

A Global Review of the Quality of Life Impact of Atopic Dermatitis in Children

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BACKGROUND

- Atopic dermatitis (AD) is the most common dermatologic diagnosis around the globe, affecting nearly 25% of children in developed countries.¹
- Approximately 50% of children with AD experience significantly impaired quality of life (QOL).² This AD-related QOL impact has been ranked higher than that of other chronic conditions such as renal disease, diabetes, and cystic fibrosis.^{2,3}
- AD-related QOL impact goes beyond patients' frustrations due to dry, itchy skin and is linked to increased comorbidities, decreased social functioning, and impaired psychological health.^{2,4,5}

OBJECTIVE

- The purpose of this study was to review the QOL impact of AD among children around the world.

METHODS

- A targeted MEDLINE literature search (PubMed) was performed to identify studies from various countries that focused on the QOL impact of AD in children. Data extracted from each study included the population characteristics, disease severity and QOL assessment, outcomes, and conclusions.

RESULTS

- Disease severity (Table 1) was assessed via the Eczema Area and Severity Index (EASI), the Objective Scoring Atopic Dermatitis (SCORAD) tool, the Rajka and Langeland Scoring System, and patient/parent evaluation.
- QOL instruments employed (Table 1) included the Infant's Dermatitis Quality of Life Index (IDQOL), the Children's Dermatology Life Quality Index (CDLQI), and the Dermatology Family Index (DFI).

Figure 1. Study Regions and QOL Tools

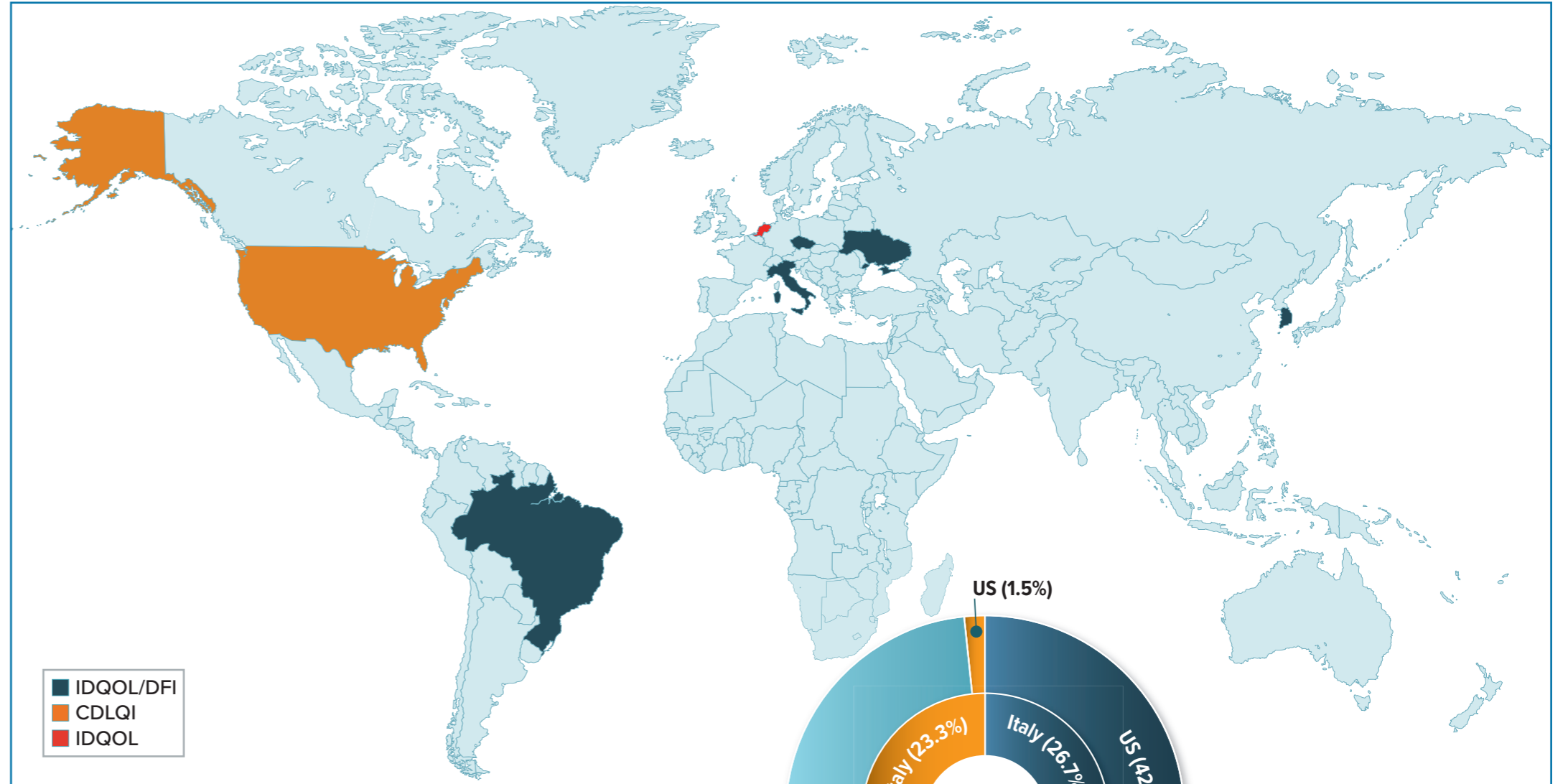


Figure 2. Disease Severity Distribution

Objective SCORAD used in Italy.³ Rajka and Langeland used in the US.¹¹ Fivenson et al.¹⁰ did not report the percentage of patients with moderate disease. However, the study notes that disease severity was assessed as "mild," "moderate," or "severe." Therefore, the percentage of patients with moderate disease was calculated as the residual of all patients excluding those with mild and severe disease.

