

10 Years Experience of the Dermatology Life Quality Index (DLQI)

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The Dermatology Life Quality Index, the first dermatology-specific health-related quality of life (HRQoL) questionnaire, was published in 1994 (Finlay and Khan, 1994). There is now 10 years experience with over 85 peer reviewed research articles and 52 published abstracts describing its use: there are also many current studies worldwide using the DLQI as an outcome measure. The aim of this review article is to provide detailed information about where to find any published aspect of the DLQI so that the reader can readily decide whether the DLQI may be appropriate for their use. The DLQI was designed to be simple and easy to use in a busy clinical setting: wide experience of its use has confirmed the appropriateness of this concept.

There are other well-validated similar outcome measures: these include Skindex (Chren *et al*, 1996), Dermatology Quality of Life Scales (Morgan *et al*, 1997), and Dermatology-specific Quality of Life Instrument (Anderson and Rajagopalan, 1997). de Korte *et al* (2002) and de Tiedra *et al* (1998) have compared the characteristics of various HRQoL outcome measures used in dermatology. Many concepts to be considered when choosing quality of life measures in dermatology have been reviewed (Finlay, 1997).

DLQI Description

The DLQI consists of 10 questions concerning symptoms and feelings, daily activities, leisure, work, and school, personal relationships and treatment.

Each question is answered by a tick box: “not at all”, “a little”, “a lot” or “very much”. Each question is scored from 0 to 3 and the scores summed, giving a range from 0 (no impairment of life quality) to 30 (maximum impairment). All questions relate “to the last week”. The DLQI was designed to be used in adults over the age of 18 years.

Methods

The articles and abstracts in which the DLQI has been used have been identified by searching Medline, PubMed, and

Abbreviations: DLQI, Dermatology Life Quality Index; HRQoL, health-related quality of life

Declaration of interest: Prof. Andrew Y Finlay is joint copyright holder of the DLQI and the CDLQI.

the Science Citation Index, and by a constant review of the major dermatology literature over the last 10 years up to December 2003.

Validation

Comparison with normal population The DLQI questions were designed to be specific to skin disease, with all 10 questions mentioning skin. There is a very high specificity of the DLQI when compared with the normal population, confirmed in seven studies (Table I). The mean DLQI scores (maximum 30) in normal populations ranged from 0 to 0.5.

Repeatability The ability of a questionnaire to give a closely similar score if repeated after a short time in a patient with stable disease is an important characteristic to be fulfilled. This has been confirmed for the DLQI in four studies (Table II).

Internal consistency Internal consistency for the DLQI has been examined in five studies (Table III). These have demonstrated Cronbach's α scores ranging from 0.83 to 0.93. Rank correlation has also been measured. This test determines the degree of consistency of responses between questions. The higher the rank correlation value the higher the consistency.

Sensitivity to change For any outcome measure to be of value in the assessment of intervention, the measure must be sensitive to change. This has been confirmed for the DLQI in 53 studies describing sensitivity to change in 11 diseases (Table IV), and interventions within seven different health service research settings (Table V). It should be noted that all the questions in the DLQI relate to “over the last week”. It is therefore not appropriate to administer the DLQI to an individual at an interval of less than 1 week.

Validation with other HRQoL measures and other outcome measures The DLQI has been used in parallel with nine other dermatology specific measures (Table VI) and with seven general health measures (Table VII). Other general health measures that have been used in comparison with the DLQI are willingness to pay (Lundberg *et al*, 1999) and total illness burden (Fivenson D *et al*, 2002). An illustrated version of the DLQI (Loo *et al*, 2003) has been evaluated, but it was not possible to demonstrate exact equivalence to the text only version.

Table I. DLQI used in the normal population

Number of normal population	Number of patients	Disease	Mean DLQI normal population	Mean DLQI patients	References
100	237	Eczema	0.3	4.2	Badia et al (1999)
		Psoriasis		4.5	
100	200	All	0.5	7.2	Finlay and Khan (1994)
14	19	Operating room nurses	0	3.3	Hachem <i>et al</i> (2002)
22	32	Atopic dermatitis	–	–	Linnert and Jemec (1999)
100	300	Outpatients	0.4	7.9	Zachariae et al (2000)
		Inpatients		12.9	
100	340	All	0.5	9.6	^a
28	48	Psoriasis	0.1	12.5	^a
–	–	–	–	–	^a

^aEtemesi BA: Quality of life in Tanzanian adults with chronic skin disease. *Ann Dermatol Venereol* 129:1S253, 2002 (abstract).

^bUrbanowski S, Kosmowski W, Quality of life, psychological condition, depression and alexithymia in patients with psoriasis vulgaris. *Ann Dermatol Venereol* 129:1S798, 2002 (abstract).

^cFinlay AY, Myron E, Taieb C: Immoderate exposure to the sun: short-term impact on quality of life. *J EADV* 17:62, 2003 (abstract).

Time for completion The mean time for completion of the text only version of the DLQI is 124 s (Loo *et al*, 2003). The mean time taken for a cartoon and text version was reduced to 88 s. Hahn *et al* (2001) recorded that patients took between 1 and 3 min to complete the DLQI.

Meaning of scores There has been very little published concerning the absolute meaning of dermatology HRQoL scores and the nature of the minimally important score change. The minimally important score change is the score change that is considered by a patient to be clinically relevant in contrast to a score change which might be statistically significant. Preliminary work concerning this has been carried out for the DLQI^{1,2}.

Table II. Test-retest repeatability of the DLQI

Number of patients	Statistical test	References
94	Interclass correlation coefficient Eczema 0.77 (95% CI) Psoriasis 0.90 (95% CI)	Badia <i>et al</i> (1999)
53	Spearman's rank correlation Overall $r = 0.99$ $p < 0.0001$ Individual questions $r = 0.95-0.98$ $p < 0.001$	Finlay and Khan (1994)
38	Spearman's rank correlation coefficient 0.97 $p < 0.0001$	Jobanputra and Bachmann (2000)
26	Reliability General 0.93 $p < 0.01$ Individual items 2-10 Range 0.62-0.88 $p < 0.001$ Item 1 0.32 (not significant)	Zachariae <i>et al</i> (2000)

Diseases Where DLQI Used

The DLQI has been used in over 36 different skin conditions (Table VIII). It has been most widely used in psoriasis (30 studies), atopic eczema (21 studies), acne (10 studies), vitiligo (five studies) and chronic urticaria (four studies).

Health Service Research

The use of HRQoL measures is particularly appropriate as an outcome measure in health service research, as the data generated give insight into the "consumer's" viewpoint. The DLQI can be rapidly and accurately completed by patients unaided and be administered by post with minimal instructions, characteristics of benefit in large-scale studies. Fourteen studies are summarized in Table V.

Countries In Which DLQI Used

Although the DLQI was created in the United Kingdom, it has been used in at least 20 countries (Table IX) and it

¹ Khilji FA, Gonzalez M, Finlay AY: Clinical meaning of change in Dermatology Life Quality Index scores. *Br J Dermatol* 147(Suppl. 62):50, 2002 (abstract).

² Hongbo Y, Harrison MA, Salek MS, Finlay AY: Assessing the meaningfulness of Dermatology Life Quality Index (DLQI) scores. *J EADV* 17(Suppl. 3):113, 2003 (abstract).

