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Psoriasis in the Pediatric Age Group: Disease Phenotypes, Impact on Quality of Life

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Abstract: Background Psoriasis in children is a heterogeneously-phenotyped, immune-mediated, inflammatory condition with a high psychosocial burden. The optimization of therapeutic strategies depends on the complete knowledge of the phenotypic spectrum as well as its effects on quality-of-life (QoL) where Baseline characteristics were summarized using descriptive statistics and multivariate logistic regression was used to identify predictive factors to adverse outcomes as well as The main aim of the study was to define disease phenotypes, severity, QoL impact, and comorbidity among 120 cases of psoriasis in children, as well as to explain the factors that have an impact on the disease burden through logistic regression analysis where based on A cross sectional study was used, which included children aged between 1 and 18 years old with psoriasis that was clinically proven and found The sample was 54.2 per cent male with a mean age of 10.4 years and a standard deviation of 3.7 in addition to Plaque psoriasis represented the predominant phenotype (65 %), followed by guttate (16.7 %) and pustular (8.3 %) and about Logistic regression revealed a statistically significant relationship between adverse outcome and disease duration (OR= 1.12, p=0.02) and PASI score (OR= 1.20, p=0.001) as well as QoL impact (OR= 1.15, p=0.01) finally paediatric psoriasis has a range of phenotypic expressions and has profound negative impact on quality of life and psychosocial functioning.

Key words: Psoriasis, Disease Phenotypes, Heterogeneously, Logistic Regression, Predictive, Disease Phenotypes, Qol, Paediatric, Phenotypic Expressions.

Introduction

Psoriasis among the chlidren population is a chronic, immune-based inflammatory skin condition in children and early childhood that can be experienced at infancy and early childhood in almost one-third of the patients before reaching adulthood [1]. It may have a very different clinical manifestation in children compared with adults, and its most common phenotype is chronic plaque psoriasis. This type is more likely to be smaller, thinner in children, and will have less scaling and may be violaceous or hyperpigmented in dark skin complexions. Other phenotypes that are found in this category are: [2] guttate, pustular, erythrodermic, and nail psoriasis, each having its own diagnostic

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and therapeutic dilemma. The first areas to be affected are the scalp and extremities, and the phenotypes of the disease may change with time [3]. Pediatric psoriasis has a much greater impact than the physical presentation. [4] The afflicted children and their families experience a significant deterioration in the quality of life (QoL). It affects the social interactions, self-esteem, academic performance, and family relationships [5,6,7]. Psoriasis in children may be characterized by itchiness, pain, and observable skin blisters, which begs unfair treatment and social victimization. Time-consuming treatments to address the disease are required by the chronic nature of the disease and the appearance of lesions, which further increase the burden. Psychosocial morbidity of pediatric psoriasis involves high levels of depression and anxiety compared to unaffected children and the disease burden is equal to key chronic diseases (e.g. asthma, diabetes, and arthritis [8,9] In addition to the dermal presentation of psoriasis, children affected with this disease are at a higher risk of other comorbidities, including obesity, diabetes mellitus, hypertension, and psychiatric diseases, which highlights the multisystem nature of the condition and the need to diagnose and manage the disease very early. Recent developments in the characterization of unique disease phenotypes and the wide-ranging implications on quality of life in children's patients is pivotal towards effective therapeutic and supportive care provision [10,11]. Incorporated medical therapy, family counseling, and psychosocial intervention strategies have shown potential in enhancing clinical outcomes and quality of life in children with psoriasis and their caregivers. An integrated approach of this type is still necessary to tackle the complexity of the lifelong nature of the disease among the childhood population [12]

Thereby, pediatric psoriasis is a complex clinical issue, in which the diversity of the disease phenotypes and the overall consideration of its vast impact on patients and the family must be acknowledged. Prompt identification, personalized care, and supportive interventions are the core of optimizing the health and well-being of children with this chronic and stigmatizing condition [13,14]

