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Original paper

STUDY ON THE IMPACT OF PSORIASIS ON QUALITY OF LIFE: PSYCHOLOGICAL, SOCIAL AND FINANCIAL IMPLICATIONS

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SUMMARY

Background: *Psoriasis is a chronic and stigmatising disease with significant and hard to meet clinical needs in patient management. Psoriasis is a relatively common disease, affecting up to 2% of the population. The impact of psoriasis on quality of life is significant given its chronicity and visibility. Psychological stress is a well-established systemic triggering factor in psoriasis. It has been associated with initial presentation of the disease as well as exacerbations of pre-existing psoriasis. The purpose of this study is to assess the psychological, social and financial implications of psoriasis.*

Subjects and methods: *51 patients participated in this study. After dermatological examination and determination of Psoriasis Area and Severity Index score, patients were referred to a psychological consult. Assessment was done through questionnaires concerning quality of life, depression, anxiety, illness perception, financial domain and personal data.*

Results: *Results of our study indicate that psoriasis has a strong impact on patients' life. It influences working habits, poses a significant financial burden, but most of all, significantly impairs their quality of life and psychological status.*

Conclusion: *Psoriasis poses a substantial threat to several dimensions in patient's quality of life. Patients feel that the current treatment, although often effective, does not provide a satisfactory long-term solution. Thus, long-term psychologic support for patients with psoriasis is desirable.*

Key words: *psoriasis - quality of life - illness perception - anxiety - depression*

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INTRODUCTION

Psoriasis is a complex, inflammatory, long term chronic disease involving interaction of genetic predisposetion, environment, altered immunological functions, and psychological influences (Kerkhof et al. 2008). Psoriasis is probably one of the longest-known and at the same time, most misjudged illnesses in humans. In recent times psoriasis was frequently perceived as a variety of leprosy. The most common clinical variant of psoriasis vulgaris is chronic plaque psoriasis, which is characterized by sharply demarcated and erythematous papulosquamous lesions on the scalp, elbows, knees and presacral area (Walsh et al. 2004).

Clinical symptoms of psoriasis are presented as itching, pain and scaling and are associated with increased disease severity, reduced quality of life and work productivity (Korman et al. 2015). Guidelines for treating psoriasis include – as the first line - topical therapy and non-biologic systemic agents (metotrexat, aprelimast, cyclosporine) and as second line biological therapy (Nast et al 2012). Psoriasis can manifest at any age, from infancy to the eight decade of life. According to the World Health Organization (WHO) data, about 3% of the global population has psoriasis, (Golpour et al. 2012, Villanova et al. 2013).

Moderate to severe psoriasis is associated with a dose – dependent risk for metabolic and cardiovascular disease (Hägg et al. 2017), cancer development and other chronic and debilitating diseases (Møller et al. 2015, Bhutani et al. 2013). Psoriasis has recently been classified into a group of psychosomatic diseases, with stress as a major well-known trigger (Buljan et al. 2008a). Increased incidence of psoriasis and posttraumatic stress disorder (PTSD) was noticed during the War in Croatia (1990-1996) (Šitum 2003). Psoriasis is accompanied by substantial physical, psychological, social and financial distress, which does not necessarily correlate to the extent of the disease. People with greater disease severity are more prone to think about the chronicity of the disease, its negative consequences and its emotional impact (Wahl et al. 2014).

Many dermatological conditions, that influence cosmetic disfigurements, including psoriasis, can be associated with significant psychiatric morbidity (Gupta 2005). Psoriasis patients report that the severity of disease has a strong impact on their health-related quality of life (HRQoL) and work productivity (Hamzavi et al. 2017), especially because of its chronic relapsing nature (Fink et al. 2017). Comparing psoriasis patients′ quality of life with hidradenitis suppurativa (HS), HS patients have higher HRQoL. It is well known that patients suffering from psoriasis are in increased risk for depressive symptoms (Strober et al. 2018). Numerous studies have demonstrated high rates of depression among psoriatic patients, regardless of psoriasis severity (Cohen et al. 2016). Psoriasis is also linked to social interaction and audience anxiety, as well as to poor sleep quality. The quality of life among psoriatic patients is not just affected by "psychological handicappe" but also with physical symptoms. The physical appearance of psoriasis lesions has a negative impact on patients′ self-esteem, making them feel stigmatised, embarrassed, disabled in profession and compromising their quality of life (Gupta & Gupta 2000, Kouris et al. 2017, Schneider et al. 2013, Rabin et al. 2012, Augustin & Radtke 2014). As a result, they change their lifestyle. They are more prone to obesity (Dediol et al. 2009). Both cardiovascular comorbidities and lifestyle factors are associated with persisting moderate to severe psoriasis (Sobchak et al. 2017). In a study of coronary heart disease by Aalto et al., those with a more severe illness reported stronger illness identity, weaker belief in the controllability of the disease, more severe consequences due to the disease and a longer chronic timeline (Aalto et al. 2005).