Table III. Internal consistency of the DLQI

Number of patients	Statistical test	References
237	Cronbach's alpha 0.83	Badia <i>et al</i> (1999)
200	Rank correlation range 0.23–0.70 p = 0.002	Finlay and Khan (1994)
607	Cronbach's alpha 0.83 Inter-item rank correlation coefficient range 0.04–0.54	Jobanputra and Bachmann (2000)
230	Cronbach's alpha 0.9 Paired correlation between items range 0.20–0.76 p < 0.01	Mork <i>et al</i> (2002a, b)
300	Cronbach's alpha 0.88	Zachariae <i>et al</i> (2000)

Table IV. Treatments in which the DLQI has been used

Condition and treatment	No. of studies	No. of patients evaluated post-treatment	Mean DLQI		References	Additional references where DLQI score not stated
			Before	After		
Acne—adapalene	2	877	12.9	1.3	Grosshans <i>et al</i> (1998) ^a	
Blue light phototherapy	1	21	6.1	4	^b	
Isotretinoin	2	104	6.7	2.8	Newton <i>et al</i> (1997); Grosshans <i>et al</i> (1998)	
Amyotrophic lateral sclerosis—botox	1	5	–	–		Giess <i>et al</i> (2000)
BCC—surgery	1	37	5.3	1.3	Blackford <i>et al</i> (1996)	
Bullous pemphigoid—treatment	1	153	6	2.1	Rzany <i>et al</i> (2000)	
Chronic urticaria—fexofenadine	1	57	11.6	10.3	Thompson <i>et al</i> (2000)	
Cosmetic camouflage	3	156	9.1	5.7	Holme <i>et al</i> (2002); Boehncke <i>et al</i> (2002)	^c
Eczema—autologous blood therapy	1	15	8.4	4.1	Pittler <i>et al</i> (2003)	
Cyclosporin	2	137	15.7	6.3	Czech <i>et al</i> (2000) ^d	
Pimecrolimus	2	353	–	–		Reilly <i>et al</i> (2003) ^e
Psychotropic medicines	2	163	21.3	6.9	^{f,g}	
Tacrolimus	1	985	–	–		Drake <i>et al</i> (2001)
Topical steroids	1	114	4.4	1.6	Badia <i>et al</i> (1999)	
UVB	1	12	10.8	3.6	Piletta <i>et al</i> (1996)	
Hirsutism—ruby laser	1	15	12.8	7	Loo and Lanigan (2002)	
Hydrotherapy	1	200	10.2	5.7	^h	
Hyperhidrosis—botox	1	94	10.3	8.8	Swartling <i>et al</i> (2001)	Campanati <i>et al</i> (2003)
Endoscopic transthoracic sympathectomy	1	33	–	–		ⁱ
Lymphoedema—skin hygiene	1	11	10.9	4.1	McPherson (2003)	
Psoriasis—Alfacept	6	317	11.3	6.9	Finlay <i>et al</i> (2003)	Ellis <i>et al</i> (2003) ^{j,k,l,m,n,o}
Clobetasol proprionate foam	1	16	–	–		Bergstrom <i>et al</i> (2003)
Cyclosporin	4	388	10.9	1.3	Touw <i>et al</i> (2001); Ho <i>et al</i> (2001) ^{p,q}	
DAB ₃₈₉ IL-2	1	29	10.8	5.9	Bagel <i>et al</i> (1998)	
Efalizumab	4	1008	12	6.9	Gordon <i>et al</i> (2003); Shikar <i>et al</i> (2003)	^r
Etanercept	1	57	14	–	Gottlieb <i>et al</i> (2003)	^{s,t}

Table IV. Continued

Condition and treatment	No. of studies	No. of patients evaluated post-treatment	Mean DLQI		References	Additional references where DLQI score not stated
			Before	After		
Heliotherapy	1	87	–	–		Amir <i>et al</i> (2001)
Hu1124Ab	1	52	11.9	5.7	^u	
Infliximab	1	7	–	–		Chan and Gebauer (2003)
Supervised climatotherapy	1	459	1.5	0.9	Mork <i>et al</i> (2002 b)	
Topical steroids	1	123	4.8	2.7	Badia <i>et al</i> (1999)	
Vitiligo—pigmentary clinic	1	141	10.7	7.1	Parsad (2003)	
Cognitive behavioral therapy	1	21	15	5	Papadopoulos, Bor R and Legge <i>et al</i> (1999)	
Cosmetic camouflage	1	62	7.3	5.9	^v	

^aSamgin MA, Monakhov SA. Adapalene gel 0.1% in the treatment of acne in Moscow. *JEADV* 17(Suppl. 3):166, 2003.

^bAmmad S, Edwards C, Gonzalez M, Mills CM. The effect of blue light phototherapy on mild to moderate acne. *Brit J Dermatol* 147(Suppl 62):95, 2002 (abstract).

^cFeldman SR, McMichael A, Balkrishnan R, Rapp SR, Crambes O, Abella ML, Bouloc A. The effect of corrective cosmetics on quality of life of patients with facial disfigurements. *JEADV* 17(Suppl. 3):202, 2003.

^dKochergin, NG, Burova EP. Life quality assessment in psoriasis and atopic dermatitis. *JEADV* 15(Suppl. 2):186, 2001 (abstract).

^eMeurer M, Folster-Holst R, Brautigam M. Primecrolimus (SDZ ASM 981) cream improves disease control and quality of life in the long-term management of atopic dermatitis in adults. *Ann Dermatol Venereol* 129:1S47, 2002 (abstract).

^fKochergin, NG, Burova EP. Life quality assessment in psoriasis and atopic dermatitis. *JEADV* 15(Suppl. 2):186, 2001 (abstract).

^gLvov AN, Ivanov OL, Ostrishko VV, *et al*. Psychoneurological parameters and quality of life in patients with severe forms of atopic dermatitis. *JEADV* 15(Suppl. 2):276, 2001 (abstract).

^hSegard C, Verriere F, Nocera T, Myon E, Taieb C. Impact of hydrotherapy care on the quality of life of patients' suffering from skin disease. *Qual Life Res* 12:777, 2003.

ⁱNicolaou M, Swan MC, Paes T. Endoscopic transthoracic sympathectomy: the effect on the quality of life of patients with facial, palmar and axillary hyperhidrosis and facial blushing. *JEADV* 16(Suppl. 1):298, 2002 (abstract).

^jChristophers E, Bourcier M, Griffiths C, *et al*. Study design and demographics of a randomised, double-blind, placebo-controlled phase 3 dose-comparison study to evaluate weekly intramuscular administration of alefacept in chronic plaque psoriasis. *JEADV* 15(Suppl. 2):249, 2001 (abstract).

^kGriffiths C, Langley R, Lebwohl M, *et al*. Alefacept improves psoriasis and quality of life: Results of an international trial. *Ann Dermatol Venereol* 129:1S280, 2002 (abstract).

^lPapp K, Ellis C, Menter A, *et al*. Alefacept improves psoriasis and quality of life: Results of a multiple-course trial. *Ann Dermatol Venereol* 129:1S764, 2002 (abstract).

^mGriffiths CEM, Humbert P, Koo J, Ortonne JP, Christophers E. Relationship between clinical response and quality of life in psoriasis patients treated with alefacept. *JEADV* 16(Suppl. 1):292, 2002 (abstract).

ⁿLangley R. An improvement of 50% or more in psoriasis area severity index (PASI) represents substantial improvement for patients treated with alefacept. *JEADV* 17(Suppl. 3):139, 2003.

^oChristopher E, Vanishnaw AK. A broad spectrum of patients with psoriasis benefit from alefacept therapy. *JEADV* 17(Suppl. 3):138, 2003.

^pKochergin NG, Burova EP. Life quality assessment in psoriasis and atopic dermatitis. *JEADV* 15(Suppl. 2):186, 2001 (abstract).

^qChaidemenos C, Avgoustinaki N, Karakatsanis G, Chatzistilianos M, Papakonstantinou M, Mourellou O. Effect of intermittent and continuous cyclosporin therapy on the clinical and quality of life parameters of psoriasis. *JEADV* 17(Suppl. 3):381, 2003.

^rSterry W. Psoriasis—impact on QoL—efalizumab positive outcomes. *JEADV* 17(Suppl. 3):439, 2003.

^sCarey W, Gulliver WP. Efalizumab therapy improves and sustains health-related quality of life in patients with moderate to severe plaque psoriasis. *JEADV* 17(Suppl. 3):371, 2003.

