

Quality of life of psoriatic patients – modulatory variables

MARTA MARIA GAWLIK^{1, E, F}, BARBARA TOPCZEWSKA^{2, A-D}, DONATA KURPAS^{1, 3, C-G}

¹ Opole Medical School

² Voivodeship Specialist Hospital in Wrocław, Research and Development Centre

³ Department of Family Medicine, Medical University of Wrocław

A – Study Design, **B** – Data Collection, **C** – Statistical Analysis, **D** – Data Interpretation, **E** – Manuscript Preparation, **F** – Literature Search, **G** – Funds Collection

Summary Background. In recent years, there has been increasing interest in the quality of life (QoL) of patients with dermatological conditions. The problem of the stigma associated with some dermatological conditions has been discerned, as patients suffering from chronic dermatoses tend to perceive themselves in a specific way and to assess their QoL as very low.

Objectives. Identification of factors that influence the QoL of patients with psoriasis.

Material and methods. This survey-based quantitative research was carried out at the dermatology ward of the Voivodeship Specialist Hospital, Research and Development Centre in Wrocław, Poland. The study involved 130 adult patients with a diagnosis of psoriasis, of whom 56.92% (74) were women. The research instruments used were the Dermatology Life Quality Index (DLQI), the Hospital Anxiety and Depression Scale (HADS), and a questionnaire of the authors' own design.

Results. The median for disappearance of psoriatic patches after hospitalization was 5 (range: 0–10). The median for the remission duration was 3 months (range: 0.25 to 24). 61.54% (80) of those surveyed reported improvement in their psoriasis treatment as a result of regular check-ups at the outpatient dermatology clinic. Disease-related anxiety and QoL were determined by marital status and the level of education. Older patients more often had symptoms of depression, according to HADS. Higher DLQI scores correlated with higher HADS-A and HADS-D scores.

Conclusions. Psoriasis has significant effects on patients' mental states and social functioning. The most serious and unpleasant symptoms are pruritus and skin lesions on the uncovered parts of the body. The patients with the highest risk of a lower QoL are the elderly; those living alone (single or widowed); those with secondary, vocational, or no education; and those with symptoms of anxiety or depression.

Key words: psoriasis, anxiety, quality of life.

Fam Med Prim Care Rev 2016; 18(3): 235–240

Background

Psoriasis is a chronic disease and requires long-term treatment. New methods and biological agents are systematically being introduced to therapy, however complete remission and improvement are difficult to attain. Full recovery has remained so far elusive, and the best outcome achievable is a period of remission, whose length depends on the individual [1]. As the disease progresses, psoriatic patients go through stages of resignation, dejection, anger, and a lack of hope of recovery [2]. The type of dermatological disease is a factor that not only determines the occurrence of depression, but also its severity. The most serious depressive disorders (including a high risk of suicide) are observed among patients with psoriasis covering large skin areas. Extensive lesions and those located in parts of the body that are important for self-image may significantly contribute to the development of depression [3]. Patients with psoriasis are often diagnosed with depressive disorders, which in extreme cases can even lead to suicide attempts [4]. Skin diseases influence three domains of patient functioning: psychological (anxiety, depression, hostility, social sensitivity, feeling of coherence, obsessive-compulsive disorder, altered self-image), somatic (limitations on physical functioning, discomfort, worsening of general health), and social contact (limitations on professional activity, lack of social support groups, satisfaction with therapy, difficulties carrying out social roles) [5].

Psoriasis affects all races, though epidemiological studies show it to be more common in Western Europe and Scandinavia, where it is observed in 1.5–3% of the population (especially in Norway – 4.8%). It hardly ever afflicts black people, and is practically never met in Eskimo and Amerindian populations. The incidence of psoriasis is the same for both sexes and is unrelated to social background, level of education, financial standing, or profession [6].

