

# The Effect of Skin Diseases on Quality of Life in Adults Attending the Dermatology Clinic of the Lagos University Teaching Hospital, Lagos, Nigeria

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## ABSTRACT

**Background:** Skin diseases have a major impact on patients' lives in terms of psychological well-being, social functioning and everyday activities. The extent of impairment in daily functioning is related to severity of the condition and cosmetic appearance and affects quality of life.

**Objective:** To assess the impact of skin diseases on QoL based on the hypothesis that skin diseases significantly impair QoL.

**Methods:** A cross-sectional study conducted in a dermatology clinic in Lagos, between December 2010 and January 2012. Consenting adults were recruited. DLQI Nigerian English and Yoruba versions were used, consisting of 10 items evaluating impact of skin disease on daily life over the past 7 days. Questions concern symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment. DLQI score has a maximum of 30 and a minimum of 0.

**Results:** Analysis was done on 2599 forms. There were more females (57.4%, 1491) than males (42.6%; 1108); mean age was 36.04 ± 14.14 years. Majority (27.9%) presented with a skin infection, while 23.7% had papulosquamous disorders. Total percentage DLQI score ranged from 0 – 100%, with a mean total % score of 34.11 ± 25.23. Highest mean total % score was in the 'symptoms and feelings' domain; and lowest mean total % score was in the 'treatment' domain'.

**Conclusion:** DLQI is a useful, feasible tool for this environment. The goal is to improve the QoL of individuals particularly those with chronic skin conditions such as atopic dermatitis and psoriasis, and pruritus.

**Keywords:** DLQI, adults, QoL, Nigeria, Quality of life

## L'effet des Maladies de la Peau sur la Qualité de vie des Adultes Fréquentant la Clinique de Dermatologie de l'hôpital Universitaire de Lagos, Lagos, Nigeria

### ABSTRAIT

**Contexte:** Les maladies de la peau ont un impact majeur sur la vie des patients en termes de bien-être psychologique, de fonctionnement social et d'activités quotidiennes. L'ampleur de l'altération du fonctionnement quotidien est liée à la gravité de l'état et à l'apparence esthétique et affecte la qualité de vie.

**Objectif:** Évaluer l'impact des maladies cutanées sur la qualité de vie en se basant de l'hypothèse que les maladies cutanées altèrent significativement la qualité de vie.

**Méthodes:** Une étude transversale menée dans une clinique de dermatologie à Lagos, entre décembre 2010 et janvier 2012. Des adultes consentants ont été recrutés. Les versions DLQI en Anglais Nigérian et en Yoruba ont été utilisées, composées de 10 éléments évaluant l'impact de la maladie de la peau sur la vie quotidienne au cours des 7 derniers jours. Les questions portent sur les symptômes et les sentiments, les activités quotidiennes, les loisirs, le travail et l'école, les relations personnelles et le traitement. Le score DLQI a un maximum de 30 et un minimum de 0.

**Résultats:** L'analyse a été effectuée sur 2599 formulaires. Il y avait plus de femmes (57.4%, 1491) que d'hommes

(42.6%; 1108); l'âge moyen était de  $36.04 \pm 14.14$  ans. La majorité (27.9%) présentait une infection cutanée, tandis que 23.7% avaient des troubles papulosquameux. Le pourcentage total du score DLQI variait de 0 à 100 %, avec un score total moyen en % de  $34.11 \pm 25.23$ . Le score total moyen le plus élevé en % était dans le domaine 'symptômes et sentiments'; et le pourcentage total moyen le plus bas était dans le domaine 'traitement'.

**Conclusion:** DLQI est un outil utile et faisable pour cet environnement. L'objectif est d'améliorer la qualité de vie des personnes, en particulier celles souffrant d'affections cutanées chroniques telles que la dermatite atopique, le psoriasis et le prurit.

**Mots clés:** DLQI, Adultes, QoL, Nigéria, Qualité de vie

## Introduction

Skin diseases can have a major impact on patients' lives in terms of psychological well-being, social functioning, and everyday activities. The extent of the impairment in daily functioning appears to be related to the severity of the condition, the cosmetic appearance related to this, and can potentially be compounded in developing countries where there is limited access to treatment. The impact on quality of life includes reduced self-esteem, depression, anxiety, and suicidal tendencies. Improvement in the skin conditions has been noted to improve depression. Specific skin diseases such as acne, eczema, psoriasis and vitiligo,<sup>1-3</sup> have been shown to affect QoL.<sup>4</sup>