^tOuellet JP, Toth D, Gratton D. Efalizumab provides rapid onset of clinical benefit in patients with moderate to severe plaque psoriasis. *JEADV* 17(Suppl. 3):371, 2003.

^uBissonnette R, Papp KA, Garovoy M, Walicke P, Watrous W. Hu 1124 improves dermatological-specific quality of life in subjects with moderate-severe psoriasis. *J Eur Acad Dermatol Venereol* 14(Suppl. 1):255, 2000 (abstract).

^vDierckxsen L, Ongenaes K, van Geel N, Naeyaert J. Vitiligo and quality of life: impact of complexion corrector. *JEADV* 17(Suppl. 3):358, 2003.

is currently being used in several others. The concepts described in the 10 questions are very simple and ask about very basic human concerns. The questions have consequently been found to be appropriate across many different cultures. One should not, however, assume that the questions are necessarily universally appropriate: for example, the question about sexual difficulties may not be acceptable in some cultures.

Languages

The DLQI has been translated into at least 21 different languages (Table X). Other translation processes are currently underway. The majority of these translations are fully validated with appropriate independent forward and back translation, appropriate correction and further forward and backward

translation. This is to ensure that the scores gained from the use of the DLQI in different languages can be compared.

Children's Version

There is a children's version of the DLQI (Lewis-Jones and Finlay, 1995), the Children's Dermatology Life Quality Index (CDLQI). A text and cartoon version of this has been described (Holme *et al*, 2003): the cartoon version is more quickly completed by children than the text-only version and is preferred by them.

Discussion

There are several reasons for trying to measure the impact of skin disease on patients' lives. HRQoL measures provide

Table V. Health Service Research using the DLQI

Type of Care	Relevant disease	Number of patients	DLQI		References	References with insufficient data
			Before	After		
Day case treatment	Psoriasis	33	10.5	7.2	Haynes (2000)	
Inpatient treatment	All	619	12.3	6.7	Kurwa and Finlay (1995); Haynes (2000); Vensel <i>et al</i> (2000); Helbling <i>et al</i> (2002)	Ayyalaraju <i>et al</i> (2003)
Nurse follow-up clinics	Eczema psoriasis	381	10.7	7.6	Gradwell <i>et al</i> (2002) ^a	
Outpatient consultation with dermatologist	All	2487	4.6	3.1	^b Shum <i>et al</i> (2000)	^c
Patch testing	Eczema	179	8.7	5.5	Thompson <i>et al</i> (2002); Woo <i>et al</i> (2003)	
Primary care	All	341	7.4	–	Harlow <i>et al</i> (2000)	
Primary care dermatology liaison nurses	Psoriasis eczema	35	6.1	4.6	Kernick <i>et al</i> (2000)	
Teledermatology treatment time	All	123	6.3	–	Williams <i>et al</i> (2001)	
	All	53	10.8	–	Jemer and Kynemund (2001)	

^aWong CSM, Sewell M, Yell J. Nurse practitioners compare favourably with doctors in the treatment of eczema and psoriasis. *Brit J Dermatol* 149(Suppl 64):4–5, 2003.

^bFinlay AY, Coles EC, Lewis-Jones MS, *et al*. Quality of life improves after seeing a dermatologist. *Brit J Dermatol* 139(Suppl. 51):15, 1998 (abstract).

^cBerger K, Kugland B, Khlken B, Augustin M. Cost of chronic plaque psoriasis in Germany: An analysis from the patients and payer perspectives. *J Eur Acad Dermatol Venereol* 17(Suppl. 1):36, 2003 (abstract).

a patient orientated and relevant outcome measure in the assessment of new therapies and in comparing different ways of delivering health care. They provide a way of being able to compare the impact of different skin diseases, and

compare the impact of skin diseases to diseases affecting other organs. This information may be important to inform decision taking concerning resource allocation in health care systems and for political purposes in emphasizing the

Table VI. Dermatology-specific HRQoL measures and other outcome measures used in parallel with the DLQI

Measure	References	Number of patients	Correlation coefficient p-value
Assessment of the Psychological and Social Effects of Acne (APSEA)	^a	163	r = 0.65 p < 0.001
Acne Quality of Life Scale (AQOLS)	^b	108	p < 0.05
Cardiff Acne Disability Index (CADi)	^a	163	r = 0.65 p < 0.001
Life Activity Impairment Score (LAIS)	^c	300	r = 0.86 p = 0.05
Psoriasis Disability Index (PDI)	Nichol <i>et al</i> (1996)	644	r = 0.82 p < 0.001
Physician's Disease Severity	Harris <i>et al</i> (1996) Jayaprakasam <i>et al</i> (2002)	279 57	Darier's disease p = 0.41 Hailey–Hailey Disease p = 0.08 r = 0.56
PSORIQoL	McKenna <i>et al</i> (2003)	130	r = 0.7
Psoriasis quality of life index (PQLI)	^d	50	r = 0.99
Psoriasis Quality of Life Questionnaire (PQOL)	Koo <i>et al</i> (2002)	474	–

^aClark SM, Goulden V, Finlay AY, Cunliffe WJ. The psychological and social aspect of acne: a comparison study using three acne disability questionnaires. *Brit J Dermatol* 137(Suppl. 40):41, 1997 (abstract).

^bErtam I. Acne and quality of life: Is there a correlation between them in university students. *Ann Dermatol Venereol* 129:1S374, 2002 (abstract).

^cAl-Awadi R, Dykes PJ, Gonzalez M, Finlay AY. Life activity impairment by skin disease. *J Eur Acad Dermatol Venereol* 14(Suppl. 1):54, 2000 (abstract).

^dCallis KP, Carlin CS, Krueger CG. Correlation of National Psoriasis Foundation score components with quality of life measures in psoriasis. *J Invest Dermatol* 121:0357, 2003.

Table VII. General HRQoL measures used in parallel with the DLQI

Measure	References	Number of patients	r-value p-value
Center for Epidemiological Studies Depression Scale (CESD-10)	Williamson <i>et al</i> (2001)	70	r = 0.62 p < 0.0001
Euroqol EQ-5D	Klassen <i>et al</i> (2000)	130	
General health Questionnaire (GHQ-28)	Kent and Al-Abache (1996)	627	r = 0.39 p < 0.001
Nottingham Health Profile (NHP)	Badia <i>et al</i> (1999)	237	r = 0.32–0.12
Patient Generated Index (PGI)	Herd <i>et al</i> (1997)	56	r = –0.4 p < 0.001
	Ruta <i>et al</i> (1998)	65	–
Rosenberg's self-esteem	Mallon <i>et al</i> (1999)	111	r = –0.4 p < 0.001
	Kent and Al-Abadie (1996)	622	r = –0.4 p < 0.001
Short Form Health Survey Questionnaire (SF-36)	Nichol <i>et al</i> (1996)	644	p = 0.001
	Mallon <i>et al</i> (1999)	111	r = –0.5 p < 0.001
	Ruta <i>et al</i> (1998)	65	–
	Lundberg <i>et al</i> (2000)	366	r = –0.27–0.41
	Kiebert <i>et al</i> (2002)	237	r = –0.27–0.58
	Fivenson <i>et al</i> (2002)	107	p < 0.05 r = –0.42–0.57
UK Sickness Impact Profile (UKSIP)	Blackford <i>et al</i> (1996)	44	r = 0.6 p < 0.01

