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Original Research Article

Associations of the quality of life and psychoemotional state with sociodemographic factors in patients with psoriasis

Renata Petraškienė^{a,*}, Skaidra Valiukevičienė^b, Jūratė Macijauskienė^c

^a Department of Nursing and Care, Faculty of Nursing, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania ^b Department of Skin and Venereal Diseases, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania ^c Department of Geriatrics, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania

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ABSTRACT

Objective: The aim of this study was to evaluate the interrelationships between the quality of life and psycho-emotional, demographic, and clinical factors in patients with psoriasis. *Materials and methods:* The study included 18-year-old or older patients with psoriasis recruited from the university hospital (n = 385). Their sociodemographic data, Psoriasis Area and Severity Index score and disease duration were assessed. The quality of life was evaluated by using the Dermatology Life Quality Index. Depression and anxiety were assessed using the Hospital Anxiety and Depression scale.

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Results: A severe change in the quality of life (DLQI \geq 10 points) was found by 1.8 times more commonly in females, by 2.7 times more commonly in patients with moderate and severe psoriasis (PASI \leq 10) than in those with a mild psoriasis (PASI \leq 10), and by about 2 times more commonly in patients with nail psoriasis than in those without, as well as in patients with psoriasis-related anxiety or depression than in subjects without those symptoms. Anxiety and depression were observed in 37.4% and 23.4% of the patients, respectively. Depression was more frequent in patients older than 55 years than in those <35 years of age. Anxiety was more frequent in females and in the respondents with primary and unfinished secondary education.

Conclusions: One-half of patients with psoriasis, women more often than men, regardless of the severity of the disease, reported a significant change in their quality of life. Patients with psoriasis, especially women and older people (aged more than 55 years), experienced anxiety and symptoms of depression.

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* Corresponding author at: Department of Nursing and Care, Faculty of Nursing, Medical Academy, Lithuanian University of Health Sciences, Eivenių 2, 50161 Kaunas, Lithuania.

E-mail address: renatai.petr@gmail.com (R. Petraškienė).

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1. Introduction

Psoriasis is a chronic recurrent inflammatory disease that affects the skin, the scalp, and nails. According to the World Health Organization (WHO) data, about 3% of the global population has psoriasis [1], and 15%–30% of the affected patients develop psoriatic arthritis [2]. To the best of our knowledge, no research data on the prevalence of psoriasis have been published in Lithuania.

Various environmental factors have been suggested as aggravating factors for psoriasis, including stress, physical trauma, excessive alcohol consumption and smoking [3–7]. Psoriasis has a greater impact on the quality of life of patients aged 18–45 years and affects the socialization of both sexes equally. Men face greater work-related stresses as a result of their psoriasis [8].

Psoriasis is one of the chronic diseases that are characterized by a high risk of depression and anxiety [9]. The disease has been linked to the depression and suicidal tendencies in the patients. Gupta et al. have found that 9.7% of psoriasis patients thought about death, and 5.5% of such patients considered suicide [10]. In addition, patients with psoriasis generally have low self-esteem. Thus 81% have reported feeling embarrassment and shame, whereas 75% reported feeling physically unattractive or sexually undesirable [11]. Psychological stress results in unwillingness to undergo regular treatment of psoriasis [12]. Several studies have shown that in patients with psoriasis or other chronic inflammatory skin diseases, the risk of anxiety and depression is associated with intensive pruritus [13-15]. The itchiness, scaling and localization of skin lesions on body sites not covered with clothes, are major symptoms that cause the most suffering in patients with psoriasis [2,16,17]. Therefore psoriasis affects not only the patients', but also their relatives' quality of life [18].

According to our data, so far only one small-scale crosssectional study has been conducted comparing associations in the quality of life in Lithuanian (n = 157) and Ukrainian (n = 136) psoriasis patients [19]. In this study, the majority of Lithuanian patients – in contrast to Ukrainian patients – reported a very large or an extremely large effect of psoriasis on their quality of life. The aim of this study was to evaluate demographic and clinical factors that affect the quality of life and psycho-emotional status of patients with psoriasis. To the best of our knowledge, this is the first large study in Lithuania in this field.

2. Materials and methods

The study included 18 year-old or older male and female patients with psoriasis who were treated at the inpatient and outpatient units of the Department of Skin and Venereal Diseases, Hospital of the Lithuanian University of Health Sciences. The study was carried out during 2012–2014 with the permission of Kaunas Regional Biomedical Research Ethics Committee (No BE-2-38).

