

## The atopic dermatitis' impact on the life quality of pediatric patients and their caregivers

### O impacto da dermatite atópica na qualidade de vida dos pacientes pediátricos e seus cuidadores

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## **ABSTRACT**

Atopic dermatitis is a chronic inflammatory dermatoses, pruritic and relapsing, with variable density in which attacks mostly patients in pediatric age group. Therefore, the disease can cause a series of psychological and social damage because of its consequences at the family's routine. Thus, the disease gets involved at the daily activities and interpersonal relationship. In summary, this study objective is to review articles about atopic dermatitis' impact on the life quality of pediatric patients and their caregivers, using integrative review and literature's descriptive as a method, with a quality approach, at SciELO and Google Scholar data base in the month of June of 2021 with the words: "atopic eczema", "children", "relatives" and "welfare". It was found 200 articles written in English, Portuguese and Spanish, published between 2012 and 2021 that had public access. From this number, 11 studies were selected to compose this review's data base. In conclusion, the atopic dermatitis negatively affects the daily life of pediatric patients and their caregivers. The discomfort caused by the pruritic eczema adds to sleep deprivation and affects the children's development at school, family and psychosocial life. The worst of this disease is related to bad quality of life index. A better understanding of atopic dermatitis' impact can positively affect the patient's frequent treatment and therapeutic strategies.

**Key-words:** Atopic eczema, Children, Relatives, Welfare.

## **RESUMO**

A dermatite atópica é uma dermatose inflamatória crônica, pruriginosa e recidivante, de gravidade variável que acomete principalmente pacientes na faixa etária pediátrica. Sendo assim, a doença pode ocasionar uma série de prejuízos psicológicos e sociais importantes, pois

a mesma acaba implicando diretamente na rotina da criança acometida e indiretamente na das pessoas de seu convívio direto, interferindo assim nos afazeres diários e no relacionamento interpessoal. Dessa forma, a presente pesquisa objetivou revisar sobre o impacto da dermatite atópica na qualidade de vida dos pacientes pediátricos e de seus cuidadores, utilizando-se como método uma revisão integrativa e descritiva da literatura, com uma abordagem qualitativa, mediante busca nas bases de dados SciELO e Google Scholar no mês de junho de 2021, com os descritores: “eczema atópico”, “crianças”, “parentes”, “bem-estar”, foram encontradas 200 publicações redigidas em inglês, português e espanhol, publicados no período entre 2012 a 2021 e que possuíam acesso gratuito. Desse total, 11 estudos foram selecionados para compor a base de dados para a revisão. Conclui-se que a dermatite atópica interfere negativamente na vida diária dos pacientes pediátricos e de seus cuidadores. O desconforto ocasionado pelas lesões eczematosas pruriginosas contribui para a privação de sono e afeta o curso de desenvolvimento da criança no âmbito escolar, psicossocial e familiar, além do custo financeiro e comprometimento da dinâmica familiar. A maior gravidade da doença está relacionada aos piores índices de qualidade de vida. A melhor compreensão dos impactos da dermatite atópica pode melhorar o manejo rotineiro do paciente e as estratégias terapêuticas.

**Palavras-chaves:** Eczema atópico, Crianças, Parentes, Bem-estar.

## 1 INTRODUCTION

The atopic dermatitis (AD) or atopic eczema (AE) is a chronic, pruritic and recurrent inflammatory dermatosis with a variable gravity in children. The disease's characterized by its intense itching and skin damage from the eczema with typical distribution according with the age group (Sousa et al. 2016). The disease's clinical manifestation varies from a light and local condition to a severe and disseminated condition (Carvalho et al. 2017).

At a acute phase, the disease is presented as a ill-defined erythema with edema and vesicles. At a chronic phase there's a well defined scaly erythema with a variable degree of lichenification (Rios et al. 2021).

The atopic dermatitis begins at the first 5 years old in particularly 90% of the patients, advancing according the children's age and involving the facial area, like scalp and the infants' back (Carvalho et al. 2017). Yet, it's noticed that the most significant damage's at the flexion surface, neck, eyelid, fist, hand and feet dorse in most children and adults (Woods, 2017).

As the most predominant dermatological disease that can be developed at childhood, the atopic dermatitis affects between 10% to 20 % of pediatric population in the whole world (Silva et al. 2020). In Brazil, the disease affects 6,3% of the population and this number can hit two or four higher rates than other countries (Antunes et al. 2017). However, the atopic dermatitis in Brazil has a 5 to 10% incidence in children bellow their 12 years old, resulting in a quality of life impact on their caregivers (Silva et al. 2020).

Thus, the chronic condition, the dermatosis' discomfort and the symptom's intensity creates a series of events at the children and their caregiver's quality of life, in which the worst of this condition causes a scholar, social and familiar adequation difficulty (Dias et al. 2017). In this way, a lot of aspects at the pediatric patient's quality of life can be affected, since their type of clothes, playing sports capacity, bathing time, continuous use of emollients and even sleepiness loss (Rios et al. 2021). Thereby, based on the context that atopic dermatitis causes quality of life loss on pediatric patients and their caregivers, this research aimed to review articles about atopic dermatitis' impact on the life quality of pediatric patients and their caregivers.

## 2 METHODS

It's a integrative and descriptive literature review with a quality approach in which the articles were summarized with the most important life quality impacts caused by atopic dermatitis.