Feelings of shame and guilt lead to suicidal thoughts (Kouris et al. 2017). Psoriasis patients are more prone to alcohol abuse, smoking and use of sedatives, antidepressants and tranquilizers. More severe the disease is, more mentally affected patients are, and their mental health also aggravates clinical symptoms which leads to vicious circle difficult to manage (Kouris et al. 2017). Mentally affected patients are more resistant to medical treatment, non-compliant, which leads to prolonged and expensive treatment (Kouris et al. 2017). The illness perception paradigm has demonstrated that the way patients think about their illness, the cognitive model they develop about their illness can influence their experience and their emotional reaction which is very important for their health outcome (Buljan & Vurnek Živković 2008b). However, patients' understanding of the illness is limited and support lacking. The understanding of the illness helps patients′ to cope with it. For that reason, high quality, theory-based psoriasis materials are desirable and useful in improving patients′ understanding of psoriasis and reducing their anxiety (Nelson et al. 2017).

Aim of this survey is to evaluate the psychological, social and financial implications of psoriasis. Quality of life, anxiety, depression and illness perception in patients with psoriasis have been assessed.

SUBJECTS AND METHODS

This study was approved by the Ethics Committee of the University Hospital Center «Sestre milosrdnice», Zagreb, where the study was conducted from February until August 2017. This was an open prospective study including 51 patients, with varying demographics and severity of psoriasis, representing the range of hospital-based outpatient population.

We interviewed 83 patients of whom 51 fulfilled the inclusion criteria, being patients of either sex, aged 18 to 65 years, with conclusive diagnosis of psoriasis; managed by topical, phototherapy or combined treatment; with ability to give informed consent. Pregnant or lactating women and patients with associated disease were excluded. During one of the regular follow-ups, patients were invited to participate in the study. Consenting participants completed the following standardized psychological questionnaires: Subjective Quality of Life (SQoL), Dermatology-Specific Quality of Life (DSQL), Brief Illness Perceptions Questionnaire (brief IPQ), Back Depression Inventor (BDI) and State-Trait Anxiety Inventory (STAI).

SQoL scale is a Likert-type scale, measuring satisfaction in life ("How satisfied are you with your life as a whole?") where 1 represents complete dissatisfaction and 5 represents complete satisfaction (Cummins 2003).

DSQL is a questionnaire designed by Rajagopalan, aimed to address the effects of skin disease and its treatment on physical and social functioning and self- perception (Kivelevitch 2017). It assesses 5 dimensions of quality of life: condition of the skin, personal choice, behaviour, social aspect and psychological aspect of QoL. It is scored on a 5-point Likert scale from 0, indicated never, to 4 indicating all of the time/almost always. Despite DSQI/DLQI is commonly used for psoriatic patients, there is no gold standard for the QoL assessment (Anderson 1997).

Brief IPQ is a questionnaire designed by Broadbent, Petrie, Main and Weinman is a nine–item, self-administered questionnaire designed to rapidly assess cognitive and emotional representations of illness, with good reliability and validity (Broadbent 2006). It is a quantitative questionnaire scored on a scale from 0 to 10, with exception of one qualitative question which requires patients to list three possible causes of their illness.

BDI is a clinical and research instrument, widely used to assess depressive symptoms, developed by A. T. Beck in 1961, revised in 1996 (Beck et al. 1961). It is a 21 item self-report rating (inventory measuring) characteristic attitudes and symptoms of depression. Scores ranges from 0 to 63, with higher scores indicating a higher level of depression. Scores over 30 indicate a clinical depressive disorder.

STAI is an original questionnaire for measuring state (STAIs) and trait (STAIt) anxiety (Spielberg et al. 1983). It consists of two questionnaires with 20 statements. State anxiety estimates tension, anxiety and stress. Trait anxiety measures the degree of anxiety as a relatively stable personal characteristic and long-lasting anxiety, unrelated to the specific situations. Score on each of questionnaires is given on a 5-point Likert scale. Minimum result is 0, and maximum is 80.

Patients also filled out our internal questionnaire, designed at our Clinic for the purpose of this study. That questionnaire included questions concerning personal data, disease history, current treatment of psoriasis and associated symptoms such as pain and pruritus and their everyday problems. Financial domain included questions concerning the patients' overall perception of their financial situation, medication-related expenses, and treatment-related transportation issues. Ability to work, absenteeism from work due to psoriasis, and amount of help required in psoriasis care were assessed.

All questionnaires were administered by a psychologist and patients were examined by dermatologist who determined their Psoriasis Area and Severity Index (PASI) scores.

Statistical Analysis

Statistical analyses were calculated using SPSS 12.0 statistical package. Descriptive statistics for all used measures and Pearson's correlation coefficient were calculated. Student's *t* test was used to draw simple comparisons, subsequently confirmed with a more appropriate nonparametric test: The Spearman rank correlation test.

RESULTS

Fifty-one (51) patients, 23 male and 28 female, suffering from psoriasis participated in this study. Participants were 18 to 65 years old, with the mean age being 40 years. The duration of illness ranged from 1 to 45 years, with the average duration of 16 years. Topical therapy was applied in 49% of cases, phototherapy was used in 16% of patients with moderate disease and combined regimen was used in 35% of patients with more severe disease. Dermatological examination was used to determine PASI scores which ranged from 3.6 to 34 with average score 17.85. Demographic data and medical history data are shown in Table 1 and Table 2.

