

Atopic Dermatitis and the Quality of Life in Children, Adolescents and Their Families

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Abstract

Background: Atopic dermatitis (AD) is a pruritic disease that usually starts in early infancy with an international prevalence rate of 15–30% in children and 2-10% in adults. Measuring the impact of AD on the quality of life is very useful as it allows patients to express their feelings and appreciate their physicians' concerns. It improves doctor-patient communication and helps in disease management.

Objective: A cross sectional observational study that was conducted aimed to determine the effect of atopic dermatitis on the quality of life among children and adolescents attending dermatology outpatient clinics at Kasr Al Ainy hospital and Pediatric specialized hospital, during the period from November 2015 to June 2016.

Methods: A sample of 400 children, adolescents and their families were included in the study. They were asked to fill the QOL questionnaires (Children Dermatology Life Quality Index (CDLQI), Dermatology Life Quality Index (DLQI) and Dermatitis Family Impact questionnaire (DFI).

Results: Results of the study showed that 48% of AD patients aged (6-16) has very large effect on QOL, 47.3% have extremely large effect and 4.8% have moderate effect while 52% of AD patients aged (16-18) has extremely large effect on QOL and 47% have very large effect. Families of AD patients have very large effect on QOL where 44% have extremely large effect.

Conclusion: This study concluded that AD has a negative impact on the QOL of children, adolescent and their families irrespective to socio-demographic and socioeconomic factors.

Key words: Atopy, life quality, Impact

Introduction:

Atopic dermatitis (AD) is a chronic inflammatory pruritic skin disease that usually starts in childhood and early adolescence. (1) Mostly, atopic dermatitis starts before the age of five years with slight female to male predominance (1.3 to 1). (2) The prevalence of AD has increased for unknown reason; however it is believed that environmental factors, pollutants, exposure to allergies are the main causes of this increase. (3) The latest prevalence for AD showed that 5 - 20 % of children are affected worldwide. (4)

There are multiple risk factors for atopic dermatitis mainly a positive family history of atopy. (5) Early day care, farm animal, pets in early life and the excessive use of broad-spectrum antibiotics may be risk factors due to a general increase in exposure to non-pathogenic microbes. (6) Food allergy could be association or an exacerbating factor for AD. (7)

There are three age-group stages of atopic dermatitis: infantile (infancy to 2 years old) present as lesions on the extensor surfaces and cheeks or scalp, childhood (2 to 12 years old) present as lichenified plaques in a flexural distribution, and the adult stage (older than 12 years) present as thickened skin mostly over the face, wrists and forearms. (8) Atopic dermatitis can present in three clinical phases, acute phase presents with a vesicular, weeping, crusting eruption, sub-acute phase presents with dry, scaly, erythematous papules and plaques and the chronic phase which is usually associated with lichenification from repeated scratching. (9)

The criteria for diagnosing atopic dermatitis are published by the United Kingdom working group on atopic dermatitis with the aim of developing a minimum list of

reliable discriminators for atopic dermatitis. (10) The published criteria include one mandatory and at least three of five major criteria. The mandatory criterion is the evidence of pruritic skin, including the report by a parent of a child rubbing or scratching while the major criteria are history of skin creases being involved, history of asthma or hay fever, the presence of generally dry skin within the past year, symptoms beginning in a child before the age of two years and/or visible dermatitis involving flexural surfaces. (10)

The optimal management of atopic dermatitis requires an approach that involves the elimination of exacerbating factors, restoration of the skin barrier function and hydration of the skin, patient education, and pharmacologic treatment of skin inflammation. (11) Many patients with atopic dermatitis can initially be treated by a family physician. Patients should be referred to a specialist (e.g., dermatologist, allergist) when the diagnosis is uncertain, inadequate response to the appropriate therapy and if treatment with systemic immunosuppressive agents is being considered. (12)

