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CLINICAL REPORT

Psychological Symptoms and Quality of Life of Dermatology Outpatients and Hospitalized Dermatology Patients

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The aim of the investigation was to compare psychological symptoms and health-related quality of life of dermatology patients and healthy controls. The sample consisted of 333 consecutively recruited patients from four dermatology outpatient clinics, 172 hospitalized dermatological patients from two university hospitals and 293 matched healthy controls. All patients and controls completed Beck's Depression Inventory, the Brief Symptom Inventory and the Dermatology Life Quality Index. Hospitalized patients were more distressed than outpatients and healthy controls and reported greater impairment of disease-related quality of life than outpatients. More hospitalized patients had suicidal thoughts and were characterized as having severe to moderate depression compared with outpatients and controls. Female patients and younger patients were generally more distressed than male patients and older patients, and patients with atopic dermatitis and psoriasis were more distressed than patients with urticaria and eczemas. Disease-related impairment of quality of life was the main predictor of psychological symptoms, when controlling for diagnosis, age, gender, disease duration and disease severity. Although older age was associated with fewer psychological symptoms, our data suggest that skin disease affects quality of life equally in young and older patients. The findings highlight the importance of recognizing disease-related psychological problems and possible psychiatric comorbidity of dermatology patients, especially among patients with atopic dermatitis and psoriasis.

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Results from a growing number of investigations suggest that both dermatology outpatients and hospitalized patients have a higher prevalence of psychiatric disorders, especially depression and anxiety, than the general population (1, 2). Certain diagnoses such as psoriasis, atopic dermatitis, urticaria and generalized pruritus have often been found to be associated with psychological symptoms such as anxiety and depression (3–6) and reported use of anxiolytics and antidepressants (7). Although most researchers report differences between dermatology patients and controls in depressive symptoms, the findings concerning anxiety are less consistent. While some researchers have found higher anxiety among dermatology patients compared with controls (8), others have been unable to find such differences (9, 10). The inconsistent results may be related to differences between studies in diagnosis, disease severity and the psychological measures used.

Gupta & Gupta (6) examined and found greater prevalence of depression and suicidal thoughts among patients with severe psoriasis than other patient groups, including patients with acne and atopic dermatitis. The number of psychological symptoms has generally been found to be related to the severity of the disease (10). What mediates the associations generally found between disease severity and psychological problems is not yet clear. In a study of 3125 dermatology outpatients, health-related quality of life (QoL) was found to be a much stronger predictor of psychiatric morbidity than physician-rated disease severity (11), suggesting that it is not the disease in itself, but its impact on the daily activities and social relations that is associated with psychological problems. Several other factors may also mediate the psychosocial impact of dermatological disorders, including the timing of onset, the course of the disease, and the age and sex of the patient (12). Disease-specific factors, such as the degree of pruritus, have also been suggested to mediate the relationship between skin disease and psychological problems, e.g. depression (9, 13).

While the available studies indicate that psychological symptoms and psychiatric comorbidity are frequent among patients with dermatological diseases, most studies have focused on selected dermatological disorders and psychological problems, and studies rarely include an adequate control group of healthy subjects. In many studies it is also unclear whether the patients have been examined before, during or after treatment.

The aim of the present study was therefore to

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examine psychological symptoms and compare a large sample of consecutively recruited dermatology outpatients and hospitalized patients with a sample of healthy, matched controls without skin-related problems, while ensuring that all patients were investigated at a similar stage in their contact with the dermatology clinics, i.e. on their visit to the clinic or on their first day of admission. As it is still unclear which factors mediate the association generally found between disease severity and psychological problems, we also wished to examine the possible influence of age, gender, diagnosis, disease severity, disease duration and disease-related impairment of QoL on psychological problems, as well as to investigate whether particular dermatological diagnoses were associated with specific psychological problems.

METHODS

Patients

The patient sample consisted of 333 consecutively recruited patients from the outpatient clinics of the dermatology departments of Marselisborg, Bispebjerg, Odense and Gentofte hospitals and 172 hospitalized dermatological patients from Marselisborg and Bispebjerg hospitals. The patients were recruited consecutively over a period of approximately 24 months. A criterion for selection of patients was that they had not previously been treated at the department. Outpatients were recruited at their first visit to the clinics, and the hospitalized patients were recruited on their admission day. During the first 12 months patients were recruited irrespective of their diagnosis. After the first 12 months only patients with psoriasis, atopic dermatitis and eczema were included so as to increase sample size in these categories. The study was approved by the local ethics committees. All patients signed a written consent form and completed a questionnaire package on their first day at the department.