Patients with psoriasis are at risk for absenteeism from school and work. Out of 47% of patients employed at the time of the interview, 59.3% reported absence from work in the preceding year because of their psoriasis. Of the unemployed or retired patients, 33.9% attributed their employment status to their condition. Patients perceived criticism for taking time off work or school to seek medical attention and were more afraid of job loss.

76% of patients felt as their financial situation was adversely affected by psoriasis. Expenses included costs of medical care, time lost from work, cost of topical preparations, and transportation fees.

81% of patients spent up to 10 hours per week on skin care, while the rest of the patients spent even more time on this activity. There was a strong correlation between time spent on skin care and feelings of anger and resentment (p<0.01). 41% of patients were living alone.

Table 1. Demographic data of patients

	Number of patients	%
Gender		
Female	28	55
Male	23	45
Marital status		
Married	19	37
Single	21	41
Widowed	5	10
Divorced	6	12
Work status		
Employed	24	47
Retired	15	29
Students	6	12
Unemployed	6	12
Education		
Elementary	5	10
Secondary	26	51
Vocational	11	21
Higher	9	18

Table 2. Medical history of patients with psoriasis

	Number of patients	(%)
Duration of the disease		
Less than 3 years	6	12
Between 3 and 5 years	4	8
Between 6 and 10 years	19	37
More than 10 years	22	43
Number of hospitalisations		
Less than 5 times	23	45
5 times or more	23	45
Never	5	10
Family history		
Positive	10	20
Negative	41	80

Our study suggested that up to 88% of patients believe that psychological distress is a factor in manifestation of psoriasis and have experienced some emotional stress before the onset of skin disease.

Using SQoL questionnaire, average quality of life of our patients (evaluated on a scale from 1 to 5) was 3.14, somewhat lower than the quality of life in the general population at 3.75. Other dimensions of SQoL are shown in Table 3.

Satisfaction with health was 2.8, thus indicating patients were neither satisfied nor dissatisfied with their health. This result is expected since psoriasis is not a life-threatening disease, but still has a strong impact on a patient's life. In our study, patients showed lowest results in psychological aspects of quality of life, followed by the social aspect in terms of general satisfaction with support from family and friends. In our survey, 56.8% of patients reported that psoriasis had a significant influence on their sexual life, resulting in reduced sexual potency, while 36% of patients reported impaired emotional attachment with their partner.

Table 3. Descriptive statistics for Subjective Quality of Life scale

Dimensions of QoL	N	Minimum	Maximum	Mean	Std. Deviation
Aspect of health	51	1	5	*2.80*	0.980
Physical aspect	51	1.00	4.71	*2.99*	0.973
Psychological aspect	51	1.33	4.33	*2.83*	0.901
Enviroment's factors	51	1.50	4.38	*2.86*	0.861
Social aspect	51	1.67	5.00	*3.10*	0.825

Table 4. Descriptive statistics for 5 dimensions of DQoL

DSQL	N	Minimum	Maximum	Mean	Std. Deviation
Condition of the skin	51	0.46	4.00	*1.97*	0.713
Personal choice	49	0.20	4.00	*1.86*	1.052
Behavior	43	0.40	4.00	*2.05*	1.248
Social aspect	37	0.14	4.00	*1.84*	1.294
Psychological aspect	48	0.20	4.00	*2.32*	1.269

Table 5. Descriptive statistics for STAI and BDI questionnaire

	N	Minimum	Maximum	Mean	Std. Deviation
STAI - state	51	23	73	*51.84*	14.610
STAI - trait	51	27	73	*52.35*	12.604
BDI	48	4	30	*18.52*	7.635

Table 6. Descriptive statistics for IPQ

IPQ	N	Minimum	Maximum	*Mean*	Std. Deviation
Consequence of illness	51	2	10	*6.88*	2.762
Duration of illness	51	1	10	*9.16*	1.994
Control	36	1	10	*3.56*	2.568
Treatment	47	1	10	*4.96*	2.702
Symptoms	50	1	10	*6.98*	2.699
Worry	51	2	10	*7.33*	2.636
Understanding	49	1	10	*5.08*	2.999
Emotional reaction	51	0	10	*6.88*	2.991

Results from the DSQL questionnaire show that psoriasis has mild influence on patient's QoL (Table 4).

Patients were relatively satisfied with their condition of the skin. Their illness had a mild influence on their personal choice of make-up, clothes, shaving, hair style, nutrition or sport activity. Relative influence is exerted on their behaviour at work or school, as well as their efficacy and punctuality. Social activities were mildly affected by psoriasis, while the greatest impact is shown on psychological aspect of QoL.

Average results of STAI and STAT were 51.84 and 52.35, respectively, which is significantly higher with respect to the general population (28 on average) (Table 5). Our results indicate that patients with psoriasis suffered from severe anxiety.

The average result of BDI was 18.52 which is significantly higher with respect to the general population (8 on average). Our results indicate that patients with psoriasis suffered from moderate depression.

Perception of illness was evaluated using brief IPQ, scored from 1 to 10 (Table 6).

Psoriasis has a great influence on patients' lives. Patients believe psoriasis is going to last for a long time. They don't understand their illness well, which leaves a strong emotional impact.