According with Lima et al. (2021), descriptive type research doesn't prove anything but it has the function of describing results with a data that relates with the aim of the study. Thus, there has to be a clear description that represents the researcher's view for the reader (Pereira et al. 2018). For the data exposition, a sampling format was used in a non-random way with a focus at atopic dermatitis' quality of life impact on pediatric patients and their caregivers (Lima et al. 2021).

The elaboration of this research's method was based on the PRISMA recommendation. This recommendation follows a 27-item and 4-step checklist known as a tool that helps authors at their report of systematic reviews and meta-analyses improvement and brings relevant definitions for the construction of any scientific research in which some item changes can appear in specific situations (Galvão et al. 2015).

As for this research, a bibliographic tracking occurred in June of 2021 using the Scientific Electronic Library (SciELO) and Google Scholar data base with Health Science Descriptors (DeCS) key-words: "atopic eczema", "children", "relatives" and "well-being". The inclusion criteria was: published articles since 2012 written in Portuguese, Spanish or English language that related to this study and had free access. In contrast, articles that repeated the data base were excluded, counting just 1 article and excluding the duplicated ones.

After the filter application and respecting the eligibility criteria described above, it was found a total of 200 articles according with the studied data base, in which 97 were from SciELO and 103 were from Google Scholar.

From this total, after the title analysis and reading, 11 articles were selected for this review data base and the studies that related the most to the theme were chosen, excluding those who were repeated and those that didn't related to this present idea.

### 3 RESULTS

From the selected articles (11), 45,45% (5) were written in English language and 54,55% (6) were written in Portuguese language, all of them related to the life quality impact on children with atopic dermatitis and their caregivers, according with the aim of this study.

As for the publication year, 1 article was published in 2021, 1 article was published in 2020, 2 articles were published in 2019, 5 articles were published in 2017, 1 article was published in 2013 and 1 article was published in 2012. Thereby, the year with most published articles was 2017, followed by 2019.

The articles were organized at Table 1 with titles, objectives and conclusions.

Table 1. Selected studies details.

Title	Objective	Conclusion
Quality of life in children and teenagers with atopic dermatitis	"To assess the impact of Atopic Dermatitis in the quality of life of children and teenagers and their family"	"The results show that there is a very high impact on the QoL for atopic dermatitis patients and their families. This makes us suggest the importance of including the quality of life study in clinical evaluations"
Comparison of Behavioral Profile of Children with Different Chronic Skin Diseases	"The main objective is to compare the behavioral profile of children with chronic skin disease (atopic dermatitis, psoriasis and vitiligo)"	"Children with atopic dermatitis showed low competence to activities and children with vitiligo showed low social competence. All groups showed low frequencies of children classified as clinical for scholar competences and high frequencies of children classified as clinic for problem behavior"

Obsessive compulsive symptoms and quality of life in mothers of children with atopic dermatitis	“The purpose of this study was to investigate the effect of atopic dermatitis on quality of life related to maternal health and maternal obsessive compulsive symptoms”	“The results showed that having a child with atopic dermatitis and the severity of the disease do not influence their mothers in terms of obsessive-compulsive symptoms and health-related quality of life, except for physical functioning scores”
Mental health comorbidity in patients with atopic dermatitis	“We aimed to quantify the mental health burden associated with pediatric AD in the United States”	“Strategies to prevent AD or to aggressively treat early skin inflammation might modify the risk of mental health disorders in at-risk children”
Quality of life in children and adolescents with atopic dermatitis and their caregivers	“To assess the impact of AD on the quality of life of patients and caregivers and correlate with the severity of the disease”	“AD interferes negatively in the quality of life of patients and their families, with the worst rates related to the greater severity of the disease”
Impact of atopic dermatitis on the quality of life of the family	“To relate the impact of atopic dermatitis severity on the quality of life of patients and caregivers”	“The quality of life index of caregivers and patients with atopic dermatitis are worse with increasing severity due to expenditure on treatment, sleep loss and exhaustion”
Atopic Dermatitis- From physiopathology to treatment	“This article aims to review the existing literature on atopic eczema, with special focus on the most recent articles about its pathophysiological mechanisms and their treatment”	“Patient education is important to ensure therapeutic success, especially in moderate-severe eczema cases”
Quality of life of caregivers of minors with atopic dermatitis	“To evaluate the impact of (AD) on the quality of life of children's caregivers and adolescents under 18 years old, with this diagnosis, followed up in the city of Santo André”	“Atopic dermatitis affects the family's quality of life, leading to a high degree of family dynamics impairment”
Atopic dermatitis' impact on the quality of life of pediatric patients and their caregivers	“To evaluate the impact of atopic dermatitis on the quality of life of pediatric patients in the age group of 5-16 years, and their parents, assisted at the Dermatology Department of Universidade do Estado do Pará in 2015”	“Atopic dermatitis affects the quality of life of both children and their guardians, and indicates the importance of including the study of quality of life as a complement to clinical evaluation”
Factors influencing quality of life in children with atopic dermatitis and their caregivers: a cross-sectional study	“the purpose of this study is to investigate the impact of atopic dermatitis on HRQOL in a high prevalence area and to assess its related factors”	“More attention should be directed to atopic dermatitis” symptoms and their effect on daily life. The correlation between disease severity and quality of life implