Dermatology Life Quality Index in Thai Patients with Acne

Kanokvalai Kulthanan, M.D., Sukhum Jiamton, M.D, M.Sc., Ph.D., Renu Kittisarapong, M.D.

Department of Dermatology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

ABSTRACT

Objective: Acne is an inflammatory disease of pilosebaceous units. Major complications of acne are scarring and psychosocial effects. When compared to other chronic illnesses, patients with acne have been shown to have levels of social, psychological, and emotional impairments similar to those with serious diseases. This study is aimed to assess the effects of acne, including acne severity and acne scar on the patient's quality of life using a Thai version of the Dermatology Life Quality Index (DLQI).
Methods: One hundred and ten patients with acne who attended the Dermatology Outpatient Clinic, Siriraj Hospital, were asked to complete the Thai version of the DLQI questionnaires by themselves. Clinical severity of acne and acne scars were assessed.
Results: Of 110 patients, 80 (72.7%) were females with a mean (SD) age of 26.0 (6.6) years and a range of 16-52 years. Most of the patients were students. The mean total DLQI score was 8.95 (range 0-24). Questions concerning embarrassment had the highest mean DLQI score, which meant the greatest impairment of the quality of life. The others that also had high mean DLQI scores were questions which represented social activities, itchy/sore/painful/stinging skin, and treatment difficulties, respectively. Concerning personal relationship problems, female patients had significant higher mean DLQI scores than male patients ($p<0.05$), which implied that women might be more concerned about the visual effects of their acne lesions than men. Most patients with mild acne (63%) had low DLQI scores. However, some patients with mild acne also had a high DLQI score which implied that even mild acne can pose a significant problem. QOL scores were lower in patients with mild rather than severe acne scar.
Conclusion: Physicians should not underestimate the QOL impairment of patients with acne. The use of this simple questionnaire may help physicians to recognize the presence of psychiatric distress and may help facilitate further inquiries and/or referral to a psychologist.

Keywords: Acne; quality of life

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Acne is an inflammatory disease of pilosebaceous units characterized by comedones, erythematous papules, pustules, and sometimes nodulocystic lesions on the face, upper chest, and upper back. Acne mainly affects adolescents and is seen in up to 80% of people aged between 11-30 years and up to 5% of older adults. However, it is seen in nearly 100% of individuals at some time during their lives.[1] Major complications of acne are scarring and psychosocial effects which may persist for a long time even after the active lesions have disappeared.

When compared to other chronic illnesses, patients with acne have been shown to have levels of social, psychological, and emotional impairments similar to those with more serious diseases such as asthma, epilepsy, diabetes, or arthritis.[2] Acne also affects patients' functional abilities and patients with acne have a higher unemployment rate than those without acne[3] and are prone to embarrassment and social withdrawal, depression, anxiety, and anger.[4] Previous studies have shown that acne could cruelly impair self-image, psychological well-being and the ability to form relationships, and may even precipitate suicide.[5] Even mild acne can cause a significant problem for some patients, diminishing their quality of life and social functioning.[6] The impact of acne on a particular patient is not always easy to judge clinically.

Several validated dermatology questionnaires have been created to measure the impact of skin diseases on quality of lives. The Dermatology Life Quality Index (DLQI) is a 10-item self-administered English language questionnaire developed in Wales by Finlay and Khan to measure the effects of different skin disorders on the quality of patients' lives.[7] It is a simple, compact uniform questionnaire, applicable to patients with any skin disease. G de Tiedra et al.[8] suggested that the DLQI was suitable for usage as a transcultural instrument for international research. DLQI was translated into many languages including Thai. The

Correspondence to: Sukhum Jiamton
E-mail: srsjt@mahidol.ac.th

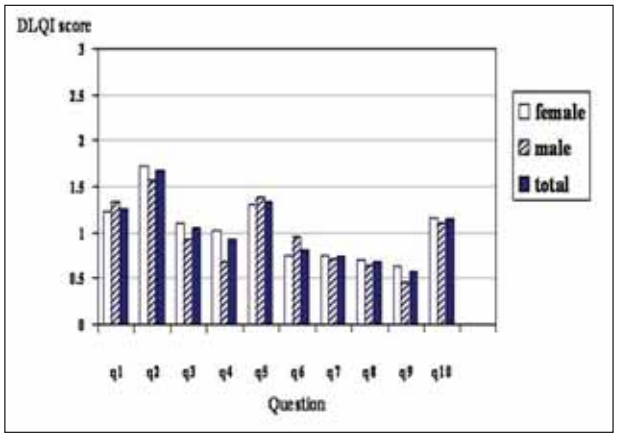

Fig 1. The mean scores of each DLQI question

Thai version of the DLQI has been reported by Kulthanan et al.[9] have high validity and good reliability.