Topically applied corticosteroids and emollients are the mainstay of therapy for atopic dermatitis. Topical corticosteroids are applied one or two times per day for 2-4 weeks. Emollients should be used multiple times per day in association with topical corticosteroids. (13) Oral antihistamines may be beneficial in the setting of sleep loss secondary to itch, but should not be substituted for management of AD with topical therapies. (14)

Health related quality of life (HRQOL) is the capacity to perform the usual activities for a person's age and social life. (15) It measures the impact of chronic diseases on the patient's and their families' lives. Over

25% of children with AD suffered continuous eczema associated with moderate to severe HRQOL impairment. (16) In comparison with other chronic diseases, it was found that parents rated moderate to severe eczema as worse for the child than having diabetes and similar to having asthma. (17) It has a major effect on the life of the patient's family through limitation of family diet, eating out, pet ownership and avoidance of certain household products such as soaps and perfumed products. Negative comments from others about fear of contagion or the child's appearance also cause great distress and blame is often felt to be apportioned by spouses or relatives (18).

Methods:

This study is a cross sectional observational study that was done using El-Gilany Questionnaire and its Arabic version to assess socio-economic status, Children's Dermatology Life quality index (CDLQI), Dermatology life quality index (DLQI) and Dermatitis family impact (DFI) to determine the effect of atopic dermatitis on the quality of life among 400 of children and adolescents as well as their families who were attending dermatology outpatient clinics at Kasr Al Ainy hospital and Pediatric specialized hospital, on 3 working days per week for 7 months from November 2015 to June 2016.

The sample size was calculated with 95% Confidence Interval using Epi-Info version. The sample size was 400 participants (children and adolescents). (3) The included participants aged 6 to 18 years old diagnosed with atopic dermatitis according to U.K. Working Party's Diagnostic Criteria. The excluded participants were those having any factor that may affect the quality of life e.g. chronic disease or used any relief med-

ication 1 week prior to the study.

The study passed through three phases: Phase 1: Administrative issues: for protocol revision and ethical approval by the family medicine department, faculty of medicine and Cairo university.

Phase 2: Construction of the study tools and preparing the questionnaires which are

1. El-Gilany Questionnaire and its Arabic version: This scale includes 7 domains with a total score of 84, with a higher score indicating better SES. It is validated too (19)
2. Children's Dermatology Life Quality Index and its Arabic version (CDLQI) for children aged 6-16 years. It is self-explanatory composed of 10 questions. It is usually completed in one to two minutes. Each question has four alternative responses: "not at all", a "little", a "quite a lot", or "very much" with 0, 1, 2 and 3 scores respectively. The CDLQI was calculated by summing the score of questions, resulting in a maximum of 30 and minimum of zero. The higher the score the greater the impairment of life quality. All the questions referred to the preceding week. It is validated tool (20)
3. Dermatology Life Quality Index (DLQI) and its Arabic version for patients above the age of 16. It is self-explanatory 10 questions questionnaire and is usually completed in one to two minutes. The DLQI was calculated by summing the score of questions, resulting in a maximum of 30 and minimum of zero. The higher the score, the greater impairment of quality of life. It is validated tool. (21)
4. Dermatitis Family Impact Questionnaire (DFI) and its Arabic version for the families of the above mentioned 2 groups. DFI consists of simple 10 questions, usually filled in 2 minutes. Each question was assigned a score from 0 to 3 with the zero score indicated no influence and score 30 indicated the highest impairment of the function. It is validated tool. (22)

The approval to use these questionnaires was taken by an email from the authors.

Phase 3: Field work (implementation) phase: A structured patient interview was done that took 15 minutes included screening for readiness to participate in the study/informed consent, full history taking, physical examination and filling the questionnaires.