Researchers dealing with psoriatic patients have made attempts to identify variables that potentially contribute to quality of life (QoL). These variables are mainly associated with the disease itself (severity of pathological lesions, their location and extent, duration of the disease), personality (stress resistance, level of anxiety, depression), and demographic variables (age and sex) [5].

Although psoriasis does not pose a direct threat to life (a fact which often causes patients to neglect treatment), studies of QoL with chronic dermatoses confirm that, in this sense, they can be compared with cardiovascular and respiratory diseases [6]. Regardless severity, everyone copes with the disease in a different way, and so dermatology questionnaires used in measuring the QoL of psoriatic patients [7]. Recent years have seen an increasing interest in the QoL of patients with dermatological conditions. The problem of stigmatization in dermatology has also been observed, as patients suffering from chronic dermatoses tend to perceive themselves in a specific way and to assess their QoL as very low [8].

Dermatoses are very visible diseases which can provoke others to stare and comment. This, in combination with the



chronic character of dermatological disorders, often causes patients to suffer from poor self-esteem and the thought of being negatively perceived by others; they may also not accept either the disease or themselves [9]. Psoriatic patients often have skin lesions in exposed places. This has an impact on their social life and is an additional source of stress that negatively affects treatment of both the primary disease and its comorbidities. According to the literature, it is not the extent of skin lesions that contributes most to the effects of the psoriasis therapy, but the lowering of the QoL level [10]. The QoL is thus assessed in patients who are being qualified to new methods of treatment. Drops in QoL are mostly associated with the humiliation suffered by patients, with everyday unpleasant situations, and with the resulting stress. Patients come to avoid taking part in social life [11]. A worsening of patients' QoL is also linked to chronic pruritus [12]. Considering its nature, psoriasis requires a holistic and patient-tailored approach from the therapeutic team.

Research on the QoL of patients with psoriasis confirms that this disease noticeably impedes patients' functioning in all aspects of life and is a source of discomfort and distress for sufferers [13].

Objectives

The aim of this study was to identify the factors that influence the QoL of psoriatic patients, including sociodemographic data (age, education, and marital status).

Material and methods

This survey-based quantitative research was carried out between July 2014 and January 2015 in the dermatology ward of the Voivodeship Specialist Hospital, Research and Development Centre in Wrocław. The research was approved by the Bioethical Commission of Wrocław Medical University (approval no. KB-432/2014, 3 July 2014).

Study sample

The study involved 130 adult patients with a diagnosis of psoriasis, of which 74 (56.92%) were women. Participation was voluntary and anonymous. The mean age was 50.57 years (SD 14.75). The most numerous age group was the 51–65 year olds (34.62%, 45) and the least numerous was that of 36–50 year olds (33.08%, 43). Patients of 35 years or younger made up 15.38% (20) of the study sample. Most respondents (59.23%, 77) were married, 19.23% (25) were single, and those living in cohabitation relationships made up 5.39% (7). The majority of the respondents (58.46%, 76) had secondary education, 20.77% (27) had higher education, and 12.31% (16) had primary education.

Research instruments

The research instruments applied in the study were the Dermatology Life Quality Index (DLQI), the Hospital Anxiety and Depression Scale (HADS), and a questionnaire of the authors' own design.

The standard dermatology-specific questionnaire, the DLQI, consists of 10 questions. It is used to measure the severity of psoriasis and to assess how much the disease affected QoL over the last week. In our study, the Polish version of the DLQI was employed. The scoring of each question is as follows: 3 points: very much; 2 points: a lot; 1 point: a little; 0 points: not at all. The total score reflects the impact of psoriasis on the patient's life as follows: 0–1 points: normal QoL (no effect at all on patient's life); 2–5 points: slightly lower QoL (small effect on patient's life); 6–10 points: moderately lower QoL (moderate effect on patient's life); 11–20 points: much

lower QoL (very large effect on patient's life); 21–30 points: extremely lower QoL (extremely large effect on patient's life).