Healthy controls

A questionnaire package was also mailed out to 911 subjects obtained through the Central Office of Civil Registration (the CPR Office). The subjects were matched with the patient group for sex, age and county. The subjects received a cover letter explaining that the purpose of the study was to study health-related QoL in dermatology patients and that a control group was needed. The subjects were anonymous, and the completed questionnaire could not be linked to the CPR number of the subjects. In addition to the questionnaires completed by the patients (see below), the controls also answered questions inquiring whether they had any skin-related problems or diseases or any other health problems in general. The criteria for inclusion in the control group were that they did not report any skin problems or medical diseases.

Questionnaires

The questionnaire package included Danish translations of the following questionnaires:

The Dermatology Life Quality Index (DLQI) (14). The DLQI consists of 10 items covering different aspects of skin disease-related QoL experienced during the last week, including symptoms and feelings, daily activities, leisure, work or school, personal relationships and treatment. Each question has four alternative responses: 'not at all', 'a little', 'a lot' and 'very much', with corresponding scores of 0, 1, 2 and 3, respectively. The total score is calculated by summating the score of each question, and total scores range from a minimum of 0 to a maximum of 30, with higher scores representing greater impairment of QoL. The Danish version of the DLQI has previously been shown to have satisfactory reliability and validity (15).

Beck's Depression Inventory (2nd edn) (BDI-II) (16). The BDI consists of 21 items measuring different depressive symptoms experienced during the last 2 weeks. The response format consists of four rank-ordered sentences with corresponding scores ranging from 0 to 3. In addition to the total score, ranging from a minimum of 0 to a maximum of 63, the BDI consists of two subscales measuring 1) cognitive-affective depressive symptoms and 2) somatic depressive symptoms. Using cut-off scores the respondents are classified as having minimal, mild, moderate or severe depression. The Danish translation of the BDI has been shown to have satisfactory internal reliability (Cronbach's alpha = 0.88).

Brief Symptom Inventory (BSI) (17). The BSI consists of 53 items measuring psychological symptoms with nine subscales measuring somatization, compulsive symptoms, interpersonal sensibility, depression, anxiety, hostility, phobia, paranoia and psychoticism. In addition to scores on each subscale, a grand total score is calculated. The Danish translation of the BSI has been shown to have acceptable internal consistencies ranging from 0.87 (depression) to 0.65 (psychoticism).

Additional questions. Finally, the patients were asked to supply information about their age, sex and the county of their permanent address and to estimate the duration of their disease as the number of weeks, months or years.

Disease severity

The patients were then seen and diagnosed by a trained dermatologist at each department. After seeing the patient, the dermatologist rated the severity of the skin symptoms on a five-point scale, with the scores of 1–5 corresponding to: 1, 'very slight'; 2, 'slight'; 3, 'moderate'; 4, 'pronounced' and 5, 'very severe' symptoms.

Statistical analyses

Categorical and ordinal data were analysed with non-parametric statistics, e.g. χ^2 and Mann–Whitney tests. Other comparisons were conducted with *t*-tests for independent samples and one-way analyses of variance (ANOVAs). When independent variables were moderately or highly intercorrelated, multiple analyses of variance (MANOVAs) were used to control for mass-significance. Multiple pairwise comparisons were conducted with Scheffe post hoc tests. In the case of multiple *t*-tests, the significance level was corrected using the Bonferroni method. Other analyses included multiple, hierarchical, linear and logistic regressions. Five percent was chosen as the level of statistical significance.

RESULTS

Sample characteristics

The demographic data for the patient sample are shown in Table I. The largest numbers of patients ($n=360$) had psoriasis, atopic dermatitis, eczemas and urticaria. The remaining 145 patients had various diagnoses with diagnosis groups consisting of 8 patients or less. These patients were classified as 'other diagnoses'. A total of 384 control subjects completed and returned the mail-out questionnaire package, yielding a response rate of 42%. Of these subjects, 91 subjects were excluded owing to reported skin problems or other health-related problems. A total of 293 healthy controls (106 men, 187 women, mean age 44.2 years) was included in the study.