Table VIII. Diseases and conditions in which the DLQI has been used

Condition	Total number from all studies	DLQI			References	Other references with insufficient data
		Range of means	Mean of means	Median of means		
Acne	838	4.3–17.7	11.9	6.1	Finlay and Khan (1994), ^a Newton <i>et al</i> (1997); Grosshans <i>et al</i> (1998); Harlow <i>et al</i> (2000) ^{b,c,d}	Poli <i>et al</i> (2001) ^e
Alopecia areata	11	–	6.2	–	Jobanputra and Bachmann (2000)	
Atopic eczema	1409	4.5–21.4	12.2	11	Finlay and Khan (1994); Kurwa and Finlay (1995); Finlay (1996); Piletta <i>et al</i> (1996); Herd <i>et al</i> (1997); Badia <i>et al</i> (1999); Lundberg <i>et al</i> (1999); Shum <i>et al</i> (2000); Czech <i>et al</i> (2000); Harlow <i>et al</i> (2000); Jobanputra and Bachmann (2000) ^{f,g,h,i}	Linnet and Jemec (1999); Kernick <i>et al</i> (2000); Drake <i>et al</i> (2001); ^j Gradwell <i>et al</i> (2002)
Basal cell carcinoma	52	2–5.3	4.8	–	Finlay and Khan (1994); Blackford <i>et al</i> (1996)	
Behcet's disease	325	–	5.7	–	Blackford <i>et al</i> (1997)	

Table VIII. Continued

Condition	Total number from all studies	DLQI			References	Other references with insufficient data
		Range of means	Mean of means	Median of means		
Bullous pemphigoid	25	–	6	–	Rzany <i>et al</i> (2000)	
Chronic urticaria	518	3.9–10.9	9.9	–	Poon <i>et al</i> (1999); Harlow <i>et al</i> (2000); Jobanputra and Bachmann (2000); Thompson <i>et al</i> (2000)	
Darier's disease	135	–	5.9	–	Harris <i>et al</i> (1996)	
Discoid lupus erythematosus	7	–	5	–	Jobanputra and Bachmann (2000)	
Dystrophic epidermolysis bullosa	32	–	7.5	–	Horn and Tidman (2002)	
Epidermolysis bullosa simplex	57	–	10.7	–	Horn and Tidman (2002)	
Hailey-Hailey disease	66	–	6.1	–	Harris <i>et al</i> (1996)	
Hair loss	70	–	8.3	–	Williamson <i>et al</i> (2001)	
Hidradenitis suppurativa	114	–	8.9	–	Von der Werth and Jemec (2001)	
Hirsutism	15	–	12.8	–	Loo and Lanigan (2002)	
Immoderate sun exposure		–	–	–		^k
Latex allergy	36	–	11	–	^l	
Leg ulcers	19	5.5–7	6.9	–	Harlow <i>et al</i> (2000)	
Lichen planus	5	–	5.8	–	Harlow <i>et al</i> (2000)	
Lymphoedema	68	–	10.9	–	Boehncke <i>et al</i> (2002) ^m	
Melasma	110	3.5–11.5	10.9	–	Jobanputra and Bachmann (2000); Balkrishnan <i>et al</i> (2003)	
Moles	17	1–2.7	2	–	Finlay and Khan (1994); Harlow <i>et al</i> (2000)	
Nodular prurigo	6	–	8.7	–	Jobanputra and Bachmann (2000)	
Occupational contact dermatitis	90	6.6–10.8	7.5	–	Jobanputra and Bachmann (2000); Hutchings <i>et al</i> (2001)	
Primary focal hyperhidrosis	58	–	10.3	–	Swartling <i>et al</i> (2001)	Campanati <i>et al</i> (2003)
Pityriasis rosea	7	–	6.6	–	Harlow <i>et al</i> (2000)	
Pruritus	15	10–10.5	10.3	–	Finlay and Khan (1994); Harlow <i>et al</i> (2000)	
Psoriasis	2468	1.7–18.2	8.8	11.9	Finlay and Khan (1994); Kurwa and Finlay (1995); Nichol <i>et al</i> (1996); ⁿ Bagel <i>et al</i> (1998); Badia <i>et al</i> (1999); Lundberg <i>et al</i> (1999); ^o Harlow <i>et al</i> (2000); Haynes (2000); Vensel <i>et al</i> (2000); Jobanputra and Bachmann (2000); Ho <i>et al</i> (2001);	Ruta <i>et al</i> (1998); ^{u,v} Amir <i>et al</i> (2001) ^{w,x} Ellis <i>et al</i> (2003); ^y

Table VIII. Continued

Condition	Total number from all studies	DLQI			References	Other references with insufficient data
		Range of means	Mean of means	Median of means		
					Touw <i>et al</i> (2002); ^{a,p,q,r,s} Mork <i>et al</i> (2002a, b); Hermansen <i>et al</i> (2002) ^t	
Rosacea/ rhinophyma	38	6.3–7.8	6.7	–	Harlow <i>et al</i> (2000); Hiltcher <i>et al</i> (2001)	
Scabies	7	–	8.6	–	Harlow <i>et al</i> (2000)	
Seborrhoeic dermatitis	50	–	5.9	–	Harlow <i>et al</i> (2000)	^z
Seborrhoeic warts	5	–	1.8	–	Finlay and Khan (1994)	
Sialorrhoea in amyotrophic lateral sclerosis	5	–	–	–		Giess <i>et al</i> (2000)
Solar keratosis	5	–	3.4	–	Finlay and Khan (1994)	
Tinea	10	–	5.5	–	Jobanputra and Bachmann (2000)	
Vitiligo	856	4.8–15	5.6	–	Kent and Al-Abadie (1996); Papadopoulos <i>et al</i> (1999); ^{aa} Parsad <i>et al</i> (2003); ^{ab}	
Warts	24	3.8–6.7	4.7	3.8	Finlay and Khan (1994); Harlow <i>et al</i> (2000); Jobanputra and Bachmann (2000)	

^aClark SM, Goulden V, Finlay AY, Cunliffe WJ. The psychological and social aspect of acne: a comparison study using three acne disability questionnaires. *Brit J Dermatol* 137(Suppl. 40):41, 1997 (abstract).

^bZaghloul SS, Cunliffe WJ, Goodfield MJD. Compliance in acne is highly correlated to psychological well-being and self presentation. *Brit J Dermatol* 147(Suppl. 62):43, 2002 (abstract).

^cAmmad S, Edwards C, Gonzalez M, Mills CM. The effect of blue light phototherapy on mild to moderate acne. *Brit J Dermatol* 147(Suppl. 62):95, 2002 (abstract).

^dKochergin NG, Samgin MA, Monakhov SA. Acne, adapalene and quality of life. *J EADV* 16(Suppl. 1):116, 2002 (abstract).

^eErtam I. Acne and quality of life: Is there a correlation between them in university students. *Ann Dermatol Venereol* 129:1S374, 2002 (abstract).

^fKochergin NG, Burova E P. Life quality assessment in psoriasis and atopic dermatitis. *J EADV* 15(Suppl. 2):186, 2001 (abstract).

^gLvon AN, Ivanov OL, *et al*. Psychoneurological parameters and quality of life in patients with severe forms of atopic dermatitis. *J EADV* 15(Suppl. 2):276, 2001 (abstract).

^hTaieb C, Nocera T, Verriere F, Myon E. Psoriasis and atopic dermatitis: cross-description of patients' quality of life. *J EADV* 17:38, 2003 (abstract).

ⁱHolm EA, Jemec GBE. Why is assessment of health-related quality of life so important? *J EADV* 17(Suppl. 3):304, 2003.

^jMeurer M, Folster-Holst R, Brautigam M. Primecrolimus (SDZ ASM 981) cream improves disease control and quality of life in the long-term management of atopic dermatitis in adults. *Ann Dermatol Venereol* 129:1S47, 2002 (abstract).

^kFinlay AY, Myon E, Taieb C. Immoderate exposure to the sun: short-term impact on quality of life. *J EADV* 17:62, 2003 (abstract).

^lLewis V, Statham B, Chowdhury M. How does the diagnosis of latex allergy affect people's lives? *J EADV* 17(Suppl. 3):124, 2003.

^mMcPherson T, Penzer. A comparison of quality of life and disease severity in 54 patients with lymphoedema in Guyana. *Brit J Dermatol* 149(Suppl. 64):34, 2003.