HADS consists of 14 questions and measures anxiety (HADS-A) and depression (HADS-D). Each item on the questionnaire is scored from 0–3, which means that a person can score a total of 0 to 21 for either anxiety or depression. For anxiety (HADS-A), this gives a specificity of 0.78 and a sensitivity of 0.9. For depression (HADS-D), the specificity is 0.79 and the sensitivity 0.83.

The authors' questionnaire included 37 questions concerning patients' sociodemographic data, frequency of hospitalization, visits to the outpatient dermatology clinic, physical complaints, and factors lowering patients' QoL – such as pruritus, pain, burning sensations, inability to perform everyday activities due to psoriatic lesions, the influence of lesions on work, relations in the family, and social life. The patients were asked about feelings of embarrassment due to the disease and about itching sensations. They marked their answers on a scale from 0 to 10, where 0 denoted a complete lack of embarrassment due to the disease, or no itching sensation; while 10 denoted very deep embarrassment due to the disease, or severe itching. When answering questions concerning the severity of psoriasis, the respondents marked their answers on the scale from 0 to 10, with 0 denoting the lack of improvement, and 10 indicating complete remission.

Statistical analysis

The data was analyzed using R statistical software and PSP version 3.0.2. The variable distribution was verified by means of the Shapiro–Wilk normality test. The Mann–Whitney *U*-test was employed to compare two subgroups. The correlation analysis was based on the calculation and testing of Spearman's rank correlation coefficient (ρ). Additionally, the Bartlett test, analysis of variance (ANOVA), and the Kruskal–Wallis test (for when the character of the variables did not allow for ANOVA) were used.

Results

In the study sample, the median number of years since diagnosis was 11.5 years (range: 0.25–59). The median for disappearance of psoriatic patches after hospitalization was 5 (range: 0–10). The median for the duration of remission was three months (range: 0.25 to 24).

Improvement in the therapy of psoriasis as a result of regular check-ups in the outpatient dermatology clinic was positively assessed by 61.54% (80) of the surveyed, while 38.46% (50) did not report any noticeable improvement.

Psoriatic lesions were mostly found in elbow areas 55.38% (72). The next most common sites were the trunk (50.00%, 65) and scalp (48.46%, 63). Patients with lesions on their limbs made up 35.38% (46) of the sample. Psoriasis all over the body was observed in 7.69% (10) of all respondents.

The median value for pruritus severity was 5.5 (range: 0–10). Very serious pruritus-related complaints were reported by 16.15% (21) of the surveyed, while 10.77% (14) did not have such complaints at all. The median for burning sensation was 5.0 (range: 0–10), with the strongest level being reported by 8.46% (11) of the respondents, and no burning sensation being reported by 18.46% (24).

There were statistically significant differences in the assessment of the severity of psoriasis between patients with various levels of education (Kruskal–Wallis test: $\chi^2 = 9.794$; $df = 3$; $p = 0.020$). The medians of the responses for particular groups were: 6: primary or no education; 8: vocational education; 10: secondary education; and 8: higher education. The patients who perceived their psoriasis as most severe were those with secondary, vocational, or higher education, while the patients who judged their psoriasis to be least severe were patients with primary or no education.

Of all respondents, 85.38% (111) remained under the continuous care of a physician, while 14.62% (19) were not under a physician's care. Some 78.46% (102) of the respondents had regular check-ups in the outpatient dermatology clinic, while 21.54% (28) did not. 76.15% (99) of the patients were under the care of a dermatologist, and 18.46% (24) were only under the care of a family doctor.

The majority of the patients confirmed that close friends and family members helped them take care of their skin (82.31%, 107). Most patients were assisted by wives, husbands, or partners (56.92%, 74), while 15.38% (20) received help from their children.

In spite of skin lesions, 99% (129) of the patients felt accepted by members of their immediate families. Only one person had not met with such acceptance.

