires the patient to take more time off work, etc.

This paper addresses the importance and need for all health care providers to further investigate the quality of life and mental health of their patients diagnosed with psoriasis. By providing the best treatment to control psoriasis, health care providers are not only improving the physical appearance of the patients’ skin, but also delving under the skin to improve self-esteem, self-confidence, and overall quality of life.
References


Table 1. *Major categories of psoriasis treatment* (Wolff, 2005)

<table>
<thead>
<tr>
<th>Mild Psoriasis</th>
<th>Moderate - Severe Psoriasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topical Corticosteroids</td>
<td>Narrow-band UVB phototherapy</td>
</tr>
<tr>
<td>Betamethasone valerate</td>
<td>Oral PUVA photochemotherapy</td>
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<tr>
<td>Fluocinolone acetonide</td>
<td>Oral retinoids</td>
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<td>Acitretin</td>
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<td>Clobetasol propionate</td>
<td>Isotretinoin</td>
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<td>Topical anthralin</td>
<td>Methotrexate</td>
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<td>Cyclosporine</td>
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<tr>
<td>Calcipotriene</td>
<td>Biologic Drugs</td>
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<td>Alefacept</td>
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<td></td>
<td>Adalimumab</td>
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<td>Infliximab</td>
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<td>Entanercept</td>
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<table>
<thead>
<tr>
<th>Activity</th>
<th>18 – 34 years (n = 1918)</th>
<th>35 – 54 years (n = 6625)</th>
<th>≥ 55 years (n = 8891)</th>
</tr>
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<tbody>
<tr>
<td>Interacting in workplace</td>
<td>18</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Interacting with family/spouse</td>
<td>15</td>
<td>13</td>
<td>8</td>
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<tr>
<td>Making/keeping friends</td>
<td>15</td>
<td>11</td>
<td>7</td>
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<tr>
<td>Excluded from public facility</td>
<td>7</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Getting a job</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>Contemplated suicide</td>
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<td>7</td>
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Table 3. *Activities of daily living that are negatively affected by psoriasis in the mail survey.*

<table>
<thead>
<tr>
<th>Activity</th>
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<th>35 – 54 years (n = 6625)</th>
<th>≥ 55 years (n = 8891)</th>
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</thead>
<tbody>
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<td>Sleeping</td>
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<td>22</td>
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<tr>
<td>Sexual activities</td>
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<td>27</td>
<td>13</td>
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<tr>
<td>Using hands</td>
<td>8</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Walking</td>
<td>7</td>
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<td>14</td>
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<tr>
<td>Sitting for long periods</td>
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<td>Standing for long periods</td>
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<td>Performing job duties</td>
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<td>12</td>
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</table>
Abstract

**Objective.** Psoriasis is a debilitating cutaneous disease that affects almost 3% of the United States population. This paper reviews the impact of psoriasis on quality of life. **Method.** A MEDLINE search was completed using the terms “quality of life,” “psoriasis,” “psoriasis and depression,” and “psoriasis and self-concept.” Articles that discussed treatment options and specific medications to treat psoriasis were excluded. **Results.** Psoriasis significantly negatively impacts quality of life, negatively impacts self-image, decreases productivity in the workplace, and negatively affects sexual functioning. Patients with psoriasis have increased rates of depression, suicidal ideation, and psychological distress. Younger patients, females, and those with severe disease experience more impact on their quality of life. **Conclusion.** Physician assistants need to be aware of the effect psoriasis has on the mental health and quality of life of their patients and should screen for health related quality of life and depression in this patient population.