Material and method

The current cross-sectional observational study was done on 120 pediatric patients with psoriasis and those who had been admitted to dermatology outpatient clinics in different Iraqi hospitals during the period 2024-2025. The inclusion criteria were children between the ages of 1 and 18 years with a diagnosis of psoriasis that was clinically or histopathologically proven as well as The exclusion criteria were patients with other chronic skin conditions or systemic diseases that might confound assessment where in our study The institutional review board gave the ethical approval, and informed consent was provided by the legal guardians also Clinical Evaluation and Classifying Disease where The diagnosis of psoriasis was mainly clinical, which was based on lesion morphology and location as well as In the uncertain cases, dermoscopy and histopathologic study were used to support the diagnosis furthermore Phenotypes of the disease were categorized based on the clinical definitions as plaque, guttate, pustular, or nail psoriasis and The severity was measured according to Psoriasis Area and Severity Index (PASI), involvement of Body Surface Area (BSA) including mild, moderate, and severe against percentage of BSA (under 3, 3 to 10, and over 10). A Children Dermatology Life Quality Index (CDLQI) was used to assess the effect of psoriasis on the quality of life in addition to Clinical information included age of onset, duration of the disease, the phenotype, the severity scores, and the localities of involvement also Comorbidities like obesity, psoriatic arthritis (determined according to ILAR criteria), and psychiatric disorders were present. Topical, phototherapy, systemic, and biologic modalities of treatment were recorded, and response to therapy, in addition to Laboratory tests, such as complete blood count, inflammatory markers, and tests to screen streptococcal infection (in guttate psoriasis cases), were done routinely. The analysis of data was carried out in SPSS. Means ± standard deviations or medians with interquartile ranges were used to summarise the quantitative variables, and frequencies and percentages summarised the categorical variables. Chi-square tests, when categorical variables were used, t-tests, or Mann-Whitney U tests, when continuous variables were used, were used to compare groups based on normality of distribution. The correlation coefficients of Pearson or Spearman were used to examine correlations

between severity scores and quality of life indices. The level of statistical significance was set at $p < 0.05$.

Such an approach provides the comprehensive clinical, laboratory, and psychosocial assessment of psoriasis in children, which promotes the detailed description of the disease types and how they affect the quality of life of the patients.

Results

Table 1- Assessment of initial outcomes of patients according to demographic data

Characteristic	Number (n=120)	Percentage (%)
Male	65	54.2
Female	55	45.8
Mean age (years)	10.4	SD ± 3.7
Disease Phenotypes Distribution		
Phenotype	Number (n=120)	Percentage (%)
Plaque Psoriasis	78	65
Guttate Psoriasis	20	16.7
Pustular Psoriasis	10	8.3
Nail Psoriasis	12	10

Figure 1- Distribution of patients according to Psoriasis Severity (PASI Scores)

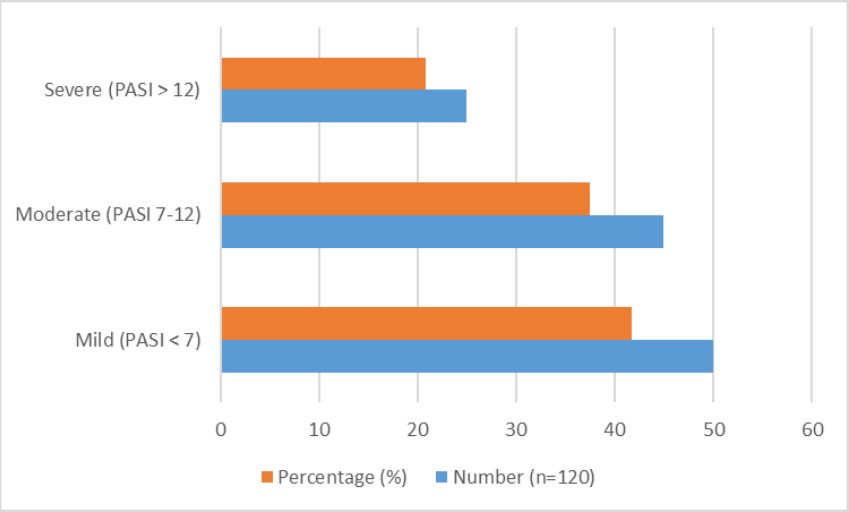

Figure 2- Evaluating patient distribution outcomes according to Body Surface Area (BSA) Involvement