We analyzed incidences of psoriasis among patients' family members, and found that the most numerous class of patients consisted of those whose close relatives did not have psoriasis (54.62%, 71). In 18.46% (24) of cases, psoriasis was diagnosed in at least one parent, while in 15.38% (20) it was diagnosed in at least one brother or sister.

Most respondents (71.53%, 94) claimed that psoriasis had a profound influence on their mental state, while 28.42% (36) held the opinion that it did not have an effect on their psyche. The most common reaction of people to skin lesions, according to the patients, was looking or staring at them (54.62%, 71). Some 23.85% (31) of those surveyed met with acceptance, while 8.46% (11) met with negative reactions or even disgust.

The median of responses to the question on the level of embarrassment due to the disease when being around other people was 6 (range: 0–10). The disease had a strong negative impact on the social life of 67.69% (88) of the respondents, while 32.31% (42) of the patients did not have such a problem. Psoriatic skin lesions had significant effects on the everyday functioning of 60% (78) of the patients, while 40% (52) did not feel such effects. According to 72.31% (86) of those surveyed, the disease did not have any influence on the choice of profession, while 27.69% (36) indicated that it had.

DLQI scores

The median of the scores was 9 (range: 0–26). A moderately lower QoL level (moderate effect on the patient's life) was reported by 35.39% (46) of the patients, a much lower QoL level (a very large effect on the patient's life) by 28.46% (37), a slightly lower QoL (a small effect on the patient's life) by 20.00% (26), and an extremely lower QoL level (an extremely large effect on the patient's life) by 10.00% (13). Merely 6.15%

(8) of the patients had a normal QoL level, meaning that the condition had no effect at all on the patient's life.

There were statistically significant differences in the assessment of the influence of psoriasis on the QoL between patients with different marital statuses (Kruskal–Wallis test: $\chi^2 = 10.411$; $df = 3$; $p = 0.034$). The medians of the responses for specific groups were as follows: 12 for single, 8 for married, 8 for widowed, 6 for divorced, and 9 for other types of relationship. Thus, the impact of psoriasis was the most profound in single individuals.

The DLQI scores depended neither on the patients' sex (Mann–Whitney *U*-test: $W = 2341$; $p = 0.206$) nor their place of residence (Kruskal–Wallis test: $\chi^2 = 2.5521$; $df = 3$; $p = 0.466$).

HADS scores

The median of the scores was 9 (range: 0–27); the median for HADS-A was 6.5 (range: 0–21), while the median for HADS-D was 6 (range: 0–17).

Sex did not have a statistically significant impact on HADS-D scores (Mann–Whitney *U*-test: $W = 2065$; $p = 0.976$). Quite the opposite was true for patients' age: older patients more often had symptoms of depression than younger patients. The older the patients were, the higher the HADS-D scores they obtained ($r = 0.197$; $p = 0.025$).

There were statistically significant differences in anxiety levels depending on marital status (Kruskal–Wallis test: $\chi^2 = 12.486$; $df = 4$; $p = 0.014$). The medians of the responses for the groups were as follows: 8 (single), 6 (married), 8 (widowed), 0 (divorced), 5 (other types of relationship). Patients who complained of anxiety were mostly either single or widowed (Fig. 1).

There were also statistically significant differences in anxiety levels depending on the level of education (Kruskal–Wallis test: $\chi^2 = 9.411$; $df = 3$; $p = 0.024$). The medians of the responses for particular groups were 7 (for primary or no education), 4 (for vocational education), 7 (for secondary education), and 5 (for higher education). Anxiety was thus mostly observed in patients with secondary, primary, or no education, while those with vocational or higher education suffered from anxiety less often.

There were statistically significant differences in the severity of depressive symptoms depending on marital status (ANOVA results: $F = 3.474$; $df1 = 4$; $df2 = 125$; $p = 0.010$). The medians of the responses for particular groups were: 7 (single), 6 (married), 8 (widowed), 2 (divorced), and 3 (other types of relationship). Patients who complained of depression were mostly widowed, followed by single individuals (Fig. 2).