Phase 4: Data management and statistical analysis: All collected questionnaires were revised for completeness. Then the collected data were coded and entered on the computer using spread sheet "Microsoft Office Excel Software" program, 2007. Data management and statistical analysis were

performed using the Statistical Package for Social Sciences (SPSS) version 21. Numerical data were summarized using means and standard deviations or medians and ranges. Categorical data were summarized as percentages. Comparisons between the 2 groups with respect to normally distributed numeric variables were done using the t-test. Comparisons between more than 2 groups (SES) done with univariate ANOVA test. Correlations were determined by using Pearson's test. P value of ≤ 0.05 was considered statistically significant.

The mean age of the study participants was 8.5 ± 2.9 with (51.5%) were females and mostly living in urban areas (60.5%). The

Results:

Table (1): Socio-demographic characteristics of the study participants

Socio-demographic characters		No.	%
Age (years)	Mean \pm SD	8.5 \pm 2.9	
	Range	6-18	
	Childhood 6-10	321	80.3
	Early adolescent 10-13	42	10.5
	Mid adolescent 14-15	14	3.5
	Late adolescent 16-18	23	5.7
Gender	Male	194	48.5
	Female	206	51.5
Residency	Rural	158	39.5
	Urban	242	60.5
Socioeconomic status Score=84	Very Low (score ≤ 21)	4	1.0
	Low (score 22-42)	312	78.0
	Moderate (43-63)	79	19.8
	High (64-84)	5	1.3

socioeconomic status according to El Gilany questionnaire was low in (78%) while high status was found in only (1.3%).

The children aged (6-16 years) are categorized according Children's Dermatology Life Quality Index (CDLQI) as addressed

in figure (1). It shows that; 48% of children with AD have very large effect on QOL, 47.3% have extremely large effect and 4.8% have moderate effect.

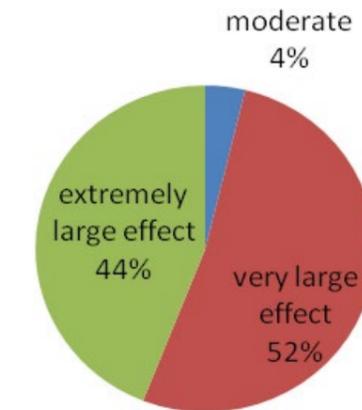


Figure (1): Classification according to Children Dermatology Life Quality Index total score

The children aged >16 years are categorized according Dermatology Life Quality Index (DLQI) as addressed in Figure (2). It shows that 52% of AD patients have extremely large effect on QOL. On the other hand, 47% have very large effect. Figure (3) demonstrates that 52% of AD patients families have very large effect on QOL, 44%

have extremely large effect and 3% have moderate effect according to Dermatitis Family Impact Questionnaire (DFI). Table (2) shows that there is a significant positive correlation between CDLQI score and DFI score (P value 0.001). However there is no correlation between quality of life and the socio-economic status.



Fig (2): Classification according to DLQI

Fig (3): Classification of QOL according to DFI

Table (2): Correlation between CDLQI score and DFI score

		Age	Duration of disease	SES score	CDLQI SCORE
Duration of disease	R	.462**			
	P value	<0.001			
SES score	R	.008	.039		
	P value	.866	.434		
CDLQI SCORE	R	.086	.090	.026	
	P value	.085	.071	.598	
DFI SCORE	R	.007	.084	-.085	.473**
	P value	.890	.095	.090	<0.001

** Significant

Discussion:

In the present study, the majority of the patients were of low socioeconomic status (78%). In contrast, Al Shobaili (23) study which was conducted at Qassim region in Saudi Arabia and aimed to clarify the impact of childhood atopic dermatitis on family life, found that most of AD patient were of intermediate socioeconomic state (63.5%). This difference is mostly attributed to the fact that most patients who came to Kasr Al Ainy hospital are of low SES.

In the current study, AD had large effect on QOL in children where 48% of the patients and 47.3% considered extremely large effect. In contrast, Amaral et al(24) which was conducted at Brazil found that 38% of the patients had moderate effect on QOL and 34% had very large effect on QOL.