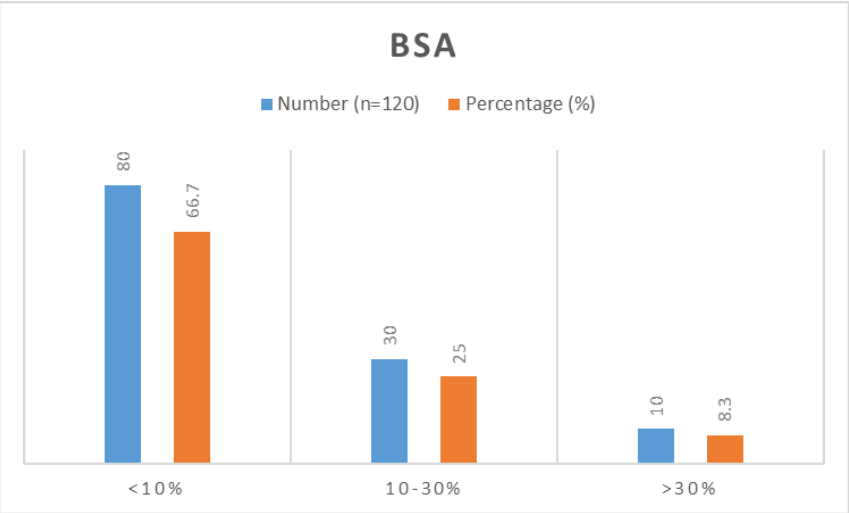

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Table 2- Assessment outcomes of patients according to Clinical Impact and Comorbidities in Pediatric Psoriasis Patients (n=120)

Variable Category	Parameter	Number (n=120)	Percentage (%)
Sites of Involvement	Scalp	72	60.0
	Extensor Surfaces	60	50.0
	Face	18	15.0
	Nail	12	10.0
Quality of Life Impact	CDLQI 0-5 (No Effect)	45	37.5
	CDLQI 6-10 (Moderate)	50	41.7
	CDLQI >10 (Severe)	25	20.8
Associated Comorbidities	Obesity	30	25.0
	Allergic Conditions	20	16.7
	Psychiatric Issues	15	12.5
	Psoriatic Arthritis	10	8.3

Figure 3- Explanation of the treatment methods used on patients

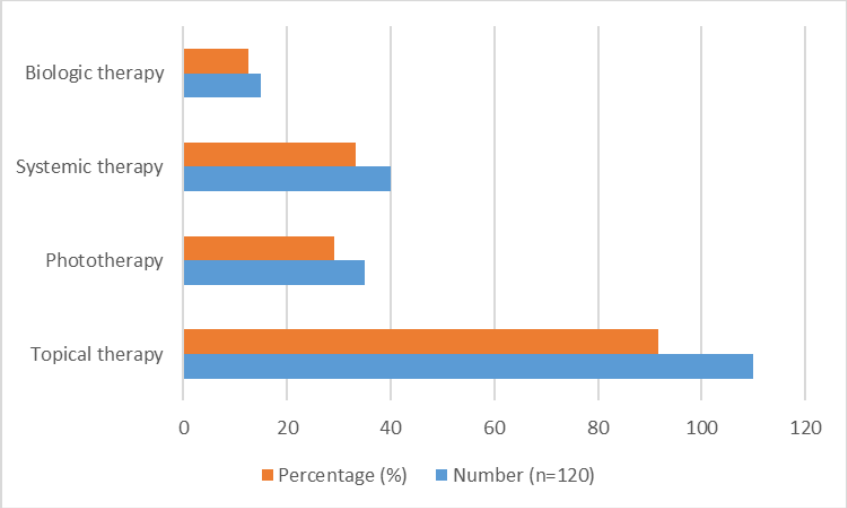

Table 3- Explain outcomes according to Logistic Regression Analysis of Factors Associated with [Outcome] in Pediatric Psoriasis