- Data obtained were representative of patients in three geographic regions: the Americas, Europe, and Asia (Figure 1).
- Among countries that reported the distribution of disease severity, the majority of patients had moderate disease (Figure 2).
- All studies assessed the correlation between disease severity and QOL impact (Table 2).
- Pruritus, embarrassment, and mood alterations were reported as factors most impacting QOL (Table 2).

Table 2. Results

Study	Country	Population Characteristics	Disease Severity ^a	QOL ^a	Outcomes/Conclusions
4	Brazil	42 children 45.2% male Age (months) • Median: 25.2	EASI • 9.2 (4.1)	IDQOL • 9.2 (5.0) DFI • 8.5 (4.4)	<ul style="list-style-type: none"> EASI × IDQOL correlation = 0.219 EASI × DFI correlation = 0.337 Most affected domains: <ul style="list-style-type: none"> IDQOL: Pruritus, mood, treatment, and bath DFI: Treatment expenses, family purchases, sleep in family members, and exhaustion AD adversely affects QOL of pediatric patients and their families
3	Italy	60 children 50% male Age (years) • Mean (SD): 4.5 (3.3)	Objective SCORAD • 29.46 (16.31) • Mild: 26.7% • Mod: 50.0% • Severe: 23.3%	IDQOL/CDLQI • 7.0 (5.21) DFI • 7.95 (6.21)	<ul style="list-style-type: none"> Objective SCORAD × IDQOL/CDLQI correlation = 0.401 Objective SCORAD × DFI correlation = 0.414 DFI × IDQOL/CDLQI correlation = 0.755 Strong association between QOL and disease severity
10	US	58 children < 4 years old 133 children 4-16 years old	Patient-assessed • Mild: 43% • Severe: 12% Rajka and Langeland • Mild: 42% • Severe: 1.5%	CDLQI • 5.8 (5.9)	<ul style="list-style-type: none"> Positive correlation between patient-assessed severity and itching Factors most affecting QOL: Itch, embarrassment, and treatment Patient-assessed severity had stronger correlation with CDLQI (r = 0.55) than provider-assessed severity (r = 0.26)
11 ^b	Ukraine	103 children < 4 years old	Parent-assessed • 1.86 (0.80)	IDQOL • 7.50 (4.50) DFI • 9.44 (5.69)	<ul style="list-style-type: none"> IDQOL and DFI results well correlated with parental assessment of disease DFI results not correlated with patients' age Mean DFI results not significantly different between countries AD had significant impact on child's mood in all studied countries
	Czech Republic	126 children < 4 years old	Parent-assessed • 2.11 (0.88)	IDQOL • 7.65 (5.63) DFI • 7.43 (5.86)	
	Singapore	44 children < 4 years old	Parent-assessed • 2.07 (1.25)	IDQOL • 8.16 (5.68) DFI • 8.45 (6.97)	
	Netherlands	49 children < 4 years old	Parent-assessed • 1.90 (0.96)	IDQOL • 4.69 (3.77)	
	Brazil	43 children < 4 years old	Parent-assessed • 1.98 (0.94)	IDQOL • 9.35 (5.00) DFI • 8.37 (4.43)	
	South Korea	54 children < 4 years old	Parent-assessed • 2.56 (0.88)	IDQOL • 11.30 (6.20) DFI • 10.04 (7.57)	

NR = not reported; SD = standard deviation.

^a Disease severity and QOL reported as mean (SD) unless otherwise noted.

^b Parent-assessed severity based on a single initial question on the IDQOL for parental assessment of global clinical severity, which is scored separately from the QOL and graded 0-4, from none to extremely severe.

Table 1. Disease Severity and QOL Instruments Employed

Instrument	Description	Scale Range
Disease Severity		
EASI	Assesses severity of dermatosis based on association between presence of clinical signs and body surface area ⁴	0-72 †
Objective SCORAD	Measures AD extent and intensity ⁶	0-83 †
Rajka and Langeland Scoring System	Assesses disease course over the most recent year, presents extent of AD and associated itching ⁷	0-9 †
QOL		
CDLQI	Assesses symptoms, feelings, leisure, school/vacations, personal relationships, rest, and treatment in children age 5-16 years ^{8,9}	0-30 †
DFI	Assesses AD impact (e.g., expenses, relationships, sleep) within the family ^{8,9}	0-30 †
IDQOL	Assesses sleep, humor, difficulty participating in recreational activities/family life, and more in children under 4 years old ^{8,9}	0-30 †

† = higher score indicated higher severity.

CONCLUSIONS

- Although AD is not categorized as a life-threatening condition, it is recognized as a disease that affects multiple domains of QOL starting as early as infancy and sometimes persisting throughout life.
- Almost all of the studies reviewed that reported CDLQI or IDQOL also reported DFI. This suggests that consideration of the QOL impact on pediatric patients with AD should not be limited to the impact on the patient, as the QOL of family members is impacted, as well.

REFERENCES

Please see handout for complete reference list.

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