This study is aimed to assess the effects of acne, including acne severity and acne scar on the patient's quality of life using a Thai version of the DLQI.

MATERIALS AND METHODS

The study design was a descriptive analysis. One hundred and ten patients with acne who attended the Dermatology Outpatient Clinic, Siriraj Hospital, Mahidol University, Bangkok, from April 2004 to March 2005 were included in the study. This research had previously been approved by the Institutional Review Board of Siriraj Hospital. All patients were asked to complete the Thai version of the DLQI questionnaires by themselves. Dr. A. Y. Finlay had kindly given formal permission to Dr. Kulthanan to use the Thai version of the DLQI questionnaire. This questionnaire consists of 10 questions, each referring to the previous 7 days. The questions cover disabilities on work, leisure, daily activities, personal relationship and treatments. Each question had 5 possible answers: 'not relevant (not applicable)', 'not at all', 'a little', 'a lot', or 'very much' with the corresponding scores of 0, 0, 1, 2, and 3, respectively. The questions are simple and short and take only a few minutes to complete. The DLQI total score is calculated by adding the scores of all 10 questions, with the maximum scores of 30 and the minimum score of 0. The higher is the score, the greater is the impairment of the quality of life.

The severity of acne and acne scars were assessed by the same physician. The clinical severity of acne was classified following the Washington D.C. Consensus on acne[10] into 3 grades: 1) mild, few to several papules/pustules but no nodules; 2) moderate, several to many papules/pustules and a few to several nodules; and, 3) severe, numerous and/or extensive papules/pustules and many nodules. Also, the clinical severity of acne scars was classified into 3 degrees: 1) mild, less than 5 lesions; 2) moderate, 5-10 lesions; and, 3) severe, more than 10 lesions.

Statistical analysis

Data from this study were entered twice into a computer and data from the two data-entries were compared and validated. All statistical tests were two-sided at a 95% confidence level using SPSS version 10 for Windows. If the data were distributed normal, then variables were compared between the two arms using t-test or compared

TABLE 1. Demographic characteristics of the study sample at baseline (n=110)

Characteristics	No. (case)	%
Sex		
Female	80	72.7
Male	30	27.3
Age, years		
15-25	56	50.9
26-50	53	48.2
More than 50	1	0.9
Site of acne *		
Face	110	100.0
Back	70	63.6
Chest	37	33.6
Skin type		
Oily	74	67.3
Mixed	34	30.9
Dry	1	0.9
Normal	1	0.9
Severity of acne		
Mild	70	63.6
Moderate	29	26.4
Severe	11	10.0
Severity of acne scar		
None	5	4.5
Mild	21	19.1
Moderate	31	28.2
Severe	53	48.2

*some patients had lesions more than one site

TABLE 2. The DLQI score of each question

Question	Sex	No.	Mean DLQI (S.D.)	Range
Itching	All	110	1.3 (0.8)	0-3
	F	80	1.2 (0.8)	
	M	30	1.3 (0.9)	
Embarrassment	All	110	1.7 (0.9)	0-3
	F	80	1.7 (0.9)	
	M	30	1.6 (0.8)	
Shopping problems	All	92	1.1 (0.9)	0-3
	F	65	1.1 (0.9)	
	M	27	0.9 (0.8)	
Clothes choice	All	91	0.9 (1.1)	0-3
	F	67	1.0 (1.1)	
	M	24	0.6 (0.9)	
Social activities	All	98	1.3 (0.9)	0-3
	F	70	1.3 (0.9)	
	M	28	1.4 (1.1)	
Sport	All	86	0.8 (0.9)	0-3
	F	62	0.8 (0.9)	
	M	24	1.0 (1.0)	
Work and study	All	75	0.8 (1.0)	0-3
	F	54	0.8 (1.0)	
	M	21	0.7 (1.1)	
Interpersonal problem	All	86	0.7 (0.8)	0-3
	F	61	0.7 (0.8)	
	M	25	0.6 (0.7)	
Sexual difficulties	All	83	0.6 (0.8)	0-3
	F	59	0.6 (0.9)	
	M	24	0.5 (0.7)	
Treatment	All	102	1.2 (1.0)	0-3
	F	74	1.2 (1.0)	
	M	28	1.1 (1.0)	