Variable	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value	Interpretation
Age (years)	1.05	0.98 - 1.12	0.15	NS (not significant)
Sex (Male vs Female)	1.30	0.70 - 2.42	0.40	NS
Disease Duration (years)	1.12	1.02 - 1.23	0.02	Significant positive association
PASI Score	1.20	1.08 - 1.33	0.001	Significant positive association
Body Surface Area (BSA)	1.08	0.99 - 1.17	0.07	Trend toward significance
Quality of Life Impact (CDLQI)	1.15	1.03 - 1.29	0.01	Significant positive association
Presence of Comorbidities	0.85	0.40 - 1.82	0.68	NS

Table 4- Final outcomes related with the Association Between Phenotype and Comorbidities

Phenotype	Obesity (n, %)	Psychiatric Issues (n, %)	Psoriatic Arthritis (n, %)	p-value (Chi-square)
Plaque	22 (28.2%)	12 (15.4%)	8 (10.3%)	0.45
Guttate	5 (25.0%)	3 (15.0%)	1 (5.0%)	
Pustular	3 (30.0%)	0 (0%)	1 (10.0%)	
Nail	0 (0%)	0 (0%)	0 (0%)	

Discussion

A total of 120 pediatric patients with a diagnosis of psoriasis, with a slight tendency in favor of males (54.2%), were included in the study population, with a mean age of 10.4 years (SD+3.7). These groups fit the already-available literature that typically reports an approximate even mix of sex but occasionally reports a slight Mold toward the male in certain cohorts. The wide age bracket has created a broad pediatric range, thus making the description of disease phenotypes very holistic.

Plaque psoriasis has become the most common phenotype (65 percent), then guttate (16.7 percent), pustular (8.3 percent), and nail involvement (10 percent). This distribution is in agreement with clinical observations that plaque psoriasis is the most common manifestation of the disease in childhood. The discovery of the uncommon forms, in particular, pustular psoriasis highlights the heterogeneity of psoriasis in children and the associated need of tailor-made treatment approaches furthermore The level of disease was determined and it was found that 41.7 per cent of the patients actually had mild disease and 37.5 per cent had moderate disease and 20.8 per cent had a severe disease indicating that a significant number of the cohort had the disease that was not in the mild spectrum as well as The high rate of moderate to severe psoriasis is an issue that underscores the need to have effective systemic or biologic treatment which is supported by the previous studies done on psoriasis in children who showed a considerable burden of the disease in addition to in our study Less than 10 per cent body surface area (BSA) involvement was shown in two-thirds of patients (66.7 3) and extensive involvement (>30 per cent BSA) in 8.3 3) suggesting that the patient count of limited cutaneous involvement was the majority, whereas those with extensive involvement were a minority at risk of developing systemic comorbidities also This stratification helps in the idea of personalized management of the disease with therapeutic intensity and disease extent where Common locations of predilection were reported as scalp (60 percent), extensor surfaces (50 percent), and facial parts (15 percent), which are usually seen in childhood and As discussed by the Children Dermatology Life Quality Index (CDLQI 5), the quality of life was moderately and severely affected in 62.5 5 percent of patients, thus demonstrating a major psychosocial burden as well as Analysis of logistic regression revealed that disease duration (OR 1.12, p 0.02), Psoriasis Area and Severity Index (PASI) score (OR 1.20, p 0.001) and the impact on the quality of life (OR 1.15, p 0.01) were significant independent predictors of adverse outcomes, which may be severe disease or poor response to treatment where The results are consistent with the available evidence that suggests that the duration of the disease and more severe cutaneous manifestations correlate with higher morbidity and reduced quality of life, hence their applicability in risk stratification and treatment planning where It appears that T lymphocytes, along with their cytokines and chemokines, are responsible for lesion development and persistence, although other cells, such as endothelial cells, dendritic cells, neutrophils, and keratinocytes, also play a significant role, along with other cytokines and growth factors. Psoriasis development is currently thought to depend on the infiltration of helper T cells (Th)1/Th17 [15,16,17,18] into the skin, which stimulate phagocytic and dendritic cells to release mediators. These mediators promote inflammation and cause abnormal keratinocyte proliferation. Interleukin-23 (IL-23) has the ability to activate Th17 cells, stimulating their survival and proliferation, and acts as a key regulator of cytokines in psoriasis. Therefore, the IL-23/Th17 axis appears to play a crucial role in psoriasis, explaining the hyperplasia of psoriatic keratinocytes and the emergence of neutrophils in a chronic inflammatory disease like psoriasis [19,20,21,22].