There was no statistically significant correlation between age, gender, level of education and quality of life. There was also no statistically significant correlation between age, gender, level of education and illness perception.

PASI scores negatively correlated with health satisfaction - higher PASI score was associated with lower health satisfaction (r=-0.32). Higher PASI score correlated with stronger influence of illness on the choice of food, drinks, clothing, make-up, and hair style (r=0.57). Higher PASI score negatively influenced social behaviour (r=0.46) and had a significant impact on psychological aspect of quality of life in patients with psoriasis (r=0.41). Significant positive correlations were shown between PASI score and perception of illness-related consequences (r=0.30), perception of symptoms (r=0.42), concern about the illness (r=0.31) and emotional representation (r=0.35). Also, higher PASI score correlated with stronger anxiety (current and in general) and depression (r=0.33, r=0.35, r=0.35).

Illness duration negatively correlated with subjective quality of life (r=-0.29) - quality of life decreases with illness duration. Longer illness duration was associated with poorer physical aspects of the quality of live (r=-0.31), with worse general appearance of skin (r=0.35) and stronger influence on the choice of food, drinks, clothing, make-up, and hair style (r=0.34). No correlation was found between illness duration and illness perception except perception of symptoms – the longer illness duration strongly influenced experience of their symptoms (r=0.34) and positively correlated with anxiety and depression (r=0.44, r=38).

DISCUSSION

Impact of psoriasis on patients' quality of life is profound and has been well-documented in the scientific literature (Misery et al. 2008, Hong et al. 2008, Choi & Koo 2003, DeKorte et al. 2005). One-half of patients with psoriasis, women more often than men, reported a significant change in their quality of life (Çakmur & Derviş 2015, Palota et al. 2010, Kyriakou et al. 2014). A European consensus report suggests that patients with psoriasis are both undertreated and underserved (Mrowietz et al. 2011). According to the results of this survey, psoriasis has a significant influence on various dimensions in patients' quality of life. Seeking psychological or psychiatric help is still unpopular in the Republic of Croatia, resulting in significant undertreatment.

According to Gupta et al., patients considered the general appearance of their skin to be the worst aspect of having psoriasis; which is consistent with results from our survey (Gupta & Gupta 2000). Pruritus was the second most distressing physical symptom in our patients with psoriasis. Reported prevalence of pruritus in psoriasis is ≤ 85% (Kerkhof et al. 2008). More intensive pruritus was associated with increased severity of depression reported by Devrimci-Ozguven et al. (2000). In our survey, patients with psoriasis are more anxious than the general population and suffer from moderate depression which is *in accordance with study on psoriasis by Schmitt* (Schmitt 2007). Reviews show increased rates of comorbid mental disorders, especially anxiety and depression, in addition to a range of psychosocial problems, such as poor self-esteem, social stigmatization, social rejection physical limitations, sexual dysfunction, and suicidal ideations (Choi & Koo 2003, Griffiths & Richards 2001, Kimball et al. 2005, Russo et al. 2004, Kouris et al. 2015, Augustin et al. 2008, Lin et al. 2011). Localization of lesions on parts of body difficult to hide by clothing (back of hands) is related to higher stigmatization levels. Stigmatization is the strongest predictor of quality of life impairment (Hawro et al. 2017). Pain, itching and visibility of psoriatic plaques may lead to embarrassment, social discomfort and anxiety that ultimately places patients at a higher risk for depression and anxiety (Bronckers et al. 2015, Akay 2002). In Kouris et al. study women psoriatic patient reported higher levels of depression (2017). In Hgg survey, women showed lower median PASI scores than men in all areas of the body, except for the head, which is the fact that can explain the dominance of males in systemic treatment of psoriasis (2017). The risk for mental disorders is higher in younger patients for whom physical appearance plays a significant role in life (Kouris et al. 2017).

We suggest that specific problems in everyday life and altered quality of life of patients with psoriasis may induce anxiety and depression. This is supported by biological data; Langerhans cells (LCs), specialized antigen-presenting cells that sample epidermal and dermal antigens and generating immune response, are intimately associated with nerve fibers, which through the release of neuropeptide mediators, such as calcitonin gene-related peptide (CGRP), can modulate LCs function. LCs are important in the initial stage of psoriasis (Boulais & Misery 2008).

Psoriasis has often been associated with myths surrounding lack of hygiene and contagion. Time spent on personal care (more than 10 hours) also had a significant emotional effect on patients, correlating strongly with anger. Inexpensive, simple-to-use treatments that do not require frequent modifications should be used whenever possible (Smith & Baker 2006).

Patients with psoriasis are at risk for absenteeism from school and work. Out of 47% of patients employed at the time of the interview, 59.3% reported absence from work in the preceding year because of their psoriasis. According to Kawalec et al., the mean number of days off work was 2.88 days per month and mean on-the-job productivity loss was 24.1%. Total indirect costs were negatively correlated with utility (2016).

36% of subjects experienced instances of social rejection, mostly while at the beach, or at hairdressers. Patients tended to avoid interpersonal situations or public places where they might encounter rejection. They may feel humiliated when exposing their bodies; while swimming or using public showers, or living in conditions that do not offer adequate privacy (Ginsburg & Link 1993). Most of the patients who reported exacerbated episodes precipitated by stress described disease-related stress resulting from cosmetic disfigurement and the social stigma of psoriasis (Griffiths & Barker 2004).