No significant difference in the proportion of men and women was found between hospitalized patients, outpatients and healthy controls ($\chi^2=2.0$; $p=0.37$) or between the four disease categories of psoriasis, atopic dermatitis, eczemas and urticaria ($\chi^2=6.7$; $p=0.08$). Also, no differences were found between the mean ages of hospitalized patients, outpatients and healthy controls ($F(2,788)=0.32$; $p=0.73$). Atopic dermatitis patients were significantly younger than urticaria patients, who were younger than eczema, psoriasis and other patients ($p<0.05$; Scheffe post hoc tests). Men were significantly older (mean age = 47.7) than women (41.2). A total of 282 patients (56%) had been recruited during the period from October to March (winter) and 223 patients (44%) during April to September (summer). When we controlled for possible seasonal variation by comparing disease severity, DLQI, BDI and BSI scores of patients recruited during winter and summer with non-parametric tests and *t*-tests for independent samples, no statistically significant differences were found ($0.97>p>0.41$).

Comparing outpatients, hospitalized patients and healthy controls

Mean scores of the DLQI, BDI and BSI grand total scores are shown in Fig. 1. The scores of outpatients, hospitalized patients and healthy controls were compared with a multiple 3 (group) × 2 (sex) analysis of variance (MANOVA) with scores on DLQI, BDI and BSI as dependent variables. Significant differences ($0.02>p>0.001$) between groups were found for all independent variables, with the exception of the compulsive subscale on the BSI. Scheffe post hoc multiple comparisons revealed that hospitalized patients had significantly ($p<0.05$) higher scores than healthy controls for all independent variables and higher scores than outpatients on the DLQI, BDI-total, BDI-cognitive-affective, BDI-somatic, BSI-grand total, BSI-somatization, BSI-depression and BSI-anxiety. When controlling for differences in disease severity

Table I. *Demographic characteristics of the sample of dermatology outpatients and hospitalized patients*

	Psoriasis				Atopic dermatitis				Eczema				Urticaria				Other diagnoses			
	n	Men (%)	Women (%)	Mean age	*n*	Men (%)	Women (%)	Mean age	*n*	Men (%)	Women (%)	Mean age	*n*	Men (%)	Women (%)	Mean age	*n*	Men (%)	Women (%)	Mean age
Hospitalized	57	53	47	50.5	56	34	66	29.8	23	35	65	55.5	10	30	70	39.5	26	31	69	55.5
Outpatients	56	54	46	49.3	39	44	56	30.6	97	43	57	44.8	22	36	64	37.2	119	35	65	44.3
Total	113	53	47	49.9	95	38	62	30.1	120	42	58	46.6	32	34	66	37.9	145	34	66	46.3