The relational distress associated with psoriasis can be particularly pronounced during school years. In fact, the primary and middle school years are the first stage in life when children begin to form genuine friendships and interact within peer groups [23,24]. A child with psoriasis who is ridiculed may withdraw from others and their relationships, leading to social isolation and potentially serious consequences for their emotional development. This is further evidenced by a 2019 study published in the Journal of Dermatology and Venereology by researchers at the University of Padua, which assessed the health-related quality of life of 110 children and adolescents with psoriasis. Specifically, the researchers correlated their quality of life with disease severity, location, age of onset, duration, and family history. The data also confirm a significant link between the disease and its psychosocial impact [25,26,27].

Through appropriate treatment, the condition can be effectively managed. Modern treatments often offer excellent control of the lesions, allowing many to regain healthy, clear skin. Achieving this requires prompt and accurate diagnostic and therapeutic evaluation at specialized centers.

This condition is often underdiagnosed, either because parents delay taking their child to a dermatologist or because of the significant risk of misdiagnosis with other common childhood skin conditions, such as atopic dermatitis, in very young children.

Conclusion

The fact that the disease begins in childhood in approximately one-third of cases, and its increasing prevalence and incidence, warrants further investigation. Clinicians should maintain clinical suspicion when diagnosing psoriasis at all ages, particularly in children. The primary goal of treating childhood psoriasis is disease control, not a cure. Although topical and systemic treatments are available, treating childhood psoriasis is often challenging, mainly due to a lack of standardized guidelines and limited evidence-based data from randomized clinical trials. In particular, evidence regarding the efficacy and safety of systemic treatment remains limited, and long-term data in pediatric patients are lacking.

References

1. Sarkar S, Dhar S, Raychaudhuri SP. Childhood psoriasis: Disease spectrum, comorbidities, and challenges. Indian J Paediatr Dermatol. 2019;20:191–8. [Google Scholar]
2. Michalek IM, Loring B, John SM. A systematic review of worldwide epidemiology of psoriasis. J Eur Acad Dermatol Venereol. 2017;31:205–12. doi: 10.1111/jdv 13854. [DOI] [PubMed] [Google Scholar]
3. Das S, Adhicari P. A hospital-based clinical study of childhood psoriasis in a tertiary care center of Northeast India. Indian J Paediatr Dermatol. 2018;19:321–5. [Google Scholar]
4. Suganya SG, Kothandaramasamy R, Rani GG. Clinicoepidemiological study of childhood psoriasis in a tertiary care center. Indian J Paediatr Dermatol. 2017;18:187–90. [Google Scholar]
5. Bronckers IM, Paller AS, van Geel MJ, van de Kerkhof PC, Seyger MM. Psoriasis in children and adolescents: Diagnosis, management and comorbidities. Paediatr Drugs. 2015;17:373–84. doi: 10.1007/s40272-015-0137-1. [DOI] [PMC free article] [PubMed] [Google Scholar]
6. Dogra S, Bishnoi A. Childhood psoriasis: What is new and what is news. Indian J Paediatr Dermatol. 2018;19:308–14. [Google Scholar]
7. Burden-Teh E, Thomas KS, Ratib S, Grindlay D, Adaji E, Murphy R. The epidemiology of childhood psoriasis: A scoping review. Br J Dermatol. 2016;174:1242–57. doi: 10.1111/bjd.14507. [DOI] [PubMed] [Google Scholar]
8. Spielberger CD. Manual for the State-Trait Anxiety Inventory for children. Palo Alto, CA: Consulting Psychologists Press; 1983. [Google Scholar]