ⁿFinlay AY, Coles EC, Lewis-Jones MS, *et al*. Quality of life improves after seeing a dermatologist. *Brit J Dermatol* 139(Suppl. 51):15, 1998 (abstract).

^oBissonnette R, Papp KA, Garovoy M, Walicke P, Watrous W. Hu 1124 improves dermatological-specific quality of life in subjects with moderate-severe psoriasis. *J Eur Acad Dermatol Venereol* 14(Suppl. 1):255, 2000 (abstract).

^pLowe N, Lebsack M, Wanders L. Psoriasis patients show improved quality of life when treated with Etanercept. *Ann Dermatol Venereol* 129:1S762, 2002 (abstract).

^qUrbanowski S, Kosmowski. Quality of life, psychological condition, depression and alexithymia in patients with psoriasis vulgaris. *Ann Dermatol Venereol* 129:1S798, 2002 (abstract).

^rZaghloul SS, Goodfield MJD. Compliance in psoriasis: patients' self-reporting and factors affecting medication adherence. *Brit J Dermatol* 147(Suppl. 62):43–44, 2002 (abstract).

^sGriffiths CEM, Humbert P, Koo J, Ortonne JP, Christophers E. Relationship between clinical response and quality of life in psoriasis patients treated with alefacept. *J EADV* 16(Suppl. 1):292, 2002 (abstract).

^tTaieb C, Nocera T, Verriere F, Myon E. Psoriasis and atopic dermatitis: cross-description of patients' quality of life. *J EADV* 17:38, 2003 (abstract).

^uZaghloul S, Gonzalez M, Judodihardjo H, Finlay AY. In psoriasis, the greater the disability, the poorer the topical treatment compliance. *Brit J Dermatol* 141(Suppl. 55):48, 1999 (abstract).

^vChristophers E, Bourcier M, Griffiths C, *et al*. Study design and demographics of a randomised, double-blind, placebo-controlled phase 3 dose-comparison study to evaluate weekly intramuscular administration of alefacept in chronic plaque psoriasis. *J EADV* 15(Suppl. 2):249, 2001 (abstract).

^wGriffiths C, Langley R, Lebwohl M, *et al*. Alefacept improves psoriasis and quality of life: Results of an international trial. *Ann Dermatol Venereol* 129:1S280, 2002 (abstract).

^xPapp K, Ellis C, Menter A, *et al*. Alefacept improves psoriasis and quality of life: Results of a multiple-course trial. *Ann Dermatol Venereol* 129:1S764, 2002 (abstract).

^yOztap MO, Oztap P, Aslan S, Adypen H, Önder M. Comparison of the effects of PUVA and non PUVA treatment on the quality of life of patients with psoriasis vulgaris: a non-randomized, cross-sectional study. *J EADV* 17:59, 2003 (abstract).

^zCalikoglu E, Oztas P, Cetin P. The evaluation of psychiatric tests in seborrhoeic dermatitis patients. *J EADV* 17(Suppl. 3):159, 2003.

^{aa}Ongenaë K, De Schepper S, van Geel N, *et al*. Impact of vitiligo on the quality of life in Belgium. *J EADV* 15(Suppl. 2):232, 2001 (abstract).

^{bb}Dierckxsen L, Ongenaë K, van Geel N, Naeyaert J. Vitiligo: Profile of a Belgian cohort. *J EADV* 17(Suppl. 3):359, 2003.

Table IX. Countries where the DLQI has been used in published research

Country	References
Australia	Chan and Gebauer (2003); Marks <i>et al</i> (2000)
Belgium	Hachem <i>et al</i> (2002) ^a
Canada	<i>b,c,d</i>
Denmark	Jemec and Wulf (1996); Zachariae <i>et al</i> (2000) ^e ; Jemer and Kynemund (2001)
France	Poli <i>et al</i> (2001) ^{f,g,h}
Germany	Augustin <i>et al</i> (1999); Czech <i>et al</i> (2000); Schafer <i>et al</i> (2001); Hiltscher <i>et al</i> (2001); Boehncke <i>et al</i> (2002); Rzany <i>et al</i> (2000); Schmid-Ott <i>et al</i> (2003) ^{i,j,k}
Greece	<i>l</i>
Guyana	McPherson (2003)
India	Parsad <i>et al</i> (2003)
Italy	Mazzotti <i>et al</i> (2003)
Norway	Mork <i>et al</i> (2002a, b)
Russia	<i>m,n,o,p</i>
South Africa	Jobanputra and Bachmann (2000)
Spain	Badia <i>et al</i> (1999)
Sweden	Lundberg <i>et al</i> (1999, 2000)
Tanzania	<i>q</i>
Turkey	<i>r,s</i>
United Kingdom	
USA	Ayyalaraju <i>et al</i> (2003); Vensel <i>et al</i> (2000); Hahn <i>et al</i> , (2001); ^{t,u} Kiebert <i>et al</i> (2002); Fivenson <i>et al</i> (2002); Koo <i>et al</i> (2002) Balkrishnan <i>et al</i> (2003); Gottlieb <i>et al</i> (2003); Bergstrom <i>et al</i> (2003); Gordon <i>et al</i> (2003); Shikiar <i>et al</i> (2003); Weisman <i>et al</i> (2003)
Yugoslavia	<i>v</i>

^aDierckxsen L, Ongenaë K, van Geel N, Naeyaert J. Vitiligo: Profile of a Belgian cohort. *J EADV* 17(Suppl. 3):359, 2003.

^bCarey W, Gulliver WP. Efalizumab therapy improves and sustains health-related quality of life in patients with moderate to severe plaque psoriasis. *J EADV* 17(Suppl. 3):371, 2003.

^cOuellet JP, Toth D, Gratton D. Efalizumab provides rapid onset of clinical benefit in patients with moderate to severe plaque psoriasis. *J EADV* 17(Suppl. 3):371, 2003.

^dLangley R. An improvement of 50% or more in psoriasis area severity index (PASI) represents substantial improvement for patients treated with alefacept. *J EADV* 17(Suppl. 3):139, 2003.

^eHolm EA, Jemec GBE. Why is assessment of health-related quality of life so important? *J EADV* 17(Suppl. 3):304, 2003.

^fTaieb C, Nocera T, Verriere F, Myon E. Psoriasis and atopic dermatitis: cross-description of patients' quality of life. *J EADV* 17:38, 2003 (abstract).

^gFeldman SR, McMichael A, Balkrishnan R, Rapp SR, Crambes O, Abella ML, Boulouc A. The effect of corrective cosmetics on quality of life of patients with facial disfigurements. *J EADV* 17(Suppl. 3):202, 2003.

^hSegard C, Verriere F, Nocera T, Myon E, Taieb C. Impact of hydrotherapy care on the quality of life of patients' suffering from skin disease. *Qual Life Res* 12:777, 2003.

ⁱMeurer M, Folster-Holst R, Brautigam M. Primecrolimus (SDZ ASM 981) cream improves disease control and quality of life in the long-term management of atopic dermatitis in adults. *Ann Dermatol Venereol* 129:1S47, 2002 (abstract).

^jBerger K, Kugland B, Khlken B, Augustin M. Cost of chronic plaque psoriasis in Germany: an analysis from the patients and payer perspectives. *J EADV* 17:36, 2003 (abstract).

^kSterry W. Psoriasis—impact on QoL—efalizumab positive outcomes. *J EADV* 17(Suppl. 3):439, 2003.

^lChaidemenos C, Avgoustinaki N, Karakatsanis G, Chatzistylianos M, Papakonstantinou M, Mourellou O. Effect of intermittent and continuous cyclosporin therapy on the clinical and quality of life parameters of psoriasis. *J EADV* 17(Suppl. 3):381, 2003.

^mKochergin NG, Burova EP. Life quality assessment in psoriasis and atopic dermatitis. *J EADV* 15(Suppl. 2):186, 2001 (abstract).

