Health-related quality of life in dermatological and allergo-dermatological patients

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Abstract

Introduction: Health-related quality of life (HRQoL) denotes the effect of disease on patient's daily functioning and well-being. Although mostly not life-threatening, dermatological diseases exert a significant impact on patient's quality of life.

Aim: The aim of the present study was to compare HRQoL between allergo-dermatological and dermatological patients in relation to different socio-demographic factors.

Material and methods: One hundred patients of the Centre of Diagnosis and Treatment of Asthma and Allergy in Lodz were included in the study. The following methods were used: DLQI, Skindex-29, Pruritus Evaluation Questionnaire and Visual Analogue Scale.

Results: Allergo-dermatological patients complained more often of such symptoms as burning, bleeding, pruritus and pain (burden of symptoms, Skindex-29) as compared to dermatological ones. The longer the disease duration, the lower HRQoL in allergo-dermatological patients was. In dermatological patients, more impaired HRQoL, measured by DLQI, was observed in males. Pruritus significantly impaired HRQoL in both studied groups.

Conclusions: Pruritus intensity seems to be a very important factor decreasing patients' HRQoL, thus psychomedical instruments should be focused on this symptom. Worse HRQoL in allergo-dermatological patients suffering longer from the disease should prompt to offer appropriate psychological help to this group of patients.

Key words: health-related quality of life, dermatology, allergology, pruritus, itching.

Introduction

Health-related quality of life (HRQoL) reflects the impact of disease on patient's daily functioning and the degree of its impairment caused by the illness itself. It allows the patient to evaluate not only his own physical state but also social, mental and psychological ones [1-3]. As a consequence, such assessment becomes much more complete when compared with the purely clinical examination [4].

As mostly not life-threatening, chronic dermatological diseases are often neglected by the society [5]. Nonetheless, numerous data focusing on dermatological patients' HRQoL show a considerable negative effect on daily functioning including limitation of occupational activities, social isolation, fear of being stigmatized, psychological problems like depression, low self-esteem, stronger feelings of anger or a higher stress level [1, 5-11]. In the most severe cases, even suicidal thoughts and attempts may occur [12, 13]. Skin diseases characterized by problems in everyday functioning of the patients include acne vulgaris and acne rosacea, alopecia areata, psoriasis, atopic dermatitis, chronic urticaria or contact dermatitis [6-9, 12, 14-16].

It is worth pointing out that very intensive pruritus is an important factor causing a significant decrease in HRQoL in numerous dermatological patients [1, 5, 15, 17]. Severe itching in such dermatological diseases like psoriasis, atopic dermatitis, chronic urticaria or contact dermatitis significantly disrupts night time sleep and daily activities. Moreover, itching leads to intensive scratching, in principle aiming at relief but in fact triggering a vicious cycle of itch and scratch [12, 17-20]. Such situation leads to depressive symptoms and significant impairment in

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functioning of the patients [13, 15]. Although the effect of chronic dermatological diseases on patients' HRQoL is well documented [1, 4, 12, 14, 15], it is of importance to focus on HRQoL impairment among diverse dermatological diseases specially if they cross different specialties such as dermatology and allergology.

Aim

The aim of the study was to compare HRQoL between allergo-dermatological patients and dermatological ones in relation to selected socio-demographic factors.

Material and methods

The study group comprised 100 out-patients of the Centre of Diagnosis and Treatment of Asthma and Allergy in Lodz. The patients were recruited between January and June 2010.

The subjects were divided into two groups, the allergo-dermatological patients (39 females and 23 males, mean age: 37.7 years) with atopic dermatitis (13 patients), contact dermatitis (39 patients), chronic urticaria (10 patients) and the dermatological patients (24 females, 14 males, mean age: 41.6 years) with alopecia areata (3 patients), psoriasis (6 patients), androgenic alopecia (10 patients), acne vulgaris (15 patients) and acne rosacea (4 patients).

Lesions were located on visible parts of the body (42 allergo-dermatological patients and in 28 dermatological patients) and invisible (42 allergo-dermatological patients and in 10 dermatological ones). The division of the patients into dermatological and allergo-dermatological ones was based on the observation of greater social acceptance for the notion of "allergy", being currently in vogue, than "dermatological" disease (regarded as an ugly, anesthetic and contagious condition).