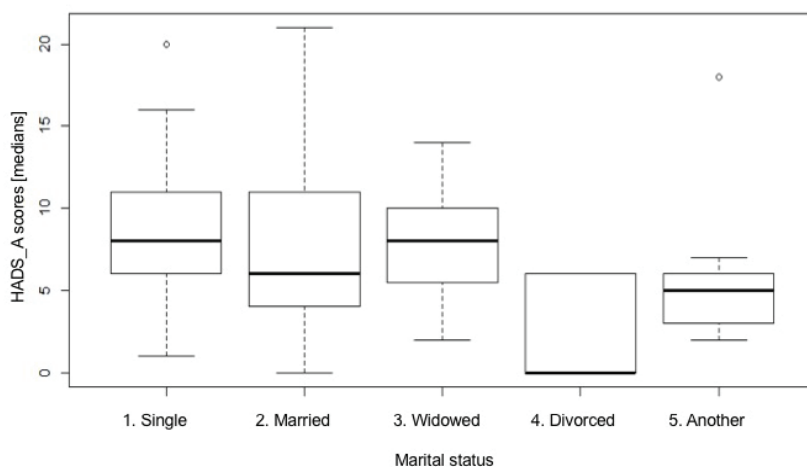


Figure 1. Differences in anxiety levels depending on marital status

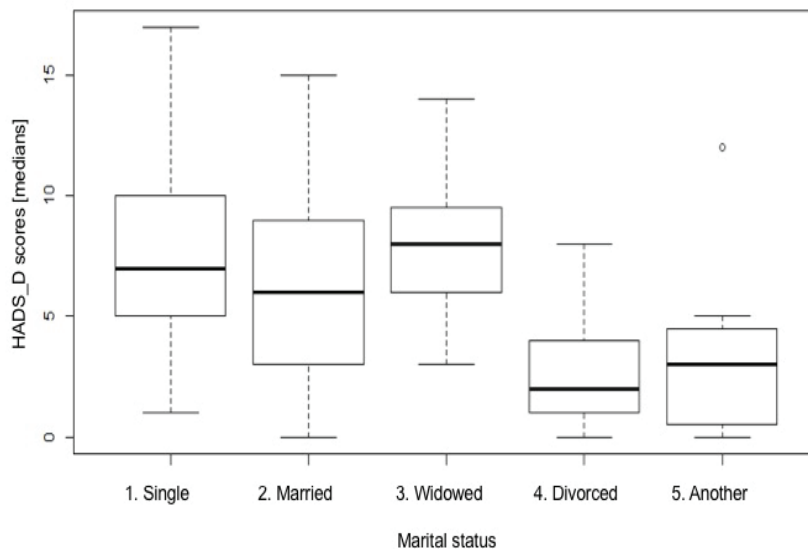


Figure 2. HADS-D scores depending on marital status

The DLQI scores vs. HADS scores

There were statistically significant relationships between the DLQI and HADS-A scores ($r = 0.467$; $p < 0.001$) and between the DLQI and HADS-D scores ($r = 0.569$; $p < 0.001$). Thus, higher DLQI scores correlated with higher HADS-A and HADS-D scores.

Discussion

Both the available literature and our analysis show that psoriasis has considerable effects on the QoL of patients and on their functioning at home and in society. We observed that the more profound the influence psoriasis exerted on particular aspects of everyday life, the higher the probability of a low QoL and the development of depressive symptoms. Depression and anxiety, on the other hand, may lead to a further worsening of the QoL. Kanikowska et al. reported that over half of the respondents in their study described the impact of psoriasis on their everyday functioning as strong [14]. Only 8% of patients see no negative effects of psoriasis on their lives. Patients suffering from more advanced forms of the disease and experiencing more severe physical complaints have decidedly worse physical and mental states [15]. Deterioration of everyday mood, on the other hand, results in a lower QoL and higher frequency of depressive symptoms [16].

