

Occupational contact dermatitis has an appreciable impact on quality of life

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In this study, we examined the impact of occupational contact dermatitis on quality of life. 181 patients, diagnosed with occupational contact dermatitis over a period of 3 years (1996–1999 inclusive), were sent a questionnaire based on the Dermatology Life Quality Index (DLQI) and the Short Form-36 (SF-36). 60 (32%) patients were in industrial occupations and 27 (14%) in health care. An overall response rate of 39% ($n=70$) was obtained. The median DLQI score was 5, with a mean score 6.6 (SD 6.4), which is similar to that seen in Behçet's syndrome and urticaria. There was no statistically-significant difference between male and female median scores ($p=0.98$) and no significant correlation between age and DLQI score nor between DLQI score and time from diagnosis. The most problematic quality of life areas were symptoms and feelings. Males scored highest in problems associated with work, relationships and treatment, whereas females scored highest in problems associated with symptoms and feelings, daily activities and leisure. The SF-36 scores showed an association between physical problems and emotional problems affecting work. From this study, it can be seen that occupational contact dermatitis has an appreciable impact on quality of life.

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Occupational health has become an issue of increasing importance, for employers and workers alike. Occupational diseases are to varying extents preventable and employers may be liable for compensation. In the UK, skin disease accounts for 22% of occupational diseases, and is the 2nd commonest cause after musculoskeletal disorders (1). 80% of occupational skin disease is due to contact dermatitis, an estimated annual incidence of 1.29 cases per million employed (1). A recent study in Sheffield showed that 17% of 1153 patients patch tested over a 3-year period had occupational contact dermatitis (2).

Occupational contact dermatitis can occur at any working age and the average age of onset varies from one occupation to another and between the sexes (3). The incidence in females is greatest at a young age, whereas the incidence in men increases with age (3). The hands are most often affected (3). The most common allergen in women is nickel and in men chromate (3). Occupational contact dermatitis often has a poor prognosis (3); in follow-up studies of metal workers and construction workers with chromate dermatitis, around 70% had ongoing dermatitis, irrespective

of a change in occupation or allergen avoidance (4, 5).

Several studies on the impact of skin conditions on quality of life have shown variation between different skin diseases (6–15). To date, only 1 group of authors has studied quality of life in contact dermatitis, using a newly constructed dermatology-specific quality of life (DSQL) scale (16). This DSQL scale has been used to evaluate quality of life in only 1 other skin condition, namely acne. In this study, our objective was to use more widely accepted quality of life instruments to investigate the impact of occupational contact dermatitis on quality of life and to compare this with other skin conditions.

Materials & Methods

Patients aged 18 years and above (no upper age limit), diagnosed with occupational contact dermatitis while attending the contact dermatitis clinic over the period January 1996 – June 1999, were identified from a computerized database. Each patient was sent a self-directed questionnaire based on the Dermatology Life Quality Index

(DLQI) (8) and 2 sections from the 36-Item Short Form Health Survey (SF-36) (17).

The DLQI has undergone reliability testing (8) and responsiveness testing (18) and has been cross-validated with the UK Sickness Impact Profile (15), the SF-36 (10) and the General Health Questionnaire (13). It has already been used to study quality of life in a large number of skin conditions (6–15). The questionnaire consists of 10 questions, which cover 6 aspects of daily life. Answers range from ‘very much’ to ‘not at all’. Each question scores a maximum of 3. The total score is out of 30. For analysis, the questions are grouped into 6 categories: symptoms and feelings (maximum score 6), daily activities (maximum score 6), leisure (maximum score 6), work and school (maximum score 3), personal relationships (maximum score 3) and treatment (maximum score 3). To enable comparison between sections, the scores for the sections are expressed as percentages rather than absolute figures (8).

The SF-36 is another means of measuring quality of life, and can be applied to any medical condition. It looks at 8 areas: physical function, social function, mental health, energy/vitality, bodily pain, perceived health, limit to work/rôle due to physical health and limit to work/rôle due to emotional problems (17). Recently, in a French study, SF-36 was compared with a quality of life measurement VQ-Dermato, and showed a good correlation in a series of 231 patients with a variety of chronic skin diseases (19). For the purpose of this study, only the 2 sections relating to work have been used because of their particular relevance to occupational performance.