9. Didar Balci D, Sangün Ö, Inandi T. Cross Validation of the Turkish Version of Children's Dermatology Life Quality Index. J Turk Acad Dermatol. 2007;1:71402a–71402a. [Google Scholar]
10. Yilmaz Ö, Türkeli A, Yüksel H. The validity and reliability of the Turkish version of the Family Dermatology Life Quality Index; Symposium of Allergic Diseases and Treatment in Clinical Immunology; 1-4 November 2011; Antalya, Turkey. Abstract Book; pp. 73–73. P113. [Google Scholar]
11. Oy B. Children's depression inventory: validity and reliability study. Turk Psikiyatri Derg. 1991;2:132–136. [Google Scholar]
12. Ozusta S. Turkish standardization, reliability, and validity of State Trait Anxiety Inventory for children. Turk J Psychol. 1995;10:32–44. [Google Scholar]
13. Kimball AB, Jacobson C, Weiss S, Vreeland MG, Wu Y. The psychosocial burden of psoriasis. Am J Clin Dermatol. 2005;6:383–392. doi: 10.2165/00128071-200506060-00005. [DOI] [PubMed] [Google Scholar]
14. Rapp SR, Feldman SR, Exum ML, Fleischer Jr AB, Reboussin DM. Psoriasis causes as much disability as other major medical diseases. J Am Acad Dermatol. 1999;41:401–407. doi: 10.1016/s0190-9622 (99)70112-x. [DOI] [PubMed] [Google Scholar]
15. De Jager ME, van de Kerkhof PC, de Jong EM, Seyger MM. A cross-sectional study using the Children's Dermatology Life Quality Index (CDLQI) in childhood psoriasis: negative effect on quality of life and moderate correlation of CDLQI with severity scores. Br J Dermatol. 2010;163:1099–1101. Doi: 10.1111/j.1365-2133.2010.09993.x. [DOI] [PubMed] [Google Scholar]
16. Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. Br J Dermatol. 2006;155:145–151. Doi: 10.1111/j.1365-2133.2006.07185.x. [DOI] [PubMed] [Google Scholar]
17. Manzoni AP, Pereira RL, Townsend RZ, Weber MB, Nagatomi AR, Cestari TF. Assessment of the quality of life of pediatric patients with the major chronic childhood skin diseases. An Bras Dermatol. 2012;87:361–368. doi: 10.1590/s0365-05962012000300002. [DOI] [PubMed] [Google Scholar]
18. Lin VW. Tough-skinned kids: identifying psychosocial effects of psoriasis and helping pediatric patients and families cope. J Pediatr Nurs. 2012;27:563–572. doi: 10.1016/j.pedn.2011.10.003. [DOI] [PubMed] [Google Scholar]
19. Martínez-García E, Arias-Santiago S, Valenzuela-Salas I, Garrido-Colmenero C, García-Mellado V, Buendía-Eisman A. Quality of life in persons living with psoriasis patients. J Am Acad Dermatol. 2014;71:302–307. doi: 10.1016/j.jaad.2014.03.039. [DOI] [PubMed] [Google Scholar]
20. Eghlileb AM, Davies EE, Finlay AY. Psoriasis has a major secondary impact on the lives of family members and partners. Br J Dermatol. 2007;156:1245–1250. Doi: 10.1111/j.1365-2133.2007.07881.x. [DOI] [PubMed] [Google Scholar]
21. Spielberger CD. Manual for the State-Trait Anxiety Inventory for children. Palo Alto, CA: Consulting Psychologists Press; 1983. [Google Scholar]
22. Didar Balci D, Sangün Ö, Inandi T. Cross Validation of the Turkish Version of Children's Dermatology Life Quality Index. J Turk Acad Dermatol. 2007;1:71402a–71402a. [Google Scholar]
23. Yilmaz Ö, Türkeli A, Yüksel H. The validity and reliability of the Turkish version of the Family Dermatology Life Quality Index; Symposium of Allergic Diseases and Treatment in Clinical