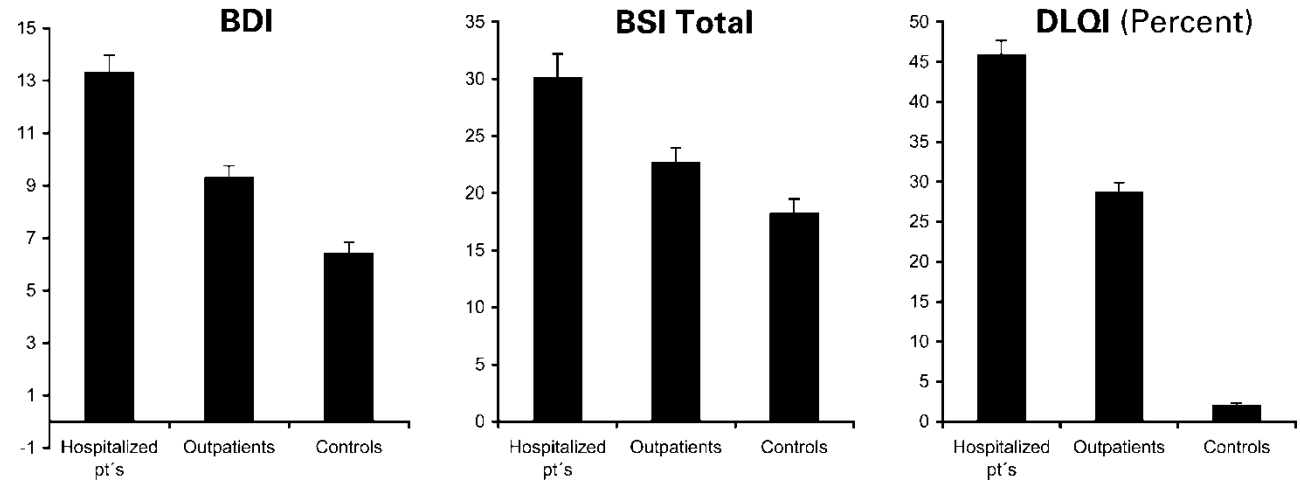

Fig. 1. Mean depression scores (BDI), psychological symptoms (BSI-total), and impairment of disease-related quality of life (DLQI – percentage scores) of 172 hospitalized dermatology patients, 333 dermatology outpatients and 293 healthy controls. Error bars = SEM.

and duration by entering these variables as covariates, the differences found between hospitalized and outpatients remained significant (data not shown). Outpatients had higher scores than healthy controls on the DLQI, BDI-total, BDI-cognitive-affective and the BSI-somatization subscale, but did not differ on the remaining variables.

A significantly greater proportion of hospitalized patients had BDI scores corresponding to severe (7.6%) or moderate depression (15.8%) compared with outpatients (severe, 2.7%; moderate, 10.5%) and healthy controls (severe, 1.8%; moderate, 3.9%). When the relative contributions of somatic symptoms to the total BDI depression scores of the three groups were compared with a one-way ANOVA, no significant differences were found ($p = 0.12$). Hospitalized patients had significantly longer disease duration (median, 150; range, 0 – 900 months) than outpatients (median, 36; range 0 – 684 months) (Mann – Whitney test, $p < 0.001$) and greater dermatologist-rated disease severity (3.7 ± 0.8) than outpatients (3.0 ± 0.9) (*t*-test for independent samples, $p < 0.001$).

Women had higher scores than men on all variables except BSI-compulsive in all three groups. There were no differences between men and women in disease severity or duration. When comparing the scores of male and female patients on the individual items of the DLQI with the Mann – Whitney non-parametric test for independent samples, women differed from men on only two items: item 2 ('How embarrassed or self-conscious have you been because of your skin?'; $p < 0.001$) and item 4 ('How much has your skin influenced the clothes you wear?'; $p < 0.001$). The difference between men and women on item 5 ('How much has your skin affected any social and leisure activities?') was near-significant ($p = 0.059$).

Age generally showed small, but significant ($p < 0.05$), inverse correlations with DLQI, BDI and BSI-scores, with correlation coefficients ranging from -0.24 (hostility) to -0.07 (phobia). When we calculated the correlations between disease severity and DLQI, BDI and BSI-total scores in patients aged 17 – 54 years and patients aged 55 years and above, the correlations were similar for DLQI ($R = 0.45$; 0.50) and BDI ($R = 0.27$; 0.23), but not for BSI-total scores, where a small but significant ($p < 0.05$) correlation was found in the group of younger patients ($R = 0.19$), but not in the group of older patients ($R = 0.04$).

Comparing patient groups

Patient scores were compared with a MANOVA with scores on DLQI, BDI and BSI as dependent variables and diagnosis as grouping factor. Significant effects of diagnosis were found for all independent variables ($0.05 < p < 0.001$). Post hoc multiple comparisons revealed that atopic dermatitis patients had higher scores on DLQI, BDI-total, BDI-cognitive-affective, BSI-grand total and BSI-paranoia than eczema patients, urticaria patients and patients with other diagnoses. Although atopic dermatitis patients had higher mean scores than psoriasis patients on all scores, the differences did not reach statistical significance (data not shown).

Eczema patients

The two largest groups of eczema patients were hand eczema ($n = 54$) and universal eczema ($n = 38$). Patients with universal eczema were significantly older (mean age 51.8 years) than patients with hand eczema (42.1 years) ($p < 0.05$). The two groups did not differ with respect to DLQI, BDI and BSI-scores (data not shown).