Sexual life of more than half of our patients was negatively affected. Sampogna et al. have also found that sexual enjoyment and sexual activities were negatively affected by psoriasis (2007). According Krueger et al. 81% patients have reported feeling embarrassment and shame, whereas 75% reported feeling physically unattractive or sexually undesirable (2001). Psychological aspect of the illness regarding sexual behaviour represents a very important segment in patient counselling, thus health care providers should be more aware of this issue.

For everyday clinical practice, it is very important to assess the impact of disease severity on quality of life (QOL), respectively comparing the association between PASI and QOL. It appeared that PASI has a large impact on QOL among Swedish population (Geale et al. 2017), so routine collection of QOL/DLQI should be encouraged. On the other hand, Garcia- Sánchez et al. showed that quality of life is independent of the degree of disease in patients with psoriasis (2017).

However, psoriasis affecting special regions – nails, genital regions and scalp can affect patients′ QOL in a greater extend and is also, very resistant to treatment. Biologics (secucinumab) reduces scalp pain, itching and scaling and improves patients′ QOL (Feldman et al. 2017).

Psoriasis patient are also very often unsatisfied with traditional medical treatments and try to find better therapeutical options for themselves – alternative treatments and dietary supplements – folic acid, fish oil, herbs, vitamin E. No significant differences in PASI and DLQI were found among patients with consumption of different supplements (Yousefzadeh et al. 2017).

Although this research did not include patients on biologic therapy, other researches showed the differences between the biologics, phototherapy and topical therapy in terms of DLQI score change. Patients with moderate to severe chronic plaque psoriasis treated with biologics show the greatest reduction in DLQI score (Strober et al. 2018, Norris et al. 2017). After one year of treatment, biologics are superior in improving the subjective disease burden compared to conventional therapy (Jungo et al. 2016). Patients also show poor adherence to topical therapy only which leads to poor treatment outcomes (Caldarola et al. 2017). Combination therapy (topical and systemic) is more effective and notes a significant improvement in QOL in comparison to topical therapy only (Karamata et al. 2017). Nevertheless, if patient is on topical therapy only, individualized medication training and 20 minutes of doctor′s time dedicated to a patient improves patients′ adherence and clinical outcomes (Caldarola et al. 2017).

Since epidemiologic data of psoriasis remains poorly documented, it is impossible to predict the national costs imposed by this chronic disease. The financial burden of psoriasis appears to be substantial, both to the patients and their families. 87% of our patients claimed to pay approximately 34% of their average personal income for the cost of care. Considering the inadequacies of average income to cover the expenses of a consumer basket reported by the Croatian Independent Unions (average salary for June 2017 covers only 69.11% of the consumer expenses in Croatia, whilst more than 40% of the income is consumed on food alone) it is obvious how financially burdened patients who suffer from psoriasis are, which makes their disease even more difficult to endure, and more prone to social exclusion on the basis of social status. Also, according to our study, psoriasis appears to severely affect participation in the work environment. Out of 47% of patients employed at the time of the interview, 59.3% reported absence from work in the preceding year due to their psoriasis. This fact brings additional threat to the financial and social status of patients. Other recent studies have also confirmed that expenses of medical treatment of psoriasis are very high and add up to the stress-factor of the disease (Hong et al. 2008, Schmitt & Ford 2006).

Patients in our study show moderate understanding of their disease, which only intensifies their emotional problems. This indicates that more information should be available to the patients, perhaps through special educational training courses during hospitalization. Nevertheless, in the past decades we witness a better prevention of chronic diseases as a result of developed medical network and organisation (Sprangersa et al. 2000). Stigmatization is defined as having a discrediting mark that leads to social discrimination and alienation (Hrehorów et al. 2012).

The majority of patients expressed pessimism with regard to their ultimate prognosis (Koo 2000). The possible explanation may lie in the fact that mean duration of the psoriasis in our patients was 16 years. Treatment of psoriasis is long-lasting, with frequent recurrences and demands lots of patience and personal control (Lebwohl & Callen 2006). In recent decades, studies have shed light on patients’ subjective experiences of medical diseases and their impact on patient’s life, as captured by the construct of health-related quality of life (Rapley 2003). The extreme importance of personality factors, namely optimism versus pessimism is widely accepted.

CONCLUSION

In our survey, the majority of psoriatic patients indicated serious impairment in their quality of life, with feeling that the current treatments, although often effective, do not provide a satisfactory long-term solution. Thus, long-term psychological support for patients with psoriasis is desirable, especially if we take into consideration that emotional distress is a likely to become the trigger for mental health hazards such as depression and suicidal thoughts.

Emotional and social consequences are greatest for economically deprived individuals, who already bear the burden of difference and discrimination. Therefore, education and psychological interventions need to be more recognized and prioritized as public health needs in order to help patients cope with their illness more effectively. Psoriatic patients should be assessed from a holistic point of view, in order to identify associated disorders that could benefit from targeted treatments. The collaboration between the dermatologists, psychiatrics and psychologists is fundamental for addressing this issue.