In both groups, patients' HRQoL was estimated in relation to sex, age, disease duration, intensity of pruritus and lesion localization. Severity of the disease was graded on a qualitative scale: none-mild-moderate-severe. The patients were evaluated by a dermatologist as having a mild disease.

The following methods were used:

- Questionnaire of Pruritus Evaluation (Szepietowski and Reich), designed to assess the extent, intensity and frequency of pruritus as well as to estimate itching-related night sleep disturbances. The response options range from 0 to 19 (0 means the absence of pruritus, 19 means the most severe imaginable pruritus) [21].
- Visual Analogue Scale (VAS). The patient's task is to mark a perpendicular line on another vertical line of 10 cm, which determines the subjective intensity of pruritus (0 means the absence of pruritus, 10 means the most severe imaginable pruritus).
- Questionnaire Skindex-29. This tool was created by Chren *et al.* in 1996. It is used to estimate HRQoL in dermatological patients in three domains: 1) *burden of symptoms* (7 items concerning the symptoms of dermatological disease); 2) *emotional responses* (10 items concerning dermatological disease-related feelings); 3) *social and physical functioning* (12 items concerning social relationship and patient's daily activities). Answers are given on a 5-point scale (never, rarely, sometimes, often, all the time). The score ranges between 29 and 145 and the higher the score, the more impaired HRQoL is [22].
- Dermatology Life Quality Index (DLQI) was created by Finley and Khan in 1994, as the first tool evaluating health-related quality of life, more precisely in dermatological diseases. The Questionnaire comprises 10 items and the patient's task is to choose one response from four possibilities: not at all, a little, a lot, very much (scores 0 to 3, respectively). The analysis concerns dermatological disease-related feelings, daily activity, functioning in the workplace or school, spending free time, personal relationship and the course of treatment. The higher the score the lower the quality of life is [23-25].

The study was approved by the Bioethics Committee of the Medical University of Lodz.

Statistical analysis

Statistical calculations were performed using Statistica® 8.0 version. Mean (M) and standard deviation (SD) are presented. The distribution of the obtained results did not differ significantly from normal distribution. *t*-Student test for verification of the differences between the groups was used. Correlations of variables were expressed as Pearson's coefficients (*r*). The statistical significance level was set at $p < 0.05$.

Results

Comparison of HRQoL in *burden of symptoms* (Skindex-29) revealed a statistically significant difference between the group of dermatological patients (M ± SD: 17.5 ±56.14) and allergo-dermatological ones (M ± SD: 21.8 ±54.88) ($t = 3.872$, $p < 0.001$). There were no statistically significant differences for the other domains of Skindex-29 (M ± SD: 74.46 ±21.95 in allergo-dermatological patients vs. M ± SD: 72.21 ±24.23 dermatological patients) as well as in the case of HRQoL measurement by DLQI (M ± SD: 6.40 ±5.36 in allergo-dermatological patients vs. M ± SD: 5.71 ±6.05 dermatological ones) (all $p > 0.05$).

Statistically significant differences between HRQoL and sex, age and lesion localization were not revealed in allergo-dermatological patients (all $p > 0.05$). The statistically significant difference between HRQoL (DLQI) in females (M ± SD: 3.33 ±2.56) and males (M ± SD: 9.7 ±8.02), ($t = –3.663$, $p < 0.001$) was observed in the group of dermatological patients, thus males presented worse HRQoL.

No significant correlation between disease duration, age, lesion localization in dermatological patients and HRQoL (both Skindex-29 and DLQI) was revealed (all $p > 0.05$).

On the contrary, allergo-dermatological patients demonstrated a significantly positive correlation between disease duration and HRQoL (both in DLQI and Skindex-29). Detailed results are presented in Table 1.

Further analysis revealed a statistically significant correlation between pruritus (VAS and Pruritus Evaluation Questionnaire) and HRQoL (DLQI) in both groups of patients, i.e. the more intense the pruritus, the worse HRQoL was.

Additionally, we observed a statistically significant correlation between pruritus intensity (VAS and Pruritus Evaluation Questionnaire) and *burden of symptoms, social and physical functioning* and *overall quality of life* (Skindex-29) in allergo-dermatological patients.