ⁿKochergin NG, Samgin MA, Monakhov SA. Acne, adapalene and quality of life. *J EADV* 16(Suppl. 1):116, 2002 (abstract).

^oLvov AN, Ivanov OL, *et al*. Psychoneurological parameters and quality of life in patients with severe forms of atopic dermatitis. *J EADV* 15(Suppl. 2):276, 2001 (abstract).

^pKochergin NG, Yutanova NS. Mometasone furoate 0.1% with salicylic acid 5% ointment in psoriasis and atopic dermatitis. *J EADV* 17(Suppl. 3):350, 2003.

^qEtemesi BA. Impact of chronic skin disease on the quality of life of Tanzanian adults. *Brit J Dermatol* 149(Suppl. 64):31–32, 2003.

^rOztap MO, Oztap P, Aslan S, Adypen H, Önder M. Comparison of the effects of PUVA and non PUVA treatment on the quality of life of patients with psoriasis vulgaris: A non-randomized, cross-sectional study. *J EADV* 17:59, 2003 (abstract).

^sCalikoglu E, Oztas P, Cetin P. The evaluation of psychiatric tests in seborrheic dermatitis patients. *J EADV* 17(Suppl. 3):159, 2003.

^tCallis KP, Carlin CS, Krueger CG. Correlation of National Psoriasis Foundation score components with quality of life measures in psoriasis. *J Invest Dermatol* 121:0357, 2003.

^uChristopher E, Vanishnaw AK. A broad spectrum of patients with psoriasis benefit from alefacept therapy. *J EADV* 17(Suppl. 3):138, 2003.

^vParavina M, Stanojevic M, Poljacki M, Ljubisavljevic D. Quality of life in dermatological patients. *J Eur Acad Dermatol Venereol* 14(Suppl. 1):274–275, 2000 (abstract).

Table X. Languages in which DLQI has been translated

Afrikaans	Finnish	Polish
Canadian/French	French	Romanian
Czech	German	Spanish
Cantonese	Greek	Swedish
Chinese	Italian	Turkish
Danish	Hungarian	Urdu
Dutch	Norwegian	US/Spanish

importance of skin disease. The DLQI has been used for all of these purposes. In the direct clinical consultation allowing patients to express the issues in their lives caused by their skin disease can enhance the quality of care provided. HRQoL measures may in the future be helpful in informing clinical decision taking where consideration is being given to using expensive or potentially harmful therapies.

As the planning of health care is becoming increasingly patient-orientated, quality of life measurements will continue to be a vital means of assessing how individual patients are affected by skin conditions (Tulloch and Ormerod, 2003). There are a variety of HRQoL measures that can be used in dermatology, including disease-specific, dermatology-specific and general health measures (Finlay, 1997). This survey of published information relating to the DLQI is not intended to indicate whether or not the DLQI should be used in individual circumstances, but rather to make it easier for potential users to access information about the various strengths and weaknesses of this instrument. It is important that validity of outcome measures should be demonstrated and that data related to this be easily accessible. In addition to the published experience reviewed in this survey, the DLQI is currently being used in many studies worldwide and this survey should be informative to current users.

Perhaps the biggest challenge to the development of our understanding of HRQoL measures is for research to be focused on giving HRQoL scores some direct meaning for clinicians. Before the DLQI is likely to be used widely in the direct clinical setting however, it will be necessary to know how score ranges of the DLQI relate to patients' overall view of their HRQoL; an initial banding proposal² is likely to be altered based on a much larger study. The size of change in scores that are of relevance to patients will also have to be more clearly established. As the DLQI is a simple measure which is accurately and rapidly completed by patients with no supervision, it does have the potential, as originally intended (Finlay and Khan, 1994), to be of direct help to clinicians.

Further Information

Further information about the DLQI is available from FinlayAY@cf.ac.uk and at www.ukdermatology.co.uk The DLQI is copyright: Library of Congress United States copyright office registration number TXu 608 406, date of registration December 6, 1993. Permission is usually given for the use of the DLQI for academic purposes or by individual clinicians without charge. Under some circumstances a small charge is made.

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References

- Amir M, Vardy D, Narkiss T, *et al*: Heliotherapy at the Dead Sea improves quality of life in psoriatic patients: A prospective study. *Qual Life Res* 10:236, 2001
- Anderson RT, Rajagopalan R, Winston-Salem PH: Development and validation of a quality of life instrument for cutaneous diseases. *J Am Acad Dermatol* 37:41–50, 2001
- Augustin M, Zschocke I, Lange S, Seidenglanz K, Amon U: Quality of life in skin diseases: Methodological and practical comparison of different quality of life questionnaires in psoriasis and atopic dermatitis. *Hautarzt* 50:715–722, 1999
- Ayyalaraju SR, Finlay AY, Dykes PJ, Trent J, Kirsner RS, Kerdel FA: Hospitalization for severe skin disease improves quality of life in the United Kingdom and the United States: A comparative study. *J Am Acad Dermatol* 49:249–254, 2003
- Badia X, Mascaró JM, Lozano R: On behalf of the Cavide research group Measuring health-related quality of life in patients with mild to moderate eczema and psoriasis: Clinical validity, reliability and sensitivity to change of the DLQI. *Br J Dermatol* 141:698–702, 1999
- Badia X, Mascaró JM, Lozano R: Measuring health-related quality of life in patients with mild to moderate eczema and psoriasis: Clinical validity, reliability and sensitivity to change of the DLQI. *Brit J Dermatol* 141:698–702, 1999
- Bagel J, Garland WT, Breneman D, *et al*: Administration of DAB 389 IL-2 to patients with recalcitrant psoriasis: A double-blind, phase II multicentre trial. *J Am Acad Dermatol* 38:938–944, 1998
- Balkrishnan R, McMichael AJ, Camacho FT, *et al*: Development and validation of a health-related quality of life instrument for women with melasma. *Br J Dermatol* 149:572–577, 2003
- Bergstrom KG, Arambula K, Kimball AB: Medication formulation affects quality of life: Randomised single blind study of clobetasol propionate foam 0.05% compared with a combined program of clobetasol cream 0.05% and solution 0.05% for the treatment of psoriasis cutis. *72:407–411*, 2003
- Blackford S, Finlay AY, Roberts DL: Quality of life in Behcets' syndrome: 335 patients surveyed. *Brit J Dermatol* 136:293, 1997
- Blackford S, Roberts DL, Salek MS, Finlay AY: Basal cell carcinomas cause little handicap. *Qual Life Res* 5:191–194, 1996
- Boehncke WH, Ochsendorf F, Paeslack I, Kaufmann R, Zollner TM: Decorative cosmetics improve the quality of life in patients with disfiguring skin diseases. *Eur J Dermatol* 12:577–580, 2002
- Campanati A, Penna L, Guzzo T, *et al*: Quality of life assessment in patients with hyperhidrosis before and after treatment with botulinum toxin: Results of an open-label study. *Clin Ther* 25:298–308, 2003
- Chan JJ, Gebauer K: Treatment of severe recalcitrant plaque psoriasis with single dose intravenous tumour necrosis factor- α antibody (infliximab). *Aus J Dermatol* 44:116, 2003
- Chren M-M, Lasek RJ, Quinn LM, Mostow EN, Zyzanski SJ: Skinned, a quality-of-life measure for patients with skin disease: Reliability, validity and responsiveness. *J Invest Dermatol* 107:707–713, 1996
- Clark SM, Goulden V, Finlay AY, Cunliffe WJ: The psychological and social aspect of acne: A comparison study using three acne disability questionnaires. *Brit J Dermatol* 137 (Suppl. 40):41, 1997
- Czech W, Brautigam M, Weidinger G, Schopt F: A body-weight-independent dosing regimen of cyclosporine microemulsion is effective in severe atopic dermatitis and improves the quality of life. *J Am Acad Dermatol* 42:653–659, 2000
- De Korte J, Mombers FMC, Sprangers MAG, Bos JD: The suitability of quality-of-life questionnaires for psoriasis research. *Arch Dermatol* 138:1221–1227, 2002
- De Tiedra AG, Mercadal J, Badia X, Mascaró JM, Lozano R: A method to select an instrument for measurement of HR-QOL for cross-cultural adaptation applied to dermatology. *Pharmacoeconomics* 14:405–422, 1998
- Drake L, Prendergast M, Maher R, *et al*: The impact of tacrolimus ointment on health-related quality of life of adult and pediatric patients with atopic dermatitis. *J Am Acad Dermatol* 44:S65–S72, 2001