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Contribution of individual authors:

Vedrana Bulat: conceived and developed the study design, collected and analyzed the data and wrote the manuscript.

Mirna Šitum: supervised development of the study design and analyzed the data.

Marija Delaš Aždajić: contributed to literature review and to the interpretation of the results.

Ivana Lovrić: helped with theoretical background of the study.

Iva Dediol: contributed to the development of the study design and statistical analysis.

All authors contributed to manuscript drafts, provided comments, read and approved the final version.

References

1. *Aalto AM, Heijmans M, Weinman J & Aro AR: Illness perceptions in coronary heart disease. Sociodemographic, illness-related, and psychosocial correlates. J Psychosom Res 2005; 58:393–402*
2. *Akay A, Pekcanlar A, Bozdag KE, Altintas L & Karaman A: Assessment of depression in subjects with psoriasis vulgaris and lichen planus. J Eur Acad Dermatol Venereol 2002; 16:347-52*
3. *Anderson RT & Rajagopolan R: Development and validation of a quality of life instruments for cutaneous disease. J Am Acad Dermatol 1997; 37:41-50*
4. *Augustin M, Krüger K, Radtke MA, Schwippl I & Reich K: Disease severity, quality of life and health care in plaque type psoriasis: a multicenter cross-sectional study in German. Dermatology 2008; 216:366–72*
5. *Augustin M & Radtke MA: Quality of life in psoriasis patients, Expert Review of Pharmacoeconomics & Outcomes Research 2014; 14:559-68*
6. *Beck AT, Ward CH & Mendelson M: An inventory for measuring depression. Arch Gen Psychiatry 1961; 1:569-71*
7. *Bhutani T, Patel T, Koo B, Nguyen T, Hong J & Koo J: A prospective, interventional assessment of psoriasis quality of life using a nonskin-specific validated instrument that allows comparison with other major medical conditions. J Am Acad Dermatol 2013; 69:79-88*
8. *Broadbent E, Petrie KJ & Main J: The Brief Illness Perception Questionnaire. J Psychosom Res 2006; 60:631-7*
9. *Bronckers IM, Paller AS, van Geel MJ, van de Kerkhof PC & Seyger MM: Psoriasis in children and adolescents: diagnosis, management and comorbidities. Paediatr Drugs 2015; 17:373-84*
10. *Boulais N & Misery L: The epidermis: a sensory tissue. Eur J Dermatol 2008; 18:119-27*
11. *Buljan D, Buljan M, Vurnek Živković M: Brief aspects of psyhodermatology. Psychiatr Danub 2008a; 20:415-8*
12. *Buljan M & Vurnek Živković M: Suočavanje s kroničnom bolešću kože; čimbenici koji utječu na individualnu prilagodbu. In Buljan D, Šitum M, Buljan M, Vurnek Živković M, (eds): Psihodermatologija. 55-62. Naklada Slap, 2008b*
13. *Caldarola G, De Simone C, Moretta G, Poscia A & Peris K: Role of personalized medication training in improving efficacy and adherence to a topical therapy in psoriatic patients. J Dermatolog Treat 2017; 28:722-5*
14. *Choi J & Koo J: Quality of life issues in psoriasis. J Am Acad Dermatol 2003; 49:57-61*
15. *Cohen BE, Martires KJ & Ho RS: Psoriasis and the risk of depression in the US population: National Health and Nutrition Examination Survey 2009–2012. JAMA Dermatol 2016; 152:73–9*
16. *Cummins RA: Normative life satisfaction: Measurement issues and a homeostatic model. Soc Indicat Res 2003; 64:225-56*
17. *Çakmur H & Derviş E: The relationship between quality of life and the severity of psoriasis in Turkey. Eur J Dermatol 2015; 25:169-76*
18. *Dediol I, Buljan M & Buljan D: Association of psoriasis and alcoholism: psychodermatological issue. Psychiatr Danub 2009; 21:9-13*
19. *DeKorte J, Sprangers MA & Mombers FM: Quality of life in patients with psoriasis: a systemic literature review. J Investig Dermatol Symp Proc 2005; 9:140-7*
20. *Devrimci-Ozguven H, Kundakci TN & Kundakci TN: The depression, anxiety, life satisfaction and affective depression levels in psoriasis patients. J Eur Acad Dermatol Venereol 2000; 14:267-71*
21. *Feldman SR, Green L, Kimball AB, Siu K, Zhao Y, Herrera V et al.: Secukinumab improves scalp pain, itching, scaling and quality of life in patients with moderate-to-severe scalp psoriasis. J Dermatolog Treat 2017; 28:716-21*
22. *Fink C, Schank TE, Trenkler N, Uhlmann L & Schäkel K: Quality of life, treatment satisfaction and efficacy of non-biological systemic therapies in patients with plaque psoriasis: study protocol for a prospective observational study. BMJ Open 2017; 7*
23. *García-Sánchez L, Montiel-Jarquín ÁJ, Vázquez-Cruz E, May-Salazar A, Gutiérrez-Gabriel I & Loría-Castellanoso J: Quality of life in patients with psoriasis. Gac Med Mex 2017; 153:185-9*
24. *Geale K, Henriksson M & Schmitt-Egenolf M: How is disease severity associated with quality of life in psoriasis patients? Evidence from a longitudinal population-based study in Sweden. Health Qual Life Outcomes 2017; 15:151*
25. *Ginsburg IH & Link BG: Psychosocial consequences of rejection and stigma feelings in psoriasis patients. Int J Dermatol 1993; 32:587–91*
26. *Golpour M, Hosseini S & Khademloo M: Depression and anxiety disorders among patients with psoriasis: a hospital-based case–control study. Dermatol Res Pract 2012 ;2012:381905*