TABLE 3. Characteristics of patients who had acne by DLQI category

Characteristics	DLQI categories		p
	0-7 n=55	8-30 n=55	
Sex, n (%)			0.7
Female	41 (51)	39 (49)	
Male	14 (47)	16 (53)	
Age, years			
Mean (SD)	26.2 (6.7)	25.7 (6.5)	0.7
Duration of having acne, months			
Mean (SD)	26.5 (48.8)	20.8 (42.7)	0.5
Median	3	4	0.9
Min, Max	1,216	1,216	
Site of acne, n (%)			
Face	55 (100)	54 (98)	1.0
Chest	16 (29)	19 (34)	0.5
Back	29 (56)	23 (44)	0.3
Severity of acne, n (%)			0.001
Mild	44 (63)	26 (37)	
Moderate	9 (31)	20 (69)	
Severe	2 (18)	9 (82)	
Severity of acne scar, n (%)			0.014
None	3 (60)	2 (40)	
Mild	14 (67)	7 (33)	
Moderate	20 (65)	11 (36)	
Severe	18 (34)	35 (66)	

TABLE 4. Characteristics of patients who had moderate or severe acne by DLQI category

Characteristics	DLQI categories		p
	0-7 n=11	8-30 n=29	
Sex, n (%)			0.9
Female	7 (28)	18 (72)	
Male	4 (27)	11 (73)	
Age, years			
Mean (SD)	28.5 (6.8)	26.6 (6.7)	0.4
Duration of acne, months			
Mean (SD)	32.7 (68.4)	26.6 (48.1)	0.3
Median	3	4	0.9
min, Max	2,216	1,216	
Site of acne, n (%)			
Face	11 (100)	29 (100)	n/a*
Chest	3 (27)	9 (31)	0.8
Back	5 (45)	12 (41)	0.8
Severity of acne scar, n (%)			0.014
None	0	0	
Mild	1 (50)	1 (50)	
Moderate	3 (43)	4 (57)	
Severe	7 (23)	24 (77)	

n/a* not available

between two periods of time using a paired t-test. For continuous data whose distributions were not normal, the variables were compared between the two arms using Wilcoxon rank-sum test or compared between two periods of time using the Wilcoxon signed-rank test. Categorical variables were compared using Chi-squared or Fisher's exact test.

RESULTS

All patients completed all 10 questions in the questionnaire. It took each patient less than 5 minutes to complete the questionnaire. Of 110 patients, 80 (72.7%) were females with a mean (SD) age of 26.0 (6.6) years and a range of 16-52 years. Most of the patients were students (Table 1).

The first episode of acne was presented from the age of 10 to 31 years with the median age of 15 years. Eighty-seven (79%) of patients had a family history of acne. The common sites of acne lesions were the face (100%), the back (63.6%) and the chest (33.6%). Two-thirds of the patients had oily skin, 30.9% had a mixed type of oily skin on the centrofacial area and normal skin on their cheeks, 0.9% had dry facial skin, and 0.9% had normal skin condition. Sixty-three percent of the patients had mild degree of acne severity, 26% had moderate degree, and 10% had severe acne. About half of the patients had severe acne scarring, 28% had a moderate degree of acne scarring, 19% had a mild degree, and only 4.5% had no acne scarring.

Mean (SD) of the total DLQI score was 8.95 (6.3) with a range of 0 to 24. Table 2 and Fig 1 show details of the mean DLQI score in all 10 questions. Question 2 had the highest mean DLQI score (1.68), while question 9 had the lowest mean DLQI score (0.58).

Table 3 shows characteristics of the patients by DLQI category. Half of the patients had a total DLQI score from 0 to 7 and another half had a total DLQI score from 8 to 30. There was no statistical difference between two DLQI categories regarding to sex, age, duration of having acne, and site of acne. Sixty-three percent of the patients with mild acne had a mean DLQI score between 0-7, while 37% had mean DLQI score between 8 and 30. Eighty-two percent of patients with severe acne had a mean DLQI score between 8 and 30, while 18% had a mean DLQI score between 0 and 7 ($p = 0.001$). Sixty-seven percent of the patients with mild acne scar had mean DLQI score between 0 and 7, while 33% had mean DLQI score between 8 and 30. Thirty-four percent of patients had a mean DLQI score between 0 and 7, while 66% of patients with severe acne scar had a mean DLQI score between 8 and 30 ($p = 0.014$).

Table 4 and 5 respectively show characteristics of patients who had moderate or severe acne by DLQI category and characteristics of patients who had severe acne scar by DLQI category. There was no statistical difference between two DLQI categories regarding to sex, age, duration of having acne, and site of acne.