- Ellis CN, Mordin MM, Adler EY: Effects of Alefacept on health-related quality of life in patients with psoriasis: Results from a randomised, placebo controlled phase II trial. *Am J Clin Dermatol* 4:131-139, 2003
- Finlay AY: Measures of the effect of severe atopic eczema on quality of life. *J Eur Acad Dermatol Venereol* 7:149-154, 1996
- Finlay AY: Quality of life measurement in dermatology: A practical guide. *Br J Dermatol* 136:305-314, 1997
- Finlay AY, Khan GK: Dermatology Life Quality Index (DLQI): A simple practical measure for routine clinical use. *Clin Exp Dermatol* 19:210-216, 1994
- Finlay AY, Salek MS, Haney J: Intramuscular Alefacept improves health-related quality of life in patients with chronic plaque psoriasis. *Dermatology* 206:307-315, 2003
- Fivenson D, Arnold RJG, Kaniecki DJ, Cohen JL, Frech F, Finlay AY: The effect of atopic dermatitis on total burden of illness and quality of life on adults and children in a large managed care organisation. *J Managed Care Pharm* 8:333-342, 2002
- Giess R, Naumann M, Werne E, *et al*: Injections of botulinum toxin A into the salivary glands improve sialorrhoea in amyotrophic lateral sclerosis. *J Neurol Neurosurg Psychiatry* 69:121-123, 2000
- Gordon KB, Papp KA, Hamilton TK, *et al*: Efalizumab for patients with moderate to severe plaque psoriasis: A random controlled trial. *JAMA* 290:3073-3080, 2003
- Gottlieb AB, Matheson RT, Low N, *et al*: A randomized trial of etanercept as monotherapy for psoriasis. *Arch Dermatol* 139:1627-1632, 2003
- Gradwell C, Thomas KS, English JS, Williams HC: A randomised controlled trial of nurse follow-up clinics: Do they help patients and free up consultants' time? *Br J Dermatol* 147:513-517, 2002
- Grosshans E, Marks R, Marcard JM, *et al*: Evaluation of clinical efficacy and safety of adapalene 0.1% gel versus tretinoin 0.025% gel in the treatment of acne vulgaris, with particular reference to the onset of action and impact on quality of life. *Brit J Dermatol* 139 (Suppl. 52):2633, 1998
- Hachem JP, DePaepe K, Sterckx G, Kaufman L, Rogiers V, Roseeuw D: Evaluation of key biographical and clinical parameters of skin barrier function among hospital workers. *Contact Dermatitis* 46:220-223, 2002
- Hahn BH, Melfi CA, Chuang TY, *et al*: Use of the Dermatology Life Quality Index (DLQI) in a Midwestern US Urban Clinic. *J Am Acad Dermatol* 45:44-48, 2001
- Harlow D, Poyner T, Finlay AY, Dykes PJ: Impaired quality of life in adults with skin disease in primary care. *Brit J Dermatol* 143:979-982, 2000
- Harris A, Burge SM, Dykes PJ, Finlay AY: Handicap in Darier's disease and Hailey-Hailey disease. *Brit J Dermatol* 135:959-963, 1996
- Haynes M: Examining day-case and in-patient psoriasis care. *Prof Nurse* 16:893-896, 2000
- Helbling I, Ferguson JE, McKenna M, Muston HL: Audit of admissions to dermatology beds in Greater Manchester. *Clin Exp Derm* 27:519-522, 2002
- Herd RM, Tidman MJ, Ruta DA, Hunter JAA: Measurement of quality of life in atopic dermatitis: Correlation and validation of two different methods. *Brit J Dermatol* 136:502-507, 1997
- Hermansen SE, Helland CA, Finlay AY: Patients' and doctors' assessment of skin disease handicap. *Clin Exp Dermatol* 27:249-250, 2002
- Hiltscher D, Boslet WT, Fuchslocher M, *et al*: Quality of life in patients with rosacea and rhinophyma. *Akt Dermatol* 27:391-394, 2001
- Ho VCY, Griffiths CEM, Berth-Jones J, *et al*: Intermittent short courses of cyclosporin microemulsion for the long-term management of psoriasis: A 2 yr cohort study. *J Am Acad Dermatol* 44:643-651, 2001
- Holme SA, Beattie PE, Fleming CJ: Cosmetic camouflage advice improve quality of life. *Br J Dermatol* 147:946-949, 2002
- Holme SA, Mann I, Sharpe JL, Dykes PJ, Lewis-Jones MS, Finlay AY: The Children's Dermatology Life Quality Index: Validation of the cartoon version. *Br J Dermatol* 148:285-290, 2003
- Horn HM, Tidman MJ: Quality of life in epidermolysis bullosa. *Clin Exp Dermatol* 27:707-710, 2002
- Hutchings CV, Shum KW, Gawkrödger DJ: Occupational contact dermatitis has an appreciable impact on quality of life. *Contact Dermatitis* 45:17-20, 2001
- Jayaprakasam A, Darvey A, Jsborne G, McGibbon D: Comparisons of assessment of severity and quality of life in cutaneous disease. *Clin Exp Dermatol* 27:306-308, 2002
- Jemec BGBE, Kynemund L: Time spent on treatment in dermatology—how much time do outpatients use and is it a measure of morbidity? *Acta Dermatoven APA* 10:17-19, 2001
- Jemec GB, Wulf HC: Patient-physician consensus on quality of life in dermatology. *Clin Exp Dermatol* 21:177-179, 1996
- Jobanputra R, Bachmann M: The effect of skin diseases on quality of life in patients from different social and ethnic groups in Cape Town, South Africa. *Int J Dermatol* 39:826-831, 2000
- Kent G, Al-Abadie M: Factors affecting responses on Dermatology Life Quality Index items among vitiligo sufferers. *Clin Exp Dermatol* 21:330-333, 1996
- Kernick D, Cox A, Powell R, Reinhold D, Sawkins J, Warin A: A cost consequence study of the impact of a dermatology-trained practice nurse on the quality of life of primary care patients with eczema and psoriasis. *Brit J Gen Pract* 50:555-558, 2000
- Kiebert G, Sorensen SV, Revicki D *et al*: Atopic dermatitis is associated with a decrement in health-related quality of life. *Int J Dermatol* 41:151-158, 2002
- Klassen AF, Newton JN, Mallon E: Measuring quality of life in people referred for specialist care of acne: Comparing generic and disease-specific measures. *J Am Acad Dermatol* 43:229-233, 2000
- Koo J, Menter A, Lebwohl M, Kozma C, Slaton T, Wojcik A, Kowlaski J: The relationship between quality of life and disease severity: Results from a large cohort of mild, moderate and severe psoriasis patients. *Br J Dermatol* 147:1070-1171, 2002
- Kurwa H, Finlay AY: Dermatology inpatient management greatly improves life quality. *Brit J Dermatol* 133:575-578, 1995
- Lewis-Jones MS, Finlay AY: The Children's Dermatology Life Quality Index (CDLQI): Initial validation and practical use. *Br J Dermatol* 132:942-949, 1995
- Linnet J, Jemec GBE: An assessment of anxiety and dermatology life quality in patients with atopic dermatitis. *Brit J Dermatol* 140:268-272, 1999
- Loo W-J, Diba V, Chawla M, Finlay AY: Dermatology Life Quality Index: Influence of an illustrated version. *Br J Dermatol* 148:279-284, 2003
- Loo W-J, Lanigan SW: Laser treatment improves quality of life of hirsute females. *Clin Exp Dermatol* 27:439-441, 2002
- Lundberg L, Johannesson M, Silverdahl M, *et al*: Health-related quality of life in patients with psoriasis and atopic dermatitis measured with SF-36, DLQI and a subjective measure of disease activity. *Acta Derm Venereol* 80: 430-434, 2000
- Lundberg L, Johannesson M, Silverdahl M, Hermansson C, Lindberg M: Quality of life, health-state utilities and willingness to pay in patients with psoriasis and atopic eczema. *Brit J Dermatol* 141:1067-1079, 1999
- Mallon E, Newton JN, Klassen A, Stewart-Brown SL, Ryan TJ, Finlay AY: The quality of life in acne: A comparison with general medical conditions using generic questionnaires. *Brit J Dermatol* 140:672-676, 1999
- Marks R, Plunkett A, Merlin K, Jenner N: Atlas of Common Skin Diseases in Australia. Melbourne: University of Melbourne, 2000; p 9, 15, 19
- Mazzotti E, Picardi A, Sampogna F, Sera F, Pasquinini P, Abeni D: The Idi multipurpose psoriasis research on vital experiences (improve) study group. Sensitivity of the Dermatology Life Quality Index to clinical change in patients with psoriasis. *Br J Dermatol* 149:318-322, 2003
- McKenna SP, Cook SA, Whalley D, Doward LC, Richards HL, Griffiths CEM, Van Assch D: Development of the PSORIQoL, a psoriasis-specific measure of quality of life designed for use in clinical practice and trials. *Br J Dermatol* 149:323-331, 2003
- McPherson T: Impact on the quality of life of lymphoedema patients following introduction of a hygiene and skin care regimen in a Guyanese community endemic for lymphatic filariasis: A preliminary clinical intervention study. *Filaria J* 2:1, 2003
- Morgan M, McCreedy R, Simpson J, Hay RJ: Dermatology quality of life scales—a measure of the impact of skin diseases. *Br J Dermatol* 136:202-206, 1997
- Mork C, Wahl A, Moum T: The Norwegian version of the Dermatology Life Quality Index: A study of validity and reliability in psoriatics. *Acta Derm Venereol* 82:347-351, 2002a
- Mork C, Wahl A, Polit RN: Improved quality of life among patients with psoriasis after supervised climate therapy at the Canary Islands. *J Am Acad Dermatol* 47:314-315, 2002b
- Newton JN, Mallon E, Klassen A, Ryan TJ, Finlay A: The effectiveness of acne treatment: An assessment by patients of the outcome of therapy. *Brit J Dermatol* 137:563-567, 1997
- Nichol MB, Margoilies JE, Lippa E, Rowe M, Quell J: The application of multiple quality of life instruments in individuals with mild-to-moderate psoriasis. *Pharmacoconomics* 10:644-653, 1996
- Papadopoulos L, Bor R, Legge *et al*: Coping with the disfiguring effects of vitiligo. *Brit J Med Psychol* 72:385-396, 1999
- Parsad D, Pandhi R, Dogra S, Kanwar AJ, Kumar B: Dermatology Life Quality Index score in vitiligo and its impact on the treatment outcome. *Br J Dermatol* 148:373-374, 2003
- Piletta PA, Wirth S, Hommele L, *et al*: Circulating skin-homing T cells in atopic dermatitis. *Arch Dermatol* 132:1171-1176, 1996
- Pittler MH, Armstrong NC, Cox A, Collier PM, Hart A, Ernst E: Randomised, double-blind, placebo-controlled trial of autologous blood therapy for atopic dermatitis. *Br J Dermatol* 148:307-313, 2003
- Poli F, Dreno B, Vershoors M: An epidemiological study of acne in female adults: Results of a survey conducted in France. *J EADV* 15:541-545, 2001