Assessment of QoL has been increasingly incorporated into the clinical assessment of outcomes in dermatologic patients and is aided by the development of generic and disease-specific QoL instruments. These include Dermatology-specific Quality of Life instrument, Skindex®, Dermatology Life Quality Index (DLQI®); dermatology quality of life scales (DQOLS) and, more recently, Impact of Chronic Skin Disease on Daily Life (ISDL).<sup>5</sup> These various instruments all look at the impact of skin conditions on patients' psychosocial state and everyday activities. They are all self-administered, but have a few differentiating factors; such as the number of questions, use of generic and dermatology specific questions, time taken for completion and the methods of scoring. The patient generated dermatology quality of life scales (DQOLS) were derived from the self-reported impacts of skin conditions by dermatology patients. This questionnaire differs from the DLQI and Skindex, by being grouped into four psychosocial subscales (embarrassment, despair, irritableness, and distress)

and four activity subscales (everyday, summer, and social, sexual).<sup>6</sup> The Skindex assesses four domains (symptoms, emotion and functioning); and the DLQI assesses 6 domains (symptoms and feelings, daily activities, leisure, work and school, personal relationships and treatment).<sup>7</sup> The Skindex is similar to the DLQI and they both take 2-3 minutes to fill.

The DLQI was the first dermatology-specific health-related quality of life (HRQoL) questionnaire which was developed by Findlay et al in 1994. Its use has been described in over 800 publications including many multinational studies in the past two decades.<sup>8</sup> It is concise and user friendly and its reliability and validity have been confirmed in several studies and randomised controlled trials worldwide and is used as an outcome measure.<sup>5,9-11</sup>

Several studies have demonstrated and confirmed the DLQI is replicable, has internal consistency and is sensitive to change. It has been validated with other HRQoL measures.<sup>4,11</sup> There is limited information on the impact of skin diseases on QoL in our practice environment.<sup>12-14</sup> Such data are pertinent to enable care providers understand from a patient perspective, how skin disorders impact social functioning, daily activities and productivity, and the impact of treatment on these often under-emphasized, but important aspects of patients' well-being. Data from the few published studies in Africa<sup>12,13</sup> have demonstrated the importance of QoL assessments in dermatological disorders, and have identified younger age, unemployment and female gender as being independent risk factors for adverse QoL.

The purpose of the present study was to assess the impact of skin diseases on QoL based on the hypothesis that skin diseases significantly impair QoL in dermatology patients and to compare the QoL among various dermatological disorders.

## **Methodology**

The study was conducted in the dermatology outpatient clinic of the Lagos University Teaching Hospital (LUTH). The clinic is a major dermatology referral centre and primarily serves patients attending from within Lagos State (with a population of approximately 17 million) with referrals emanating from general practitioners, family physicians, other physician specialists and occasionally self-referrals. The clinic also receives referrals from other states including the bordering south western states and proximal West African countries. The average annual clinic attendance (new referrals) is 2500–3000 cases.

The study used a cross-sectional design and recruited all consenting consecutively attending new patients referred for dermatology consultation between December 2010 and January 2012. In that time period, 4776 patients attended, of which 2634 adults completed the study protocol. The inclusion criteria were all consenting adults 18 years and above who could respond appropriately to questions; and exclusion criteria were children less than 18 years, patients with altered mental state and non-consenting patients. Approval of the study protocol was obtained from the Health Research Ethics Committee of the hospital.

The data collection was conducted by two study assistants who were pre-trained in instrument administration. The study instrument comprised of a clinical data set and the DLQI® instrument for assessment of QoL (used with permission). The DLQI Nigerian English and Yoruba versions were used in this study. The Yoruba version was validated with a minimum of two parallel independent forward translations, then co-operative agreement, then two independent back translations. It then went through a process of further forward and backward translations until they were satisfied that the translation is as accurate as possible.

The DLQI consists of 10 items which evaluate the impact of skin disease on daily life over the past 7 days. The questions concern symptoms and feelings, daily activities, leisure, work, and school, personal relationships and treatment.

The instrument was piloted on a sample of patients for 2 weeks prior to commencement of the study.

In scoring the DLQI, 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). Response categories include “not at all,” “a little”, “a lot” and “very much,” with corresponding scores of 0, 1, 2, and 3 respectively; the response “not relevant is scored as ”0” and any unanswered question is scored 0. The total score is calculated by summing the score of each question. If two or more questions are left unanswered the questionnaire is not scored. Scale scores are calculated for each domain. Hence, a high score correlates with a more impaired quality of life due to the skin disease.<sup>14</sup> Data was analysed with Epi-info statistical software version 3.5.1. Chi-square was used for the test of associations and a P value less than 0.05 was considered statistically significant.

## **Results**

A total of 4776 new dermatological consultations were observed during the study period. Of these, 2634 met the inclusion criteria and had complete and valid adult DLQI forms. 35 forms were then excluded: 32 based on missing age and 3 had missing gender. Data from 2599 forms were finally analyzed.