Patients who agreed to participate in the study filled out the questionnaire prior to the physicians' consultations at the outpatient unit. Subjects of treated in the inpatient unit were interviewed on the first day of their arrival. The exclusion criteria were attending psychiatric consultations and treatment with psychotropic drugs. In total, 385 anonymous questionnaires were distributed (response rate, 100%).

For the survey, we used an anonymous questionnaire including questions on the patients' sociodemographic data, disease duration, height, and weight. The body mass index (BMI) was calculated following the WHO recommendations, dividing the patients into the following categories: underweight, BMI up to 18.4 kg/m²; normal body weight, BMI 18.5–24.9 kg/m²; overweight, BMI 25.0–29.9 kg/m²; and obesity, BMI \geq 30 kg/m² [20,21].

The subjects' quality of life was evaluated by applying the standardized Dermatology Life Quality Index (DLQI) using 10 questions about the patients' everyday activity, work or studies/learning, personal relationships, and treatment [22]. A validated Lithuanian version of the DLQI questionnaire was used [23]. If the DLQI score ranged from 0 to 1 point, the skin condition had no effect on the subject's life; 2–5 points, the effect was mild; 6–10 points, moderate; 11–20 points, large; and 21–30 points, extremely large.

Using data from medical documentation, the severity of psoriasis was determined by applying the Psoriasis Area and Severity Index (PASI) evaluated by the physician. The total PASI score ranged from 0 to 72 points. Psoriasis was classified as moderate and severe when the PASI score was >10 points [24,25].

Anxiety and depression in patients with psoriasis were evaluated using the Hospital Anxiety and Depression (HAD) questionnaire. This scale is used for surveys of patients treated in general and specialized non-mental healthcare institutions [26]. In 1991, the HAD scale was translated into Lithuanian and has been widely used since [27]. The HAD questionnaire consists of 14 items, 7 of which relate to anxiety and 7 to depression. The evaluation of anxiety and depression was the following: no symptoms (0–7 points), mild symptoms (8–10 points), moderate symptoms (11–14 points), and severe symptoms (\geq 15 points). Anxiety and depression states were diagnosed when the total score in each subscale of the HAD was \geq 8 points.

Statistical analysis. Statistical data analysis was conducted using SPSS 20.0 and Microsoft Office Excel 2007 software. To assess the internal consistency of DLQI and HAD scales, Cronbach's alpha coefficient was used. It evaluates whether all questions of the scale sufficiently reflect the research value, and allows for adjusting the required number of questions on the scale. The internal consistency of the DLQI questionnaire was high in the general scale (0.906). The internal consistency of the HAD questionnaire in the general scale was 0.890; in the anxiety domain, it was 0.779, and in the depression domain, 0.868.

Statistical relationships between qualitative characteristics were evaluated by applying the χ^2 test. Logistic regression analysis was used to determine the factors that significantly severely affected psoriasis patients' quality of life (DLQI \ge 10). For this purpose, the values of the DLQI were distributed into two groups: DLQI < 10 and DLQI \ge 10. The initial logistic regression model contained such variables as sex, age, duration of psoriasis, diagnosed psoriatic arthritis, treatment (inpatient/outpatient), PASI, nail lesions, anxiety

and depression, i.e. the variables whose *P* values in the univariate analysis were less than 0.1. Odds ratios and their 95% confidence intervals were calculated. Odds ratios were considered to be statistically significant if the 95% confidence interval did not include the null value of 1, and *P* was less than 0.05. The final OR of DLQI \geq 10 were calculated for sex, PASI, nail lesions, anxiety, and depression.

According to literature data [28–30], a change in the quality of life frequently becomes the cause of anxiety and depression. For this reason, we included demographic, clinical (BMI), and psoriasis-specific (PASI) variables into the logistic regression analysis as independent variables, while DLQI and HADS were included as dependent variables.

Logistic regression analysis was applied in order to evaluate the associations of anxiety and depression with age, sex, education level, BMI, marital status, alcohol use, and smoking. The values of the anxiety and depression scales were distributed into two groups – HAD \geq 8 and HAD < 8. The multivariate model of the binary logistic analysis included the attributes whose level of significance in the univariate analysis was P < 0.1.

3. Results

The study included 186 women and 199 men. The patients' age ranged from 18 to 85 years (SD, 15.83 years). In total, 76.1% of the patients were undergoing inpatient treatment and 23.9% outpatient treatment. The majority (69.4%) of the patients was inhabitants of urban areas, and others were from rural areas.