However, there was no significant correlation between pruritus intensity (VAS) and HRQoL in *emotional responses* (Skindex-29) in this group ($r = 0.18$, $p > 0.05$), but a significant correlation between *emotional responses* and pruritus intensity was discovered ($r = 0.31$, $p < 0.01$) when Pruritus Evaluation Questionnaire was introduced. Of note, a statistically significant positive correlation between HRQoL (Skindex-29) and pruritus intensity (VAS and Pruritus Evaluation Questionnaire) in the group of dermatological patients in the following domains: *burden of symptoms, emotional responses* and *overall quality of life* was observed.

However, there was no correlation between pruritus intensity and *social and physical functioning* (Skindex-29) in dermatological patients when Pruritus Evaluation Questionnaire was used ($r = 0.08$, $p > 0.05$). Detailed results are presented in Table 2.

Table 1. Correlation coefficients between allergo-dermatological patients' HRQoL and disease duration

HRQoL	Disease duration
Skindex-29 – *burden of symptoms*	0.31**
Skindex-29 – *emotional responses*	0.26*
Skindex-29 – *social and physical functioning*	0.31**
Skindex-29 – *overall quality of life*	0.31**
DLQI	0.44***

*Statistical significance at: *p < 0.05, **p < 0.01, ***p < 0.001*
DLQI – Dermatology Life Quality Index, HRQoL – Health-related quality of life

Discussion

Chronic dermatological diseases can significantly impair patients' quality of life and interfere with patients' daily functioning [9, 12, 15]. Numerous skin symptoms such as pain, burning or bleeding, quite common in chronic allergo-dermatological diseases, like atopic dermatitis or contact dermatitis, lead to numerous difficulties in occupational activities, weariness, anger and irritability. Pruritus, sometimes very intensive and troublesome, adds to the problem [9].

In the present study, statistical significance between allegro-dermatological patients HRQoL and dermatological ones in *burden of symptoms* (Skindex-29) was observed.

The finding means that allergo-dermatological patients complain of disease-related physical discomfort more often than dermatological ones due to subjective symptoms of allergological diseases such as troublesome itching, that could result in their lower quality of life.

Contrary to previous studies [8, 22, 25, 26], we observed a positive correlation between disease duration and HRQoL (the longer the disease duration, the worse HRQoL was) measured by both DLQI and Skindex-29 (all three subscales) in allergo-dermatological patients. It can be explained by the fact that allergo-dermatological diseases are often connected with prolonged sick leave or even unemployment, especially in the case of contact dermatitis [7, 27, 28].

Table 2. Correlation coefficients between allergo-dermatological and dermatological patients' HRQoL and pruritus intensity

HRQoL	Pruritus Evaluation Questionnaire		VAS	
	Allergo-dermatological patients	Dermatological patients	Allergo-dermatological patients	Dermatological patients
Skindex-29 – *burden of symptoms*	0.30**	0.56***	0.25*	0.59***
Skindex-29 – *emotional responses*	0.31**	0.28*	0.18	0.37**
Skindex-29 – *social and physical functioning*	0.37**	0.08	0.28*	0.21*
Skindex-29 – *overall quality of life*	0.36**	0.30**	0.26*	0.41***
DLQI	0.26*	0.28*	0.27*	0.27*

*Statistical significance at: *p < 0.05, **p < 0.01, ***p < 0.001*
HRQoL – Health-related quality of life, VAS – Visual Analogue Scale

In the group of dermatological patients, more impaired HRQoL, measured by DLQI, was observed only in males. Of note, the vast majority of male patients suffered from androgenic alopecia (10 out of 14). Studies on males' HRQoL with excessive hair loss show that the problem is often associated with emotional discomfort, rejection and greater frustration especially in social situations. The symptoms deteriorate sexual contacts, affect self-esteem and result in feelings of dissatisfaction with one's own appearance. Excessive hair loss, being an important element of human being appearance, is also regarded as a symbol of power, thus can mainly influence male patients' quality of life. Besides, DLQI concerns primarily the subjective assessment of daily functioning impairment connected with dermatological disease compared to patients' emotional state [24, 29]. Thus, lower HRQoL in men with androgenic alopecia in our study seems to be related to patients' life roles and daily activities rather than to their physical discomfort and well-being.

When discussing pruritus, it should be pointed out that this troubling symptom can significantly impair HRQoL of patients with cutaneous diseases [18, 30]. It concerns especially such skin disorders as atopic dermatitis, contact dermatitis, psoriasis and chronic urticaria [1, 13, 15]. Severe itching results in sleep disturbances, concentration on problems and life obstacles and general agitation, subsequently leading to scratching and formation of the itch-scratch cycle [31].