Results

A total of 181 patients aged 18 to 67 years (53% male, 47% female) were identified from the computer database. 31 patients (17%) had been diagnosed less than a year, 48 (27%) between 1 and 2 years, 48 (27%) between 2 and 3 years and 54 (30%) between 3 and 4 years. 60 patients (32%) worked in the industrial sector (mainly in the metalworking industries), 27 (14%) in health care, 14 (7%) in catering, 9 (5%) in hairdressing, 8 (4%) in cleaning and 4 (2%) in retail, clerical work and transport, respectively (57 (31%) unspecified). 70 of the 181 patients replied, giving a response rate of 39%.

DLQI scores

The mean DLQI score was 6.6 (SD 6.4) and the median score was 5. Scores ranged between 0 and 27 (interquartile range 1–11; Fig. 1). The mean

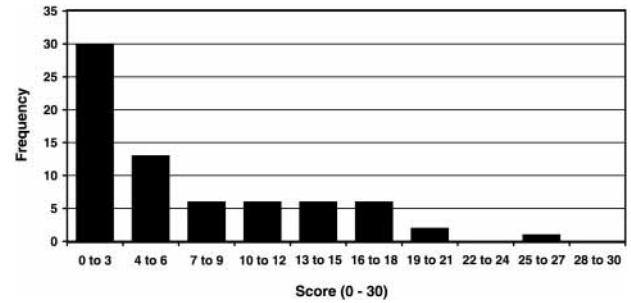


Fig. 1. Frequency of DLQI scores ($n=70$).

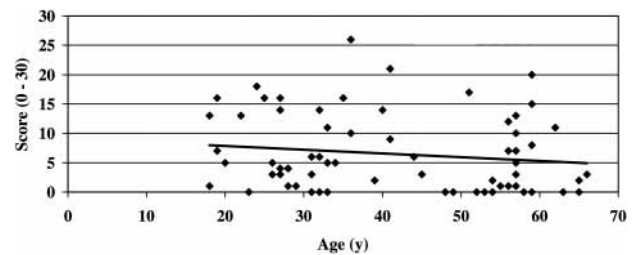


Fig. 2. Scatterchart showing DLQI scores for different ages in both men and women ($n=70$).

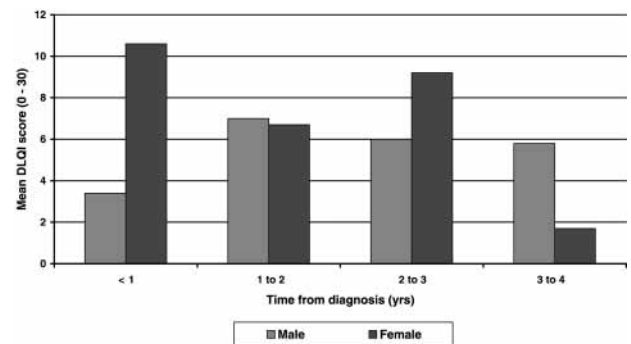


Fig. 3. Mean DLQI scores and time from diagnosis.

score for males was 5.6 (median 3) and for females was 7.8 (median 5.9). The difference between the scores in males and females was not statistically significant ($p=0.98$).

There was no correlation between DLQI score and age (correlation co-efficient -0.15 , $p<0.02$; Fig. 2). With regard to time from diagnosis, the highest score was in females less than a year from diagnosis (mean 10.5) and the lowest in females 3 to 4 years from diagnosis (mean 1.7) (Fig. 3). There was no overall correlation between time from diagnosis and mean DLQI score.

The highest section score for men was for work (35%) and for women was for symptoms and feelings (51%; Fig. 4). Overall, symptoms and feelings were most affected, whereas leisure activities were least affected. In both men and women, work was

not prevented but was certainly affected (score 35% and 31%, respectively).

SF-36 findings

7 questions were used to evaluate the effect on work of physical health or emotional problems (Table 1). 17 men (45%) and 17 women (53%) were not affected at work by physical health or by emotional problems. Of those whose work was limited, 85% men and 83% women were affected by both physical health and emotional problems.

Discussion

The mean DLQI scores for occupational dermatitis and other skin conditions are shown in Table 2. Patient selection and methodology varies between different studies, e.g. patients have been recruited from outpatient departments (7, 8, 10, 11, 14, 15), specialist clinics (6) and patient support groups (9, 12, 13) so the mean DLQI scores may not be directly comparable. From the overall mean score of 6.6, it appears that the impact of occupational dermatitis on quality of life is similar to that of acne, non-pressure urticaria, Darier's disease, Hailey-Hailey disease and Behçet's syndrome.