Table 6 shows the comparison of the mean DLQI score between this study and a previous study. Our study had a higher mean total DLQI score than those of Finlay and Kahn's study.

DISCUSSION

This study demonstrated that acne could cause impairment of Thai patients' quality of life (QOL) by using the DLQI questionnaire. The mean total DLQI score of our 110 acne patients was 8.95 (range 0-24). A previous

TABLE 5. Characteristics of patients who had severe scar by DLQI category

Characteristics	DLQI categories 0-7 n=18	8-30 n=35	p
Sex, n (%)			0.5
Female	10 (30)	23 (70)	
Male	8 (40)	12 (60)	
Age, years			
Mean (SD)	28.6 (7.8)	26.0 (6.9)	0.2
Duration of acne, months			
Mean (SD)	32.2 (59.0)	29.3 (51.3)	0.9
Median	2.5	4	0.4
Min, Max	1,216	1,216	
Site of acne, n (%)			
Face	18 (100)	34 (79)	1.0
Chest	9 (50)	13 (37)	0.4
Back	12 (67)	14 (40)	0.1
Severity of acne, n (%)			0.001
Mild	11 (50)	11 (50)	
Moderate	5 (25)	15 (75)	
Severe	2 (18)	9 (82)	

TABLE 6. Comparison of the mean DLQI score of patients with acne in Finlay and Kahn's study and present study

Study	N	Mean (SD)	Range
Finlay and Khan's	18	4.30 (3.1)	0-11
Present study	110	8.95 (6.3)	0-24

study by Finlay and Khan[7] showed the mean total DLQI score for various dermatologic conditions was higher than that of the control (7.3 vs. 0.5). In their study, 18 patients with acne had the mean total DLQI score of 4.3 (range 0-11).

Question 2 which concerned embarrassment had the highest mean DLQI score. The others that also had high mean DLQI scores were question 5, 1 and 10 which represented social activities, itchy/sore/painful/stinging skin, and treatment difficulties, respectively. Question 9, which asked about sexual difficulties, had the lowest mean DLQI score. It should be noted that a high percentage of the patients marked "not relevant" for this item. Probably it is a feature of Asian Culture that people seem to be embarrassed when they are asked about personal relationships.

We separated our patients mean DLQI scores into 2 groups, i.e., low DLQI score (0-7) and high DLQI score (8-30) by median value. Overall, the characteristics of the high-score group were not statistically different from the low-score group regarding to sex, age, duration of having acne, and site of acne. Most patients with mild acne (63%) had low DLQI scores. However, some patients with mild acne also had a high DLQI score which implied that even mild acne can pose a significant problem for some patients, diminishing their QOL. However, the present study could not demonstrate the characteristics of the low-score group which significantly differed from the high-score group except severity of acne and severity of acne scar. Sixty-nine percent of patients with moderate acne had a high DLQI score. Most patients with severe acne (82%) had a high DLQI score, but some patients (18%) with severe acne also had a low DLQI score which implied that some patients were not concerned with their acne.

Our study, like the previous report by Aqualina et al.[11], showed that QOL scores were lower in patients with mild rather than moderate to severe acne. However, Gupta et al.[12] and Mosam et al.[13] reported that there was no association between the clinical severity of acne and psychological morbidity.

Concerning personal relationship problems, our female patients had significantly higher mean DLQI scores than male patients ($p<0.05$), which implied that women might be more concerned with the visual effects of their acne lesions than men.

Our study showed that QOL scores were lower in patients with mild rather than severe acne scar.

Most patients with mild acne scar (67%) had low DLQI scores. However, some patients with mild acne scar (33%) had high DLQI scores, which implied that even mild acne scar itself can pose a significant problem on some patients, diminishing their QOL. Another possibility was that some patients might have co-existing high acne severity grading. Most patients with severe acne scar (66%) had a high DLQI score, but some patients (34%) also had a low DLQI score, which implied that some patients were not concerned with their acne scar. Sixty-five percent of patients with moderate acne scar had a low DLQI score.

Motley et al.[14] reported no correlation between the clinical grading of acne and the amount patients were prepared to pay for a hypothetical cure, but there was a correlation between the acne disability score and the amount patients would pay.

Many factors influence the non-dermatological aspects of acne including personality, perceptions, age, social and cultural factors and disease characteristics such as severity, duration and scarring.[14] Assessing QOL at the baseline provides important information about patients' perceptions. During treatment, QOL assessment can provide additional information about its efficacy and may help clinicians to adjust the treatment to the individual needs of each patient. The findings from the present study could also be implied to treat the patients who had acne adequately and early enough to reduce the severity of acne and to prevent acne scar which both had been shown to have impact on quality of life.