Lan *et al*. observed that such symptoms as itching and burning were responsible for impaired HRQoL in University Hospital nursing staff with hand eczema. Nurses also complained that pruritus led to limitation of work and other daily activities, caused emotional and social problems. They also felt worn out, nervous and depressed due to this symptom [17]. Furthermore, Gupta *et al*. also found that pruritus severity in patients with psoriasis, atopic dermatitis and chronic idiopathic urticarial positively correlated with depressive symptoms [32].

In general, pruritus assessment can be performed either by visual analogue scales or pruritus evaluation questionnaires [33]. As it is recommended to employ at least two different tools of itch evaluation [34], we decided to use VAS and Pruritus Evaluation Questionnaire. The VAS is a simple and reliable method, which allows to define various level of pruritus [34] whereas Pruritus Evaluation Questionnaire examines more detailed factors of pruritus as its frequency, extent and itching-related sleep disturbances [21].

In the present study, a positive correlation between pruritus intensity (Pruritus Evaluation Questionnaire) and HRQoL (DLQI and Skindex-29) in allergo-dermatological patients was observed. Our results are in agreement with other studies and confirm that itching affects patients HRQoL in a highly negative way [17, 32, 33].

Quite surprisingly, we did not reveal any statistically significant difference between *emotional responses* (Skindex-29) an itching (VAS) in allergo-dermatological patients. It could result from the different character of VAS when comparing with Pruritus Evaluation Questionnaire as mentioned above. Thus, when allergo-dermatological patients were asked to assess pruritus more precisely (Pruritus Evaluation Questionnaire), they observed negative impact of this symptom on different aspects of their functioning as compared to the simple itch intensity assessment offered by VAS. However, it is important to underline that pruritus severity was perceived by both groups of patients as a factor strongly decreasing HRQoL (both measured by VAS and Pruritus Evaluation Questionnaire).

Conclusions

Worse HRQoL in allergo-dermatological patients suffering for longer from the disease should prompt an appropriate psychological help offered to this group of patients. Males with androgenic alopecia are supposed to require special psychomedical help due to their considerably impaired HRQoL. Pruritus intensity decreases HRQoL in allergo-dermatological and dermatological patients, thus suitable medical and psychological care should be introduced in routine professional management.

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References

1. Hrehorów E, Reich A, Szepietowski J. Quality of life in patients with psoriasis related to pruritus, stress and depressive symptoms [Polish]. Dermatol Klin 2007; 9: 19-23.
2. Potocka A, Turczyn-Jabłońska K, Kieć-Świerczyńska M. Self-image and quality of life of dermatology patients. Int J Occup Med Environ Health 2008; 21: 309-17.
3. Prinsen CA, Lindeboom R, Sprangers MA, et al. Health-related quality of life assessment in dermatology: interpretation of Skindex-29 scores using patients-based anchors. J Invest Dermatol 2010; 130: 1318-22.
4. Moberg C, Alderling M, Meding B, et al. Hand eczema and quality of life: a population-based study. Br J Dermatol 2009; 161: 397-403.
5. Kowalewska B, Krajewska-Kułak E, Wrońska, et al. Self-evaluation of quality of life by patients with skin problems [Polish]. Dermatol Klin 2010; 12: 106-13.
6. Conrad R, Geiser F, Haidi G, et al. Relationship between anger and pruritus perception in patients with chronic idiopathic urticaria and psoriasis. J Eur Acad Dermatol Venereol 2008; 22: 1062-9.
7. Cvetkovski RS, Rothman KJ, Olsen J, et al. Relation between diagnoses on severity, sick leave and loss of job among patients with occupational hand eczema. Br J Dermatol 2005; 152: 93-8.
8. Cvetkovski RS, Zachariae R, Jensen H, et al. Quality of life and depression in a population of occupational hand eczema patients. Contact Dermatitis 2006; 54: 106-11.