A pilot study conducted at the Clinic of Dermatology, Central Clinical Hospital, Ministry of the Interior, Warsaw and at the Clinic of Psychiatry, Medical University of Warsaw demonstrated that the coexistence of psychiatric disorders is a clinical problem for many patients with skin diseases. Mental disorders were diagnosed in 64% of outpatients with psoriasis and 25% of those with other chronic dermatoses [17]. This is consistent with the results of Wessely and Levis [18], who observed mild psychiatric disorders in 40% of patients at the Clinic of Dermatology.

The clinical observations of patients with psoriasis point to the role of stress. It has been demonstrated that weak but chronic stress may have greater effects on the course of the disease than a single very stressful event. In the study of Kanikowska et al., women experienced stronger stress in everyday functioning than men, even though the latter had more severe forms of the disease [14].

In our study, the majority of patients did not notice any negative impact of the disease on relationships with their

immediate family and more distant relatives. Only a few received negative disease-related feedback from other people. Other authors confirmed that the negative influence of psoriasis on QoL was associated with stress, especially when psoriatic patches developed at puberty or early adulthood. People with psoriasis often regard themselves as less attractive and may decide to withdraw from social contact, feeling humiliated and stigmatized by others. This is a stress factor that directly impinges on psychological maturity and personality type. About half of patients perceive the disease as a very serious stress factor, one fifth consider themselves to be socially isolated, 10–12% endure humiliation from their relatives, and approximately 7% are not accepted as sexual partners [7, 19].

The main inconvenience reported by psoriatic patients is pruritus [9]. Although, in the past, psoriasis was regarded as not accompanied by pruritus, it is assumed now that 70–90% of patients experience severe itching that at least 30% have it all over the body. Patients consider pruritus as the most irritating and unpleasant symptom. It causes patients trouble falling asleep and results in them waking up frequently throughout the night. Chronic pruritus negatively affects patients' psyche. Those suffering from itching have lower self-esteem and thus more often feel aggression and frustration [8]. Gupta believes that the intensity of itching is related to the severity of depressive disorders, and pruritus can be significantly alleviated by antidepressant treatment [20].

Skin lesions – especially those located on uncovered parts of the body – draw the attention of other people, often evoking unhelpful reactions. Negative self-image of the body, the feeling of being stigmatized by the surrounding community, and the lack of hope of full recovery may be the source of mental disorders. The study of Richards et al., who analyzed the relationships between stigmatization, stress, and the worse daily functioning of psoriatic patients, confirmed that patients were indeed stigmatized by the disease. They also had significantly higher levels of stress due to expected adverse reactions, and statistically significantly, many suffered from psychiatric disorders [21].

Our analysis shows that most respondents obtained improvement to their symptoms through regular check-ups at the outpatient dermatology clinic. The majority of inpatients at the dermatology ward reported a visible improvement and a decrease in psoriatic skin lesions after hospital treatment, but the complete disappearance of skin lesions was very rare.

Taking into account the duration of the disease, its frequent recurrences, and short remission periods, we can see

that patients admitted to the dermatology ward have very advanced lesions or inveterate psoriasis. This may be associated with the cost of treatment, but may also be due to patients not being able to cope with the care demanded by the afflicted skin areas, or else they live alone. In the study sample, the longest remission period for psoriatic lesions (24 months) was only observed in a small proportion of patients, as was remission lasting for over six months.

Our findings show that elderly psoriatic patients suffer more often from depression than younger patients. Baranowska et al., on the other hand, demonstrated a relationship between the understanding of the disease and functioning in everyday life. In their study, the least discomfort from disease was experienced by patients of over 60 years of age. Professionally active individuals had a decreased feeling of coherence between the understanding of the disease and functioning in everyday life [8].