Compared to atopic dermatitis, the quality of life in occupational contact dermatitis appears to be better. In occupational contact dermatitis, temporary relief may occur at weekends and holidays, whereas in atopic dermatitis remissions are generally less predictable. The hands are usually affected in occupational contact dermatitis whereas atopic dermatitis may affect the face and other sites, which could cause more embarrassment and thus affect daily activities, leisure, work and relationships to a greater extent. It may also be significant that quality of life in this study was assessed after patch testing. 1 study has shown an improved quality of life in patients with allergic contact dermatitis after patch testing (20).

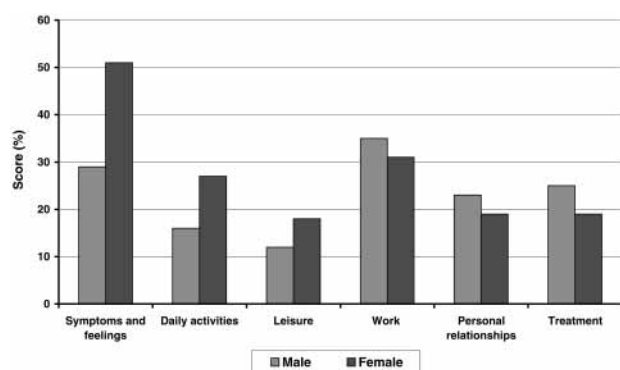


Fig. 4. DLQI section scores for men and women.

Table 1. SF-36 findings

Item	Physical health		Emotional problems	
	Male (%)	Female (%)	Male (%)	Female (%)
Decreased time spent on work	26	28	18	25
Accomplished less at work	45	35	45	31
Limited in kind of work possible	39	40	—	—
Difficulty in performing work	39	40	—	—
Did work less carefully	—	—	26	19

Table 2. Quality of life studies into skin conditions

Skin condition	No. patients	Mean DLQI	Authors
Urticaria with DPU	26	12.9	Poon et al., 1999 (6)
Atopic eczema	81	12.5	Shum et al., 2000 (7)
Psoriasis	52	8.9	Finlay & Khan, 1994 (8)
Hair loss	70	8.3	Williamson et al., 1997 (9)
Acne	111	7.5	Mallon et al., 1999 (10)
Urticaria without DPU	47	7.5	Poon et al., 1999 (6)
OCD	70	6.6	Current study
Hailey-Hailey	66	6.1	Harris et al., 1996 (11)
Darier's	137	5.9	Harris et al., 1996 (11)
Behçet's	325	5.7	Blackford et al., 1997 (12)
Vitiligo	614	4.8	Kent et al., 1996 (13)
Solar keratosis	63	2.6	Finlay et al., 1999 (14)
Seborrheic wart	75	2.5	Finlay et al., 1999 (14)
Basal cell carcinoma	37	1.6	Blackford et al., 1996 (15)
Melanocytic naevus	204	1.7	Finlay et al., 1999 (14)

Occupational contact dermatitis had most impact on symptoms and feelings. This has also been shown in atopic eczema, urticaria, Hailey-Hailey disease, Darier's disease and Behçet's syndrome. From the SF-36, it can be seen that those whose work was affected by physical health were also affected by emotional problems, suggesting an association between physical affliction and emotional problems.

It was interesting that there was no correlation between mean DLQI score and age or time from diagnosis, as it might have been expected that older patients or those who had been diagnosed the longest would have adapted to their condition or have responded to treatment. However, allergen avoidance or changing occupations often does not lead to relief from dermatitis (4, 5).

There are some limitations to this study. The re-

sponse rate of 39% is low but the actual sample size of 70 patients is comparable to that of other quality of life studies into dermatological conditions (Table 2). Some patients were over 3 years from diagnosis and there is no data on the current severity of their dermatitis, whether it was controlled with treatment or if they had changed occupations. This may result in an underestimate of the effect on quality of life from our survey. However, other quality of life studies have shown a poor correlation between severity of skin condition and DLQI score (10, 11, 13).

In conclusion, this is the 1st study of the impact of occupational dermatitis on quality of life. Despite a low response, several observations can be made. There was no significant difference between male and female scores. There was no significant correlation between age and score, and time from diagnosis and score. Symptoms and feelings were affected most, daily activities and leisure least. Work was generally not prevented, although it was affected and more in males than females. The results show that the apparent effect is smaller than in some other conditions, in particular atopic dermatitis. Nonetheless, occupational contact dermatitis has an appreciable impact on quality of life.

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