The association between QoL and psychological symptoms

To further explore the association between DLQI scores and psychological symptoms, a number of multiple, hierarchical regression analyses with BDI, BSI-grand total scores and scores on the subscales of the BSI as dependent variables, and the diagnoses of psoriasis, atopic dermatitis, eczema and urticaria (recoded as dummy variables) entered at the first step, age, gender, disease severity and disease duration entered at the second step, and DLQI-total scores entered at the third and final step. For several independent variables, age, sex and disease severity were significant predictors at the second step, but explained no more than 10% of the variation (data not shown). When entering DLQI-total scores at the third step, disease severity ceased to be a significant predictor for all variables analysed. DLQI-total scores were, together with age, the most consistent significant predictor of psychological symptoms with greater impairment of disease-related QoL and younger age associated with greater number of symptoms. The results for the final model for BDI, BSI-total and for each of the individual BSI-subscales, for which significant models were found, are shown in Table II.

Predictors of severe and moderate depression

A multiple, hierarchical logistic regression analysis was conducted with patients with severe depression versus other patients entered as the dependent variable, and diagnosis entered at the first step, age, sex, disease severity and disease duration entered at the second step, and DLQI scores entered at the third and final step as independent variables. Diagnosis did not predict severe depression, and at the second step, only disease severity emerged as a significant predictor of severe depression ($B = 0.59$; odds ratio: 1.81; 95% CI: 1.02 – 3.02; $p < 0.05$). After entering DLQI scores at the final step and controlling for the previously entered factors, only DLQI-scores were significant predictors of severe depression ($B = 0.06$; odds ratio: 1.06; 95% CI: 1.04 – 1.09; $p < 0.001$). Similar results were found when including patients with moderate depression in the analysis (data not shown).

Associations between depressive symptoms and itching, pain and soreness

To investigate the possible association between sensory skin symptoms of itching, soreness and pain and psychological symptoms we specifically calculated the correlations (Spearman's rho) between the responses on item 1 of the DLQI ('How itchy, sore, painful or stinging has your skin been?') and scores on the BDI and BSI. BDI-total scores were significantly correlated with scores on item 1 ($rho = 0.38$; $p < 0.001$), as were scores on all subscales of the BSI, with correlation coefficients (Pearson's R) ranging from 0.29 (somatization) to 0.13 (psychoticism). When analysing the influence of diagnosis on the scores on item 1 of the DLQI with a non-parametric analysis of variance, a significant ($p < 0.05$) effect of diagnosis was found, with subsequent comparisons revealing that atopic dermatitis patients had higher scores than eczema and urticaria patients. No other differences between diagnoses were found. The correlation between itching, pain and soreness and BDI was highest in atopic dermatitis patients ($R = 0.46$) and lowest in eczema patients ($R = 0.29$).

Suicidal thoughts

On item 9 on the BDI, the respondents were asked to which degree they had thoughts about suicide within the last 2 weeks. When analysing the responses, significantly ($p < 0.01$) greater percentages of psoriasis (21.2%) and atopic dermatitis patients (18.9%) had thought about suicide, while patients with eczema (5.8%) and urticaria (6.3%) did not differ from healthy controls (6.8%). A multiple logistic regression was then conducted with suicidal ideation versus no thoughts about suicide entered as the dependent variable and scores on the individual items of the DLQI entered

Table II. *Regression coefficients (Beta) of the significant predictors of psychological symptoms; results of the final models of a series of hierarchical, multiple, linear regression analyses*[1]

Dependent variable	Psoriasis	Urticaria	Age	Sex	DLQI	Adjusted R^2
BDI	–	–	–	–	0.59***	0.26
BSI-grand total	0.13*	–	−0.12*	−0.11*	0.44***	0.23
BSI-somatization	0.17**	0.13*	0.12*	–	0.44***	0.20
BSI-interpersonal sensitivity	–	–	−0.21***	−0.15**	0.26***	0.16
BSI-anxiety	–	–	–	–	0.40***	0.16
BSI-hostility	–	–	−0.23***	–	0.31***	0.14
BSI-paranoia	0.17**	–	−0.19***	–	0.24***	0.12

[1]Independent variables entered in the equation: step 1, diagnosis; step 2, age, sex, disease severity, disease duration; step 3, DLQI scores: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

DLQI, Dermatology Life Quality Index; BDI, Beck's Depression Inventory; BSI, Brief Symptom Inventory.