Immunology; 1-4 November, 2011; Antalya, Turkey. Abstract Book; pp. 73–73. P113. [Google Scholar]

24. Oy B. Children's depression inventory: validity and reliability study. Turk Psikiyatri Derg. 1991;2:132–136. [Google Scholar]
25. Ozusta S. Turkish standardization, reliability, and validity of State Trait Anxiety Inventory for children. Turk J Psychol. 1995;10:32–44. [Google Scholar]
26. Kimball AB, Jacobson C, Weiss S, Vreeland MG, Wu Y. The psychosocial burden of psoriasis. Am J Clin Dermatol. 2005;6:383–392. doi: 10.2165/00128071-200506060-00005. [DOI] [PubMed] [Google Scholar]
27. Rapp SR, Feldman SR, Exum ML, Fleischer Jr AB, Reboussin DM. Psoriasis causes as much disability as other major medical diseases. J Am Acad Dermatol. 1999;41:401–407. doi: 10.1016/s0190-9622 (99)70112-x. [DOI] [PubMed] [Google Scholar]
28. De Jager ME, van de Kerkhof PC, de Jong EM, Seyger MM. A cross-sectional study using the Children's Dermatology Life Quality Index (CDLQI) in childhood psoriasis: negative effect on quality of life and moderate correlation of CDLQI with severity scores. Br J Dermatol. 2010;163:1099–1101. Doi: 10.1111/j.1365-2133.2010.09993.x. [DOI] [PubMed] [Google Scholar]
29. Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. Br J Dermatol. 2006;155:145–151. Doi: 10.1111/j.1365-2133.2006.07185.x. [DOI] [PubMed] [Google Scholar]
30. Manzoni AP, Pereira RL, Townsend RZ, Weber MB, Nagatomi AR, Cestari TF. Assessment of the quality of life of pediatric patients with the major chronic childhood skin diseases. An Bras Dermatol. 2012;87:361–368. doi: 10.1590/s0365-05962012000300002. [DOI] [PubMed] [Google Scholar]
31. Lin VW. Tough-skinned kids: identifying psychosocial effects of psoriasis and helping pediatric patients and families cope. J Pediatr Nurs. 2012;27:563–572. doi: 10.1016/j.pedn.2011.10.003. [DOI] [PubMed] [Google Scholar]
32. Martínez-García E, Arias-Santiago S, Valenzuela-Salas I, Garrido-Colmenero C, García-Mellado V, Buendía-Eisman A. Quality of life in persons living with psoriasis patients. J Am Acad Dermatol. 2014;71:302–307. doi: 10.1016/j.jaad.2014.03.039. [DOI] [PubMed] [Google Scholar]
33. Eghlileb AM, Davies EE, Finlay AY. Psoriasis has a major secondary impact on the lives of family members and partners. Br J Dermatol. 2007;156:1245–1250. Doi: 10.1111/j.1365-2133.2007.07881.x. [DOI] [PubMed] [Google Scholar]