The duration of psoriasis varied from 0 to 63 years (SD, 14.07). One-fourth (44.9%) of the subjects had psoriasis for up to 10 years; 21% of the subjects, up to 20 years, 17.1%, up to 30 years, and 17%, more than 30 years.

The PASI scores in patients ranged from 0 to 38.9 points. Over one-half of the patients (53.7%) were found to have mild psoriasis, whereas moderate or severe disease (PASI > 10 points) was detected in 46.3% of the patients. The DLQI scores in patients ranged from 0 to 30 points. The DLQI score was higher in women than men (mean, 14.99; SD, 8.23 versus mean, 12.36; SD, 8.08; P = 0.002). The PASI was lower in women than men (mean, 8.98; SD, 6.18 versus mean, 12.32; SD, 6.85; P < 0.001). Negative evaluations of the quality of life were observed in 48.1% of the patients with moderate or severe psoriasis (PASI > 10 points).

The survey showed that 54.1% of the patients with psoriasis had affected nails. Of these, 13.2% indicated that nail psoriasis caused significant physical difficulty in performing routine tasks, 30.3% of the respondents felt ill, and 15.4% of them reported that their social and working activities were affected. Nail psoriasis affected the patients' quality of life (P = 0.001). A large or an extremely large change in the DLQI score was found in 38.8% and 28.6% of the subjects, respectively. Only 4.1% of the respondents stated that psoriasis-related nail damage had no effect on their quality of life.

According to the data of the logistic analysis (Table 1), a large or an extremely large effect on the quality of life (DLQI \geq 10 points) was by 1.8 times more common in females than in males, by 2.7 times more common in patients with moderate and severe psoriasis than in those with a mild

Table 1 – Factors with a large or an extremely large effect on the quality of life (DLQI \ge 10 points) among patients with psoriasis (n = 368).

Variables	n	OR	95% CI	Р
Sex				
Women	176	1.8	1.11-3.04	0.017
Men	192	1		
PASI (points)				
>10	177	2.7	1.63-4.25	< 0.001
≤10	191	1		
Nail lesions				
Present	202	1.9	1.16–2.98	0.010
Absent	166	1		
Anxiety				
Present	136	2.0	1.16-3.44	0.013
Absent	232	1		
Depression				
Present	84	2.0	1.03-3.77	0.041
Absent	284	1		

^{*} Adjusted by other variables in the Table and age, marital status, body mass index, duration of psoriasis, diagnosed psoriatic arthritis, and treatment (inpatient/outpatient). The variables were included into the multivariate logistic regression analysis if *P* was less than 0.1 in the univariate analysis.

psoriasis (PASI \leq 10 points), and by about 2 times more common in patients with nail psoriasis than in those without, as well as in patients with psoriasis-related anxiety or depression than in subjects without those symptoms. Over one-third of the patients (35.4%) indicated the presence of psoriatic arthritis (PA), which was confirmed by rheumatologists. The presence of PA was not associated with changes in the DLQI (Table 1). In univariate analysis, the DLQI score of the subjects did not depend on their age, marital status, the duration of psoriasis, treatment (inpatient/outpatient), or BMI (data are not shown).

The patients had symptoms of anxiety and depression: 37.4% and 23.4%, respectively (Table 2). Depression was more frequently observed in patients older than 55 years than in those younger than 35 years of age. Anxiety was more frequent in women than men and in the respondents with primary and unfinished secondary education than in those with higher education (Table 3).

depression according to the HAD scale in patients with psoriasis.							
Criteria	All subjects n (%)	Men n = 199 (%)	Women n = 186 (%)				
Anxiety							
<8 points	241 (62.6)	153 (76.8)	88 (47.3)				
≥8 points	144 (37.4)	46 (23.2)	98 (52.7)				
Depression							
<8 points	295 (76.6)	168 (84.4)	127 (68.2)				
≥8 points	90 (23.4)	31 (15.6)	59 (31.8)				
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Table 2 - The distribution of symptoms of anxiety and

Anxiety and depression were diagnosed when the Hospital Anxiety and Depression (HAD) score was \geq 8 points.