The current study stated that 47% of the AD adolescent patients had large effect on QOL and 52% considered extremely large effect. A study done by Sanchez et al(25) throughout Spain indicated that AD had a very large effect in 27.1%, and an extremely large effect in 2.6%.

The present study showed that 52% of AD patients, families had very large effect on

QOL, 44% had extremely large effect and 3% have moderate effect. On the other hand Al Shobaili (23) found that 3.4% of patients, families had normal QOL, 33.3% were mildly affected and 66.4% were moderately affected while 6.9% reported severe effect in their QOL. This discrepancy may be attributed to the differences between the coping abilities of the patient's families where many interrelated factors come to play a role.

In the present study we found that there is statistically significant correlation between CDLQI score and DFI score. This correlation is not related to the socioeconomic status. These results were in agreement with Amaral et al. (24) who found a significant relationship between CDLQI and DFI scores. This means that the higher the score the higher the expected value CDLQI score DFI.

Conclusion:

It is evident that AD has a negative impact on the QOL of children, adolescents and their families irrespective to socio-demographic and socioeconomic factor.

Study limitations:

- The adolescent participants of the study were much more less than the children group.
- The absence of a score for the severity of atopic dermatitis and comparing it with the quality of life in patients and their families.

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المخلص العربي

التهاب الجلد التأتبي وجودة الحياة لدى الأطفال والمراهقين وعائلاتهم

يعد مرض التهاب الجلد التأتبي من الأمراض الجلدية الشائعة والتي عادة تبدأ في سن مبكر في مرحلة الطفولة. نسبة انتشاره عالمياً ١٥ - ٣٠٪ في الأطفال و ٢ - ١٠٪ في المراهقين. يعد قياس اثر الالتهاب الجلدي على جودة الحياة مفيد للمريض لانه يسمح له بالتعبير عن مشاعره تجاه مرضه مما ينعكس على تحسن وصف العلاج واستخدام التدخلات العلاجية البديلة. هذه الدراسة هي دراسة وصفية مقطعية لتحديد مدى تأثير التهاب الجلد التأتبي على جودة الحياة لدى الاطفال والمراهقين المصابين بالمرض الى جانب عائلاتهم المترددين على عيادات الامراض الجلدية بمستشفيات القصر العيني والاطفال التخصصي في الفترة من نوفمبر ٢٠١٥ وحتى يونيو ٢٠١٦ وقد شملت الدراسة ٤٠٠ طفل ومراهق واسرهم قاموا بملأ الاستبيانات المختلفة الخاصة بقياس جودة الحياة لدى المرضى وهم (مؤشر جودة الحياة لدى مرضى الجلدية الأطفال، المقياس الجلدي لجودة الحياة و استبيان معرفة تأثير الحساسية الجلدية على اسرة المريض) لقد اظهرت الدراسة ان ٤٨٪ من المرضى الذي تتراوح اعمارهم بين ٦ - ١٦ عاماً يعانون من تأثير كبير جدا للمرض على جودة الحياة وان ٤٧,٣٪ يعانون من تأثير كبير بينما ٤,٨٪ يعانون من تأثير متوسط. اما المرضى الذين تتراوح اعمارهم بين ١٦ - ١٨ عاماً يعانون ٥٢٪ منهم من تأثير كبير للغاية للمرض على جودة الحياة وان ٤٧٪ يعانون من تأثير كبير جدا وبالنسبة لأسر المرضى اتضح ان ٥٢٪ منهم يعانون من تأثير كبير جدا على جودة الحياة وان ٤٤٪ منهم يعانون من تأثير كبير للغاية. وقد خلصت الدراسة الى ان التهاب الجلد التأتبي يؤثر سلبي على جودة الحياة بالنسبة للاطفال والمراهقين المصابين الى جانب عائلاتهم بصرف النظر عن العوامل الاجتماعية والبيوغرافية.