The majority of the respondents in our study reported moderate and very large effects of psoriasis on their QoL. Similar results were obtained in the assessment of satisfaction with their life performed at the Clinic of Dermatology and Venereology of the Medical University of Wrocław, where psoriatic patients' satisfaction with their life, according to the Satisfaction with Life Scale, ranged from 9 to 31 points (average: 19.2 ± 6.0 points), and was significantly lower than in the control group (range of 9–33 points, average score: 22.0 ± 5.3 points). The study conducted in this Clinic demonstrated a weak but significant correlation between the severity of psoriatic lesions and satisfaction with life ($r = -0.25$; $p = 0.02$). Aside from the severity of psoriatic lesions, financial standing was the only of the investigated parameters that influenced the level of satisfaction with life of psoriatic patients. Age, sex, education, marital status, a penchant for abusing substances, and susceptibility to addictions were not significant contributors [22]. The study of Bundy et al. provided evidence that younger individuals assess their QoL better, regardless of their sex, education, and marital status [16]. In our study, the QoL of psoriatic patients did not depend on their sex, but was determined by their education and marital status.

Source of funding: This work was founded by funds allocated to the statutory activities of the Department of Family Medicine Medical University in Wrocław and by the authors' resources.

Conflict of interest: The authors declare no conflict of interests.

References

- Jabłońska S, Chorzelski T. Łuszczycza. In: Jaworska E, ed. *Choroby skóry*. Warszawa: Wydawnictwo Lekarskie PZWL; 1997: 214–228.
- Barańska-Rybak W, Nowicki R, Jakuszkowiak K, et al. Psychodermatologia – nowa dziedzina medycyny. *Przew Lek* 2005; 8(1): 50–55.
- Gupta MA, Gupta AK. Depression and suicidal ideation in dermatology patients with acne, alopecia, atopic dermatitis and psoriasis. *Br J Dermatol* 1998; 139(5): 846–850.
- Burgdorf WHC, Plewig G, Wolff HH, et al. *Dermatologia Braun-Falco*. T. 1–3. Lublin: Wydawnictwo Czelej; 2011.
- Adamski Z, Linke K, Samborski W. *Leczenie biologiczne w dermatologii, gastroenterologii i reumatologii*. Poznań: Termedia; 2010: 63–107.
- Park R. Psoriasis. Emedicine 2005 [cited 01.12.2015]. Available from URL: <http://www.emedicine.com/emerg/topic489.htm>.
- Luty-Frąckiewicz A. Czynniki środowiskowe wpływające na ujawnienie i przebieg łuszczycy. *Prz Dermatol* 2000; 87(2): 169–172.
- Baranowska A, Krajewska-Kułak E, Szyszko-Perłowska A, et al. Problemy jakości życia w dermatologii. *Probl Pielęg* 2011; 19(1): 109–115.
- Szepietowski J, Pacan P, Reich A, et al. *Psychodermatologia*. Wrocław: Akademia Medyczna; 2012.
- Kowzan-Korman A. Łuszczycza – etiologia i znaczenie. *Now Lek* 2003; 72(3): 223–227.
- Szepietowski J, Reich A. *Świad. Patomechanizm, klinika, leczenie*. Poznań: Termedia; 2010.
- Baranowski K. *Problematyka jakości życia w chorobach dermatologicznych*. In: Steuden S, Okła W, eds. *Jakość życia w chorobie*. Lublin: Wydawnictwo KUL; 2006: 49–52.
- Żelazny I, Nowicki R, Majkowiak M, et al. Jakość życia w chorobach skóry. *Przew Lek* 2004; 7(9): 60–65.
- Kanikowska H, Michalak M, Pawlaczek M. Zastosowanie oceny jakości życia chorych na łuszczycę w praktyce lekarskiej. *Now Lek* 2008; 77(3): 195–203.

On the basis of genetic tests performed at the Clinic of Dermatology and Allergology, Medical University of Gdańsk, it is estimated that the risk of psoriasis in a person who has a family history of this disease is 41% if both parents are affected, and 14% if only one parent is afflicted [23]. What is more, family psoriasis is more common among patients who suffer onset of the disease in young age [24]. The above observations were not confirmed in our study, due to the small size of the study sample.