- Poon E, Seed PT, Greaves MW, Kobza-Black A: The extent and nature of disability in different urticarial conditions. *Brit J Dermatol* 140:667-671, 1999
- Reilly MC, Lavin PT, Kahler KH, Pariser DM: Validation of the Dermatology Life Quality Index and the work productivity and activity impairment—Chronic Hand Dermatitis questionnaire in chronic hand dermatitis. *J Am Acad Dermatol* 48:128-130, 2003
- Ruta D, Allen S, Herd R, Tidman M: The patient generated index: A new approach to quality of life measurement in psoriasis. *Qual Life Res* 7:657, 1998
- Rzany BJ, Partscht K, Kippes W, *et al*: Quality of life in patients with Bullous pemphigoid. *J Invest Dermatol* 114:887, 2000
- Schafer T, Staudt A, Ring J: German instrument for the assessment of quality of life in skin diseases (DIELH). Internal consistency, reliability, convergent and discriminant validity and responsiveness. *Hautarzt* 52:624-628, 2001
- Schmid-ott G, Burchard R, Niederauer HH, Lamprecht F, Kunsebeck HW: Stigmatization and quality of life of patients with psoriasis and atopic dermatitis. *Hautarzt* 54:852-857, 2003
- Shikier R, Bresnahan BW, Stone SP, Thompson C, Koo J, Revicki DA: Validity and reliability of patient reported outcomes used in psoriasis: Results of two randomised clinical trials. *Health Qual Life Outcomes* 1:53, 2003
- Shum RW, Lawton S, Williams HC, Docherty G, Jones J: The British Association of Dermatologists audit of atopic eczema management in secondary care. Phase 3: Audit of service outcome. *Brit J Dermatol* 142:721-727, 2000
- Swartling C, Naver H, Lindberg M: Botulinum A toxin improves life quality in severe primary focal hyperhidrosis. *Eur J Neurol* 8:247-252, 2001
- Thompson AK, Finn AF, Schoenwetter WF: Effect of 60 mg twice-daily Fexofenadine HCl on quality of life, work and classroom productivity, and regular activity in patients with chronic idiopathic urticaria. *J Am Acad Dermatol* 43:24-30, 2000
- Thomson KF, Wilkinson SM, Sommer S, Pollock B: Eczema: Quality of life by body site and the effect of patch testing. *Br J Dermatol* 146:627-630, 2002
- Touw CR, Hakkaart-Van Roijen L, Verboom P, Paul C, Rutten FFH, Finlay AY: Quality of life and clinical outcome in psoriasis patients using intermittent cyclosporin. *Br J Dermatol* 144:967-972, 2001
- Tulloch IK, Ormerod AD: Quality of life measurements. *Br J Dermatol* 148:193-194, 2003
- Vensel E, Hilley T, Trent J, *et al*: Sustained improvement of the quality of life of patients with psoriasis after hospitalisation. *J Am Acad Dermatol* 43:858-860, 2000
- Von Der Werth JM, Jemee GBE: Morbidity in patients with hidradenitis suppurativa. *Br J Dermatol* 144:809-813, 2001
- Weisman S, Pollack CR, Gottschalk RW: Psoriasis disease severity measures: Comparing efficacy of treatments for severe psoriasis. *J Dermatol Treat* 14:158-165, 2003
- Williams TL, May CR, Esmail A, *et al*: Patient satisfaction with teledermatology is related to perceived quality of life. *Br J Dermatol* 145:911-917, 2001
- Williamson D, Gonzalez M, Finlay AY: The effect of hair loss on quality of life. *J Eur Acad Dermatol Venereol* 15:137-139, 2001
- Woo PN, Hay IC, Ormerod AD: An audit of the value of patch testing and its effect on quality of life. *Contact Dermatitis* 48:244-247, 2003
- Zachariae R, Zachariae C, Ibsen H, Mortensen JT, Wulf HC: Dermatology Life Quality Index: Data from Danish inpatients and outpatients. *Acta Derm Venereol* 80:272-276, 2000