27. *Griffiths CEM & Barker RDR: Psoriasis. In Burns T, Breathnach S, Cox N & Griffiths C (eds): Rook/Wilkinsum/Ebling Text book of dermatology. Oxford: Blackwell Science, 2004*
28. *Griffiths CEM & Richards HL: Psychological influences in psoriasis. Clin Exp Dermatol 2001; 26:338-42*
29. *Gupta MA: Psychiatric comorbidity in dermatological disorders. In Walker C & Papadopoulos L (eds): Psychodermatology: The Psychological Impact of Skin Disorders. 29-43. Cambridge: Cambridge University Press, 2005*
30. *Gupta MA & Gupta AK: Quality of life of psoriasis patients. J Eur Acad Dermatol Venereol 2000; 14:241-2*
31. *Hägg D, Sundström A, Eriksson M & Schmitt-Egenolf M: Severity of Psoriasis Differs Between Men and Women: A Study of the Clinical Outcome Measure Psoriasis Area and Severity Index (PASI) in 5438 Swedish Register Patients. Am J Clin Dermatol 2017; 18:583-90*
32. *Hamzavi IH, Sundaram M, Nicholson C, Zivkovic M, Parks-Miller A, Lee J et al.: Uncovering burden disparity: A comparative analysis of the impact of moderate-to-severe psoriasis and hidradenitis suppurativa. J Am Acad Dermatol 2017; 77:1038-46*
33. *Hawro M, Maurer M, Weller K, Maleszka R, Zalewska-Janowska A, Kaszuba A et al.: Lesions on the back of hands and female gender predispose to stigmatization in patients with psoriasis. J Am Acad Dermatol 2017; 76:648-54*
34. *Hrehorów E, Salomon J, Matusiak L, Reich A & Szepietowski JC: Patients with psoriasis feel stigmatized. Acta Derm Venereol 2012; 92:67-72*
35. *Hong J, Koo B & Koo J: The psychosocial and occupational impact of chronic skin disease. Dermatol Ther 2008; 21:54-9*
36. *Jungo P, Maul JT, Djamei V, von Felten S, Kolios AGA, Czernielewsk J et al.: Superiority in Quality of Life Improvement of Biologics over Conventional Systemic Drugs in a Swiss Real-Life Psoriasis Registry. Dermatology 2016; 232:655-63*
37. *Karamata VV, Gandhi AM, Patel PP, Sutaria A & Desai MK: A study of the use of drugs in patients suffering from psoriasis and their impact on quality of life. Indian J Pharmacol 2017; 49:84-8*
38. *Kawalec P, Malinowski KP & Pilc A: Disease activity, quality of life and indirect costs of psoriatic arthritis in Poland.Rheumatol Int 2016; 36:1223-30*
39. *Kerkhof CM, Schalkwijk J: Psoriasis. In Bolognia JL, Jorizzo JL & Rapini RP (eds): Dermatology. 115-35. New Haven: Mosby Elsevier, 2008*
40. *Kimball AB, Jacobson C, Weiss S, Vreeland MG & Wu Y: The psychosocial burden of psoriasis. Am J Clin Dermatol 2005; 6:383–92*
41. *Kivelevitch D, Michel P & Menter A: Quality of life instruments in psoriasis clinical trials. Br J Dermatol 2017; 176:563*
42. *Koo J: Psychodermatology in the 21st century. Curr Probl Dermatol 2000; 12:93-4*
43. *Korman NJ, Zhao Y, Pike J, Roberts J & Sullivan E: Increased severity of itching, pain, and scaling in psoriasis patients is associated with increased disease severity, reduced quality of life, and reduced work productivity. Dermatol Online J 2015; 21pii: 13030/qt1x16v3dg*
44. *Kouris A, Christodoulou C, Stefanaki C, Livaditis M, Tsatovidou R, Kouskoukis C et al.: Quality of life and psychosocial aspects in Greek patients with psoriasis: a cross-sectional study. An Bras Dermatol 2015; 90:841-5*
45. *Kouris A, Platsidaki E, Kouskoukis C & Christodoulou C: Psychological parameters of psoriasis. Psychiatriki 2017; 28:54-9*
46. *Krueger G, Koo J, Lebwohl M, Menter A, Stern RS & Rolstad T: The impact of psoriasis on quality of life: results of a 1998 National Psoriasis Foundation patient–membership survey. Arch Dermatol 2001; 137:280-4*
47. *Kyriakou A, Patsatsi A & Sotiriadis D: Quality of life and severity of skin and nail involvement in patients with plaque psoriasis. Eur J Dermatol 2014; 24:623-5*
48. *Lebwohl M & Callen JP: Obesity, smoking and psoriasis. JAMA 2006; 295:208-10*
49. *Lin TY, See LC, Shen YM, Liang CY, Chang HN & Lin YK: Quality of life in patients with psoriasis in Northern Taiwan. Chang Gung Med J 2011; 34:186–96*
50. *Misery L, Thomas L & Jullien D: Comparative study of stress and quality of life in outpatients consulting for different dermatoses in 5 academic departments of dermatology. Eur J Dermatol 2008; 18:412-5*
51. *Mrowietz U, Kragballe K, Reich K, Spuls P, Griffiths CEM, Nast A et al.: Definition of treatment goals for moderate to severe psoriasis: a European consensus. Arch Dermatol Res 2011; 303:1–10*
52. *Møller AH, Erntoft S, Vinding GR & Jemec GB: A systematic literature review to compare quality of life in psoriasis with other chronic diseases using EQ-5D-derived utility values. Patient Relat Outcome Meas 2015; 6:167-77*
53. *Nast A, Boehncke WH, Mrowietz U, Ockenfels HM, Philipp S, Reich K. et al.: Guidelines on the treatment of psoriasis vulgaris J Dtsch Dermatol Ges 2012; 10(Suppl 2):1-95*
54. *Nelson PA, Kane K, Pearce CJ, Bundy C, Chisholm A, Hilton R et al.: 'New to me': changing patient understanding of psoriasis and identifying mechanisms of change. The Pso Well® patient materials mixed-methods feasibility study. Br J Dermatol 2017; 177:758-70*
55. *Norris D, Photiou L, Tacey M, Dolianitis C, Varigos G, Foley P et al.: Biologics and dermatology life quality index (DLQI) in the Australasian psoriasis population. J Dermatolog Treat 2017; 28:731-6*
56. *Palota T, Szepietowski JC & Pec J: A survey of disease severity, quality of life, and treatment patterns of biologically naive patients with psoriasis in central and Eastern Europe. Acta Dermatovenerol Croat 2010; 18:151-61*
57. *Rabin F, Bhuiyan SI, Islam T, Haque MA & Islam MA: Psychiatric and psychological comorbidities in patients with psoriasis - A review. Mymensingh Med J 2012; 21:780–6*
58. *Rapley M: Quality of life research – a critical introduction. London: SAGE Publishers, 2003*
59. *Russo PAJ, Ilchef R & Cooper AJ: Psychiatric morbidity in psoriasis: a review. Australas J Dermatol 2004; 45:155–61*
60. *Sampogna F, Gisondi P & Tabolli S: Impairment of sexual life in patients with psoriasis. Dermatology 2007; 214:144-50*
61. *Schneider G, Heuft G & Hockmann J: Determinants of social anxiety and social avoidance in psoriasis outpatients. J Eur Acad Dermatol Venereol 2013; 27:383–6*