Counseling or brief psychotherapy, perhaps accompanied by psychotropic drugs in appropriate cases, may be valuable for patients with acne who have depressive or anxiety disorders. Physicians should not underestimate the QOL impairment of patients with acne. The use of this simple questionnaire may help physicians to recognize the presence of psychiatric distress and may help facilitate further inquiries and/or referral to a psychologist.

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บทคัดย่อ

การศึกษาคุณภาพชีวิตของผู้ป่วยโรคสิว

กนกวลัย กุลทนันทน์ พ.บ., สุขุม เจียมตน พ.บ., วท.ม., ปร.ด., เรณู กิตติสารพงษ์ พ.บ.

ภาควิชาตจวิทยา, คณะแพทยศาสตร์ศิริราชพยาบาล, มหาวิทยาลัยมหิดล, กทม. 10700, ประเทศไทย.

วัตถุประสงค์: สิวเป็นโรคที่มีการอักเสบของต่อมไขมัน และรูขุมขน ซึ่งอาจทำให้เกิดแผลเป็น และปัญหาทางจิตใจ และการเข้าสังคม มีรายงานว่า เมื่อเปรียบเทียบกับโรคเรื้อรังอื่น ผู้ป่วยโรคสิวมีปัญหาทางสังคม จิตใจ และอารมณ์ใกล้เคียงกับโรคที่รุนแรงหลายโรค การศึกษานี้มุ่งที่จะประเมินผลกระทบของโรคสิว รวมทั้งความรุนแรงของสิว และแผลเป็นจากสิว ที่มีต่อคุณภาพชีวิตของผู้ป่วยโดยใช้แบบสอบถาม Dermatology Life Quality Index (DLQI) ฉบับภาษาไทย

วิธีการ: ผู้ป่วยโรคสิว จำนวน 110 ราย ที่มารับการตรวจที่แผนกตรวจโรคนอก ภาควิชาตจวิทยา โรงพยาบาลศิริราช ตอบแบบสอบถาม DLQI ฉบับภาษาไทยด้วยตัวเอง และแพทย์ตรวจประเมินความรุนแรงของสิว และแผลเป็นจากสิว

ผลการศึกษา: ผู้ป่วย 110 ราย เป็นผู้ป่วยหญิง 80 ราย (72%) อายุตั้งแต่ 16-52 ปี อายุเฉลี่ย (SD) คือ 26.0 (6.6) ปี คะแนนรวมเฉลี่ยของ DLQI คือ 8.95 (คะแนนตั้งแต่ 0-24) ปัญหาเรื่องอับอายเป็นข้อที่ผู้ป่วยให้คะแนน DLQI สูงสุด (กระทบคุณภาพชีวิตมากที่สุด) ข้ออื่น ๆ ที่มีคะแนน DLQI สูงเช่นกัน ได้แก่ ปัญหาการเข้าสังคม อาการคัน เจ็บ ผิวหนัง และปัญหาจากการรักษาตามลำดับ ผู้หญิงมีปัญหาของการคบเพื่อน มีคะแนนสูงกว่าผู้ชายอย่างมีนัยสำคัญทางสถิติ ($p<0.05$) อาจช่วยบ่งว่าเพศหญิงมีความกังวลเกี่ยวกับรูปลักษณ์มากกว่าเพศชาย ผู้ป่วยส่วนใหญ่ที่มีสิวที่รุนแรงน้อย (63%) ให้คะแนน DLQI ต่ำ อย่างไรก็ตามผู้ป่วยบางราย แม้สิวรุนแรงน้อยแต่ก็ให้คะแนน DLQI สูง ช่วยบ่งว่าในบางคนแม้สิวเป็นน้อยแต่ก็อาจกระทบต่อคุณภาพชีวิตมากได้ คะแนน DLQI ในผู้ป่วยส่วนใหญ่ที่มีแผลเป็นน้อย จะต่ำกว่าผู้ที่มีแผลเป็นมาก

สรุป: แพทย์ไม่ควรจะมองข้ามไปว่าสิวไม่มีผลกระทบต่อคุณภาพชีวิตของผู้ป่วย หรือมีผลน้อย การใช้แบบสอบถามง่าย ๆ เกี่ยวกับคุณภาพชีวิตของผู้ป่วยนี้อาจช่วยให้แพทย์ทราบถึงความเครียดทางจิตใจของผู้ป่วยโรคสิว และนำไปสู่การรักษาที่เหมาะสมต่อไป