The age range of the participants was 18 to 95 years. The mean age was  $36.04 \pm 14.14$  years (females  $35.52 \pm 13.75$  and males  $36.74 \pm 14.61$ ) and 57.4 % of the participants were females. When participants were characterized by disease classification, a majority (27.9%) presented with skin infections, while 23.7% had papulosquamous disorders. Eight percent were classified as others, and this comprised mainly of keloids, bullous disorders, alopecia, post bleaching syndrome and chronic leg ulcers. (Table 1)

**Table 1** Distribution of participants by disease classification

<b>Disease classification</b>	<b>No (%)</b>	<b>Male no (%)</b>	<b>Female no (%)</b>
Infections	726 (27.9)	318 (43.8)	408 (56.2)
Papulosquamous disorders	616 (23.7)	269 (43.7)	347 (56.3)
Pigmentary disorders	262 (10.1)	92 (35.1)	170 (64.9)
Pruritus/Urticaria	229 (8.8)	85 (37.1)	144 (62.9)
Tumors	189 (7.3)	79 (41.8)	110 (58.2)
CTD	49 (1.9)	12 (24.5)	37(75.5)
Eczema	321 (12.4)	174 (54.2)	147 (45.8)
Others	207 (8.0)	79 (38.2)	128 (61.8)
Total	2599 (100)	1108 (42.6)	1491 (57.4)

**DLQI scores**

The total percentage DLQI score ranged from 0 – 100%, with a mean total % score of  $34.11 \pm 25.23$ . Table 2 shows the scores for the various domains of the DLQI questionnaire. Majority of patients were significantly affected in the ‘symptoms and feelings domain’ and less so in their daily activities. The domains least affected were ‘treatment’ and ‘work and school’.

Based on % total scores, the effect of dermatologic

diseases on participants’ QoL was as follows: no effect (292; 11.2%), small effect (591; 22.7%), moderate effect (592; 22.8%), very large effect (817; 31.4%) and extremely large effect (307; 11.8%). The summation of all scores revealed that overall, majority of patients experienced a moderate to extremely large impairment in their QoL and only less than 5% of those who presented felt that their dermatological disease had no impairment on their QoL. There was no significant association between magnitudes of effect of QoL with sex. (Table 3)

**Table 2** Mean DLQI total % score of the participants by DLQI domains

<b>DLQI domain</b>	<b>Mean total % score</b>	<b>Median</b>	<b>IQR</b>	<b>Range</b>
Daily activities	$34.6 \pm 32.83$	33.33	67	0 -100
Symptoms and feelings	$55.66 \pm 30.27$	50.00	50	0 – 100
Work and school	$23.19 \pm 40.94$	.00	100	0 – 100
Personal relationships	$24.98 \pm 32.26$	16.67	50	0 – 100
Treatment	$22.03 \pm 33.26$	.00	33	0 -100
Leisure	$32.69 \pm 32.30$	33.33	50	0 – 100

**Table 3** Association between effect of disease on QoL and sex

Effect of disease on QoL	Female n (%)	Male n (%)	Total n (%)
Extremely large effect	178 (11.9)	129 (11.6)	307 (11.8)
Very large effect	482 (32.3)	335 (30.2)	817 (31.4)
Moderate effect	353 (23.7)	239 (21.6)	592 (22.8)
Small effect	318 (21.3)	273(24.6)	591 (22.7)
No effect	160 (10.7)	132 (11.9)	292 (11.2)
Total	1491 (100)	1108 (100)	2599 (100)

**Comparison of effect of disease by gender using the Chi-square test showed no significant difference between females and males  $X = 6.02$ ;  $P = 0.2$**

**Effect of skin disease classification on DLQI categories**

Over 70% of the patients with papulosquamous disorders, eczema and pruritus/urticaria had significant impairment of their quality of life by their disease condition. There was a statistically significant difference in the symptoms and feelings domain based on the skin disease classification with pruritus (79.7 %), papulosquamous disorders (71.3%) and eczema (71%) having the most effect on patient’s quality of life.

Over 65% of the patients with eczema, papulosquamous disorders, pruritus/urticaria and infections experienced a moderate, very large or extremely large impairment of their QoL as a result of their dermatological disease.

**Discussion**

In our study we have found that the DLQI is a useful tool that is feasible to use in this environment. It was acceptable to patients and was easy to use in our busy clinic environment and this is comparable with studies carried out by other investigators.<sup>15</sup>

The mean age of the population in this study is 36.04 ± 14.14 years; this is similar to that in South Africa (38.7 years) and slightly more than those in studies from the developed world.<sup>5,11</sup> The study from South Africa looked at 607 patients. The mean DLQI score was 6.4 and gender was found not to be associated with a high score, but females were more likely to report effects of skin disease on self-esteem. The study identified the following as risk factors for having a high disability score: dermatologist’

assessment of severity, younger age, unemployment and language. Key determinants of adverse impact on QoL are symptom severity in terms of itching, soreness or pain, unresponsiveness to treatment and relapse.<sup>16</sup>

In comparison, our study did not assess other risk factors such as employment status, language, and dermatologists’ assessment of severity. Additionally, their study was carried out in a multicultural setting and that is possibly why they were looking at other determinants given the background of the study setting. Even though we also have very diverse languages in Nigeria, the setting is quite different to that in South Africa. The study setting, Lagos state is predominantly comprised of Yoruba’s and generally English language can be communicated with the vast majority of people in the state.