62. *Schmitt J & Ford DE: Understanding the relationship between objective disease severity, psoriatic symptoms, illness-related stress, health-related quality of life and depressive symptoms in patients with psoriasis- a structural equations modeling approach. Gen Hosp Psychiatry 2007; 29:134-40*
63. *Schmitt JM & Ford DE: Work limitations and productivity loss are associated with health-related quality of life but not with clinical severity in patients with psoriasis. Dermatology 2006; 213:102-10*
64. *Smith CH & Baker JNWN: Psoriasis and its management. BMJ 2006; 333:380-4*
65. *Sobchak C & Eder L: Cardiometabolic Disorders in Psoriatic Disease. Curr Rheumatol Rep 2017; 19:63*
66. *Spielberg CD, Gorsuch RL & Lushene RV: Manual for State-Trait Anxiety Inventory (Form Y). Palo Alto: Consulting Psychologist Press, 1983*
67. *Sprangersa MAG, de Regta EB, Andriesb F, van Agtc HME, Bijld RV, de Boere JB et al.: Which chronic conditions are associated with better or poorer quality of life? J Clin Epidemiol 2000; 53:895–907*
68. *Strober B, Gooderham M, de Jong EMGJ, Kimball AB, Langley RG, Lackdawala N et al.: Depressive symptoms, depression, and the effect of biologic therapy among patients in Psoriasis Longitudinal Assessment and Registry (PSOLAR). J Am Acad Dermatol 2018; 78:70-80*
69. *Šitum M: Physician in war Dermatology in War: our scars. CMJ 2003; 44:242-3*
70. *Villanova F, Di Meglio P & Nestle FO: Biomarkers in psoriasis and psoriatic arthritis. Ann Rheum Dis 2013; 72(Suppl 2):104-10*
71. *Wahl AK, Robinson HS, Langeland E, Larsen MH, Krogstad AL & Moum T: Clinical characteristics associated with illness perception in psoriasis. Acta Derm Venereol 2014; 94:271-5*
72. *Walsh RA & Shear NH: Psoriasis and the new biologic agents: interrupting a T-AP dance. CMAJ 2004; 170:1933-44*
73. *Yousefzadeh H, Mahmoudi M, Banihashemi M, Rastin M & Azad FJ: Investigation of dietary supplements prevalence as complementary therapy: Comparison between hospitalized psoriasis patients and non-psoriasis patients, correlation with disease severity and quality of life. Complement Ther Med 2017; 33:65-71*

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