Limitations

Because of the small size of the study sample, our analysis failed to take into account the division of psoriasis into its clinical forms and the severity of psoriatic lesions. It would be worth considering the two basic clinical forms of psoriasis: mild (*psoriasis vulgaris*) and severe (*psoriasis erythroderma*) in any further research into the QoL of psoriatic patients, since there may be significant differences in QoL levels as measured by HADS between these two groups.

It would be also interesting to analyze modulatory variables, such as disease stage, type of the treatment (corticosteroids for local treatment or biological agents), and character and extent of nail-plate damage. These variables may influence HADS scores or the QoL level of patients with psoriatic lesions.

Calculation of the Psoriasis Area and Severity Index (PASI) and comparison of two groups of patients with the same value of the severity index will allow us to determine the QoL of psoriatic patients with greater accuracy.

Conclusions

Psoriasis has significant effects on patients' mental state and social functioning. The most serious and unpleasant symptoms are pruritus and skin lesions on uncovered parts of the body. The patients at the highest risk of decreased QoL are the elderly; those living alone (single or widowed); those with secondary, vocational, or no education; and those with symptoms of anxiety or depression.

15. Kaszuba A. *Dermatologia pediatryczna. Diagnostyka i leczenie*. Wrocław: Elsevier Urban & Partner; 2007.
16. Bundy C, Borthwick M, McAteer H, et al. Psoriasis: snapshots of the unspoken: using novel methods to explore patients' personal models of psoriasis and the impact on well-being. *Br J Dermatol* 2014 [cited 14.11.2014]. Available from URL: <http://www.termedia.pl/dermatologia/W-jaki-sposob-luszczycy-wplywa-na-zycie-chorujacych-na-nia-pacjentow-,15109.html>.
17. Parafianowicz K, Sicińska J, Moran A, et al. Współwystępowanie zaburzeń psychicznych w łuszczycy: doniesienie wstępne. *Psychiatr Pol* 2010; 44(1): 119–126.
18. Wessely SC, Levis GH. The classification of psychiatric morbidity in attendees at a dermatology clinic. *Br J Psychiatry* 1989; 155: 686–691.
19. Łoza K, Borzęcki A, Cielica W, et al. Zaburzenia psychosomatyczne w przebiegu łuszczycy [cited 06.03.2016]. Available from URL: <http://www.luszczycalublin.republika.pl/file/publikacje/psychosom.html>.
20. Gupta MA, Schork NJ, Gupta AK. Pruritus in psoriasis. A prospective study of some psychiatric and dermatologic correlates. *Arch Dermatol* 1988; 124(7): 1052–1057.
21. Richards HL, Fortune DG, Griffiths CEM, et al. The contribution of perception of stigmatization to disability in patients with psoriasis. *J Psychosom Res* 2001; 50(1): 11–15.
22. Małek D, Pełka M, Reich A. Ocena satysfakcji z życia wśród chorych na łuszczycę. Forum Młodych Polskiego Towarzystwa Dermatologicznego. *Prz Dermatol* 2014; 101(5): 367–368.
23. Szczerkowska-Dobosz A, Rębała K. Genetyka łuszczycy – od badań serologicznych antygenów zgodności tkankowej do badań asocjacyjnych całego genomu. *Prz Dermatol* 2011; 98(5): 377–383.
24. Szepietowski J, Reich A. *Leczenie chorób skóry i chorób przenoszonych drogą płciową*. Warszawa: Wydawnictwo Lekarskie PZWL; 2008.

Address for correspondence:

Marta Gawlik, MSc
Państwowa Medyczna Wyższa Szkoła Zawodowa
ul. Katowicka 68
45-060 Opole
Polska
Tel: +48 781 957-268
E-mail: gawlikm@wsm.opole.pl

Received: 29.03.2016

Revised: 30.03.2016

Accepted: 09.04.2016