Infections (726; 27.9%) were the largest group of skin diseases by classification. In our setting infections are one of the most common skin disorders seen in both community and hospital studies.<sup>17-19</sup> Despite the fact that cutaneous infections are common in our environment, there are no studies documenting their effect on the quality of life of patients affected. Quality of life studies for other skin conditions such as atopic dermatitis, vitiligo, chronic kidney disease and HIV infection have been documented.<sup>20-22</sup> Anaba et al reported that vitiligo significantly impairs QoL in both old and newly diagnosed patients, with all items on the DLQI form being affected. Similar findings were also reported by Abdullahi et al particularly highlighting the role of a disease specific QoL tool, with the stigma component being the highest contributor to the high mean VitiQoL.

Dermatology QoL impairments were documented among newly diagnosed HIV infected patients where majority (90.4%) of patients had large negative effects on their quality of life, with a third of them having cutaneous infections.

The mean DLQI score of  $10 \pm 7.2$ . is comparable with that obtained by Etemesi (9.6%), and in their study social class and language group, but not gender, influenced the impact of skin disease and QoL.<sup>23</sup> Similarly, in Ethiopia, the DLQI was quick and simple to use; the mean DLQI score for all patients was 8.42 and the highest score was for item 2 (feeling conscious). The DLQI was able to distinguish between new and treated patients (median scores 13 vs 3, P, 0.001). Similar findings to our study were that there was no statistically significant difference in DLQI scores by sex.<sup>23</sup>

Finlay and Khan<sup>9</sup> were unable to find any difference in DLQI scores between men and women; contrary to studies by Harlow<sup>24</sup> and Wijnhoven<sup>25</sup> where it has been reported that males and females are affected differently. A Danish study found that females scored higher than males on all the domains except 2. There was an inverse association between DLQI scores and age; suggesting that QoL of older patients is generally less affected by skin disease than the QoL of younger patients. The mean DLQI for atopic dermatitis and psoriasis patients was higher than other dermatoses.<sup>26</sup>

Over 70% of the patients with eczema, papulosquamous disorders and pruritus/urticaria experienced a lot or very much effect on symptoms and feelings and this was statistically significant. These findings are consistent with studies from the developed world where hospitalized patients reported greater impairment of disease-related quality of life than outpatients, and patients with atopic dermatitis and psoriasis exhibited greater scores than patients suffering from other dermatological diseases.<sup>3</sup>

In the study by Krueger et al, they had a good response to the survey conducted amongst members of a psoriasis foundation. There was compelling evidence that psoriasis has a profound emotional, social and physical impact on their quality of life. This information can assist doctors in improving

their communication with patients and will afford them the opportunity to reevaluate management of the patients.<sup>26</sup>

Co morbidities are known to affect the quality of life of individuals. An impaired quality of life has been documented in many conditions including chronic kidney disease, psychological disorders and inflammatory diseases.<sup>27,28</sup> Coexisting co-morbidities with a skin disease adversely affect the outcome on quality of life.<sup>29</sup> Identifying and addressing these comorbidities will improve the disease burden and subsequently the quality of life of patients with skin diseases. There are limited studies looking at the aspect of co-morbidities in this environment.

Despite the large population which is a strength of this study, some limitations are noted. This study did not specifically look at QoL in particular diseases within the groups of dermatological disorders; so, the results are not disease specific. We used a broader classification and this limited our results being specific to diseases, as opposed to grouped diseases. Despite this limitation, the results obtained mean that further QoL specific studies for the identified disease classifications with the most effect on QoL can be planned.

## Conclusion

This study has demonstrated that the use of the DLQI in this environment is comparable with what obtains in other parts of the world. It is a useful tool in assessing patient's quality of life and can be used to enhance the quality of care provided. The effect of certain skin conditions (atopic dermatitis, psoriasis) as demonstrated in this study brings to the fore the wholesome approach to management of chronic skin conditions to include counselling, psychotherapy and psychiatrists as part of the multidisciplinary team.

HRQoL measures may be helpful in decision making and will be a vital means of assessing how patients are affected by their skin conditions. The results from this study suggest that the DLQI can be put to further use successfully in intervention studies and for monitoring response to treatment in patients with atopic dermatitis and psoriasis.

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