9. Kieć-Świerczyńska M, Kręcisz B, Potocka A, et al. Psychological factors in the course of allergological skin diseases [Polish]. Med Prakt 2008; 59: 279-85.
10. Adamski Z, Dudziak M, Zakrzewska K. Etanercept in dermatological practice- authors' own experience in the treatment of psoriasis vulgaris and psoriatic arthritis. Post Dermatol Alergol 2011; 28: 435-41.
11. Ograczyk A, Malec J, Miniszewska J, Zalewska-Janowska A. Psychosocial aspects of atopic dermatitis and contact dermatitis: stress coping strategies and stigmatization. Post Dermatol Alergol 2012; 29: 14-8.
12. Tyc-Zdrojewska E, Trznadel-Grodzka E, Kaszuba A. The effect of chronic skin diseases on patietns' quality of life [Polish]. Dermatol Klin 2011; 13: 155-60.
13. Zalewska-Janowska A. Psychodermatology in allergology. Alergia Astma Immunol 2010; 15: 109-17.
14. Engin B, Uguz F, Yilmaz E, et al. The levels of depression, anxiety and quality of life in patients with chronic idiopathic urticaria. J Eur Acad Dermatol Venereol 2008; 22: 36-40.
15. Zalewska A, Miniszewska J, Chodkiewicz J, Narbutt J. Acceptance of chronic illness in psoriasis vulgaris patients. J Eur Acad Dermatol Venereol 2007; 21: 235-42.
16. Szczepaniak E, Prokop J. Contact dermatitis. Post Dermatol Alergol 2004; 21: 205-10.
17. Lan CC, Feng WW, Lu YW, et al. Hand eczema among University Hospital nursing staff: identification of high-risk sector and impact on quality of life. Contact Dermatitis 2008; 59: 301-6.
18. Majeski CJ, Johnson JA, Davison SN, et al. Itch Severity Scale: a self-report instrument for the measurement of pruritus severity. Br J Dermatol 2007; 156: 667-73.
19. Ponarovsky B, Amital D, Lazarov A, et al. Anxiety and depression in patients with allergic and non-allergic cutaneous disorders. Int J Dermatol 2011; 50: 1217-22.
20. Vadut CI, Kallay È. Psychosocial implications of psoriasis-theoretical review. Cognition, Brain, Behavior, 2010; 14: 23-35.
21. Szepietowski J, Reich A. Pruritus. Etiology, clinic, treatment [Polish]. Termedia, Poznań 2010.
22. Matterne U, Apfelbacher CJ, Soder S, et al. Health-related quality of life in health care workers with work-related skin diseases. Contact Dermatitis 2009; 61: 145-51.
23. Szepietowski J, Salomon J, Finlay AY, et al. Dermatology Life Quality Index (DLQI): Polish version. Dermatol Klin 2004; 6: 63-70.
24. Wojtkiewicz M, Panaszek B. The possibilities of assessment of chronic urticaria and angioedema effect on patients' quality of life. Post Dermatol Alergol 2010; 27: 291-6.
25. Zachariae R, Zachariae C, Ibsen H, et al. Dermatology Life Quality Index: data from Danish in patients and outpatients. Acta Derm Venereol 2000; 80: 272-6.
26. Zachariae R, Zachariae C, Ibsen H, et al. Psychological symptoms and quality of life of dermatology outpatients and hospitalized dermatology patients. Acta Derm Venereol 2004; 84: 205-12.
27. Adisesh A, Meyer JD, Cherry NM, et al. Prognosis and work absence due to occupational contact dermatitis. Contact Dermatitis 2002; 46: 273-79.
28. Agner T, Andersen KE, Brandao FM, et al. Hand eczema severity and quality of life: a cross-sectional, multicentre study of hand eczema patients. Contact Dermatitis 2008; 59: 43-7.
29. Urysiak-Czubatka I, Broniarczyk Dyła G. The evaluation of quality of life in patients with different types of non-scarring alopecia [Polish]. Dermatol Klin 2010; 12: 211-6.
30. Metz M, Grundmann S, Ständer S. Pruritus: an overview of current concepts. Vet Dermatol 2011; 22: 121-31.
31. Patel T, Ishiuji Y, Yosipovitch G. Nocturnal itch: why do we itch at night? Acta Derm Venereol 2007; 87: 295-8.
32. Gupta MA, Gupta AK, Schork NJ, et al. Depression modulates pruritus perception: a study of pruritus in psoriasis, atopic dermatitis, and chronic idiopathic urticaria. Psychosom Med 1994; 56: 36-40.
33. Suseł J, Simon-Błażewicz M, Obojski A. Skin pruritus [Polish]. Alergol Info 2010; 3: 95-9.
34. Reich A, Heisig M, Quan NP. Visual Analogue Scale: evaluation. Acta Derm Venereol 2011; PMID 22102095.