Table 3 – The association of anxiety and depression with the subjects' sex, age, and education $(n = 241)$.								
Variables	n	OR	95% CI	Р				
Depression								
Sex								
Women	81	1.71	0.78-3.73	0.173				
Men	160	1						
Age groups, years								
35–44	39	1.72	0.47-6.33	0.409				
45–54	60	3.02	0.87-10.55	0.082				
55–64	49	7.28	2.10-25.16	0.002				
≥65	17	5.52	1.16-26.27	0.032				
<35	76	1						
Education								
Primary, unfinished secondary	15	1.26	0.25-6.28	0.777				
Secondary	89	0.59	0.22-1.60	0.307				
Continuing	85	0.74	0.28-1.94	0.550				
Higher	52	1						
Anxiety								
Sex								
Females	160	4.72	2.53-8.83	< 0.001				
Males	81	1						
Age groups, years								
35–44	39	0.85	0.33-2.20	0.751				
45–54	60	1.04	0.42-2.57	0.929				
55–64	49	1.22	0.47-3.15	0.676				
≥65	17	0.4	0.08-1.76	0.224				
<35	76	1						
Education								
Primary, unfinished secondary	15	4.42	1.12–17.42	0.034				
Secondary	89	0.94	0.42-2.12	0.899				
Continuing	85	1.05	0.47-2.34	0.889				
Higher	52	1						
* Adjusted by other variables in the table and marital status body								

Adjusted by other variables in the table and marital status, body mass index, smoking, and alcohol consumption. The variables were included into the multivariate logistic regression analysis if *P* was less than 0.1 in the univariate analysis.

4. Discussion

This is the first study in Lithuania analyzing the psychosocial status of patients with psoriasis. The obtained results facilitate a better understanding of social life in psoriasis patients who experience symptoms of anxiety and depression, and would help in the development of educational programs about this condition.

The results of our study showed that in one-half of the patients, psoriasis had a large or an extremely large effect on the quality of life. Similar results were also observed in other studies [31–33]. In our study, the severity of psoriasis according to the PASI score was lower in females than in males, yet, conversely, changes in the quality of life were greater among females than among males. In contrast to our findings, Engin et al. stated that changes in the quality of life were greater in men than women [34].

Kimball et al. [35] reported that social and physical disability, stigmatization, and psychosocial problems did not always positively correlate with the severity of psoriasis. A study conducted by Richards et al. also showed that psychoemotional factors had a more significant effect on the quality of life than the severity of the disease, the body site affected, or the duration of the disease did [36]. In contrast, our study showed that changes in the quality of life were by 2.7 times more frequent in patients with moderate and severe psoriasis than in those with mild psoriasis.

Psoriasis varies by course, severity, and response to the treatment. Individual exacerbation of the diseases causes anxiety and depression, which impair social and professional achievements as well as the quality of life [31].

A systematic literature review [28] showed that most studies that investigated the effect of psoriasis on the quality of life were performed as cross-sectional studies. Kilic et al. in their study failed to find any positive link between psoriasis and anxiety [37].

According to literature data, between 3% and 17% of the European population experience various symptoms of depression [38,39]. Psoriasis may cause more anxiety than other chronic diseases or even cancer [40]. Some authors reveal that anxiety may be as common as depression [41,42], while in our study as well as in others [1,29,40], anxiety in psoriasis patients was more common than depression.

The results of our study as well as those conducted by other researchers confirmed that female patients with psoriasis more frequently experienced anxiety and depression than males did [1,30,40,43]. The results of our study were also in line with those of other studies showing that elderly patients more frequently complained of symptoms of depression [30,44–47]. Anxiety was found to be more common in patients with lower education levels [44,48].

We did not find any associations of anxiety and depression with body mass index or marital status of the investigated subjects. In contrast, other authors have showed that psoriasis significantly impairs the well-being of the patients and their families and causes mutual expression of psoriasis and depression [49].

Our study has several limitations. The investigated subjects were psoriasis patients treated in outpatient and inpatient units. It remains unclear whether the results in a populationbased study would be different. The methods concerning the questionnaires used in studies on patients' quality of life vary to a great extent [28]. In this study, the patients' quality of life was evaluated by using the DLQI, and the expression of anxiety and depression, by using the HAD questionnaire because both instruments had been validated in our national language (Lithuanian). The results of our study as well as those of many cross-sectional studies do not allow for concluding causal relationships between psoriasis, quality of life, anxiety, and depression in the investigated patients. Therefore, longitudinal multicenter studies should be undertaken in this field for a better understanding of regional, psychological, and clinical outcomes of psoriasis.

5. Conclusions

One-half of patients with psoriasis, women more often than men, regardless of the severity of the disease, reported a significant change in their quality of life. The quality of life often deteriorated in patients with psoriatic nail damage and anxiety or depression caused by psoriasis. Patients with psoriasis, especially women and older people (aged more than 55 years), experienced anxiety and symptoms of depression. In this context, patient education about the disease and avoidance of addictions might improve the management of psychological problems in patients with psoriasis.

Conflict of interest

The authors have no conflict of interest to declare.

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