simultaneously as independent variables. When controlling for the remaining items, only item 8 ('How much has your skin created problems with your partner or any of your close friends or relatives?') emerged as a significant predictor of suicidal ideation (B = 0.42; odds ratio: 1.53; 95% CI: 1.07 – 2.19; $p < 0.05$). Significantly ($p < 0.05$) more hospitalized patients (18.0%) reported that they had thoughts about suicide than outpatients (10.2%). When we analysed the few patients who reported that they had 'serious thoughts about committing suicide' or 'would commit suicide, if they had the opportunity', there were no significant differences between diagnoses or between hospitalized patients, outpatients and healthy controls.

DISCUSSION

Our results showed that with the exception of the compulsive subscale of the BSI, the 172 hospitalized patients scored higher than healthy controls on all the psychological variables measured, including depression, anxiety, phobia, hostility, paranoia, somatization, interpersonal sensibility and psychoticism. Hospitalized patients also scored higher than outpatients on anxiety, somatization and all measures of depression. The differences found between hospitalized patients and outpatients in psychological symptoms remained statistically significant when we controlled for severity and duration, and as there were no age or gender differences between the three groups, the differences found may thus be presumed to be unrelated to disease characteristics or age and gender differences between groups. Possible seasonal influences also seem to be adequately controlled for. Our findings are in concordance with previous findings, e.g. the results of Badoux & Levy (5), who found that urticaria and asthma patients had more psychological symptoms than healthy controls but fewer symptoms than psychologically distressed, but somatically healthy, individuals. As the higher number of psychological symptoms in the group of hospitalized patients was not explained by greater disease severity, the difference found between hospitalized and outpatients could be due to other factors, e.g. factors concerning the hospitalization in itself.

The female patients in our sample reported greater impairment of disease-related QoL and more psychological symptoms than male patients. Our findings are in concordance with the results of previous studies (5, 11). In a study by Picardi et al. (11), a higher prevalence of psychiatric morbidity was found in female outpatients with lesions on the face and the hands, suggesting that the impact of the disease on psychological symptoms could be mediated by its effect on the visible parts of the skin (18). Although we did not specifically measure the areas afflicted, this hypothesis seems to be supported by our findings that the difference in QoL between men and women was primarily associated with differences on items related to appearance and embarrassment. Women also scored higher on the BSI-subscale of interpersonal sensibility, which measures difficulties in coping with interpersonal relations. Women may respond differently to men to a disfiguring disease (19) and, compared with men, in most studies women have been found to experience greater interference with their relations with other men and women and with their sex life, and report more subjective stress and worry (12). It should, however, be noted that gender differences in disease-related QoL are not found in all studies (7, 20).

Age was inversely related to both disease-related QoL and psychological symptoms, even when controlling for the remaining demographic and disease-related factors measured in our study. This is in accordance with previous findings for psoriasis and other dermatology patients (7, 20 – 22). One explanation could be that older individuals may be less emotionally affected by interpersonal difficulties than younger subjects and may also have learned to cope better with certain aspects of living with skin disease. On the other hand, older age has generally been found to be associated with greater emotional control and reduced emotional expressivity (23, 24), and the inverse relationship may thus reflect a general tendency of the older patients to express fewer negative emotions, rather than a greater ability to cope with disease as such. Correlations between disease severity and QoL and depression were similar in younger and older patients, and age was inversely related to most psychological variables when controlling for the other factors measured in our study. Our results thus suggest that the impact of disease on QoL and psychological well-being may be just as great in older as in younger patients, and previous findings of fewer psychological problems in older patients may thus reflect a general tendency of the elderly to report fewer psychological symptoms.

When we compared the diagnosis groups, psoriasis and atopic dermatitis patients generally scored higher on most variables. However, when we controlled for other factors, including age, disease duration, disease severity and QoL, only a few differences in the psychological problem profile emerged. Psoriasis was thus associated with increased scores on the BSI subscales of somatization and paranoia, and urticaria was associated with increased somatization. When controlling for the remaining variables, including impairment of QoL, atopic dermatitis was unrelated to any of the psychological symptoms measured. This finding is not in accord with the theory that atopic dermatitis is associated with specific psychological problems such as anxiety, anger and paranoia (12, 25 – 27), and indicates that the 'specific psychological profile' often found for atopic dermatitis patients may

be related to disease severity and the impact of the disease on disease-related QoL, rather than a specific atopic dermatitis personality (28). We have no clear explanation as to why a diagnosis of psoriasis was specifically associated with scores on the BSI subscale of somatization and paranoia, while atopic dermatitis was not, but we suspect that the disfigurement and stigmatization experienced by many psoriasis patients play an important role in the development of social anxiety (29–31). When we compared the two largest subgroups of eczema patients, i.e. patients with hand eczema and universal eczema, there were no differences in psychological symptoms or impairment of QoL. This could likewise be due to the general findings that affliction of visible parts of the body, e.g. hands, is an important factor when considering the impact of skin disease on QoL and distress.

The multiple regressions allowed us to analyse the separate influence of each of the factors included. The results generally showed that while factors such as diagnosis and disease severity were associated with psychological symptoms when analysed independently, the associations generally disappeared when DLQI-scores were entered into the equations. After controlling for the other factors, QoL independently predicted almost all psychological variables investigated. This could be interpreted as suggesting that the associations generally found between clinical severity and psychological symptoms are mediated by their impact on disease-related QoL. After controlling for impairment of QoL, only younger age remained a significant predictor of psychological symptoms. The same pattern emerged when we analysed the prevalence of moderate or severe depression. Our results are in concordance with the results of Picardi et al., who found that health-related QoL was a much stronger predictor of psychiatric morbidity than physician-rated disease severity (11). Our findings generally suggest that it is not the disease in itself, but its impact on the daily activities and social relations, that is associated with the increased psychiatric morbidity often found in patients with skin diseases. The psychosocial impact of diseases such as psoriasis, atopic dermatitis, eczema and urticaria seems to be primarily mediated by the impairment of health-related QoL caused by such skin conditions (32).

Findings from previous studies suggest that dermatological diseases such as psoriasis and atopic dermatitis may be associated with an increased risk of suicide and with greater prevalence of suicidal thoughts (6, 33–35). This was confirmed by our findings that 21.2% of the psoriasis patients and 18.9% of the atopic dermatitis patients reported that they had thoughts about suicide within the last 2 weeks, while patients with eczema and urticaria did not differ from healthy controls. Also, more hospitalized patients than outpatients had thoughts about committing suicide. When we focused on the few individuals who had stated that they had 'serious thoughts about committing suicide' or that they 'would commit suicide if given the opportunity', the difference between hospitalized patients, outpatients and healthy controls did not reach statistical significance, a finding that could be due to the relatively small number of subjects in this group.

Patients with generalized pruritus have been shown to exhibit greater depressive symptomatology than other dermatological patients (9), and in a study by Gupta et al. of 252 patients with psoriasis, atopic dermatitis and chronic idiopathic urticaria, it was found that depressive symptoms were correlated with pruritus severity (13). While we did not include a specific measure of pruritus, we found a significant correlation between depressive symptoms measured on the BDI and scores on item 1 of the DLQI, which measures how itchy, sore, painful or stinging their skin has felt. The correlation coefficient found in our study ($R = 0.38$) was similar to that found by Gupta et al. ($R = 0.34$). It may be that itching in itself promotes depressive symptoms. It has previously been shown that experimentally induced depressed mood is associated with increased pain-related brain potentials (36) and increased histamine flare reactions (37), and it may therefore also be possible that depressed mood will increase the inflammatory reaction of the skin and/or reduce the threshold for pruritus.

Our results confirm that dermatological problems are more than a cosmetic nuisance and can be associated with psychosocial effects that seriously affect patients' lives in ways comparable to other disabling diseases. This is underscored by the increased prevalence of suicidal thoughts in patients with skin diseases. The results also suggest that the impact of disease on QoL and psychological well-being may be just as great in older as in younger patients, and previous findings of fewer psychological problems in older patients may thus reflect the known general tendency of the elderly to report fewer psychological symptoms. Dermatologist-rated disease severity seems only to give an indirect indication of the psychosocial disability caused by dermatological diseases, and the psychosocial impact of diseases such as psoriasis, atopic dermatitis, eczema and urticaria seems to be primarily mediated by the impairment of disease-related QoL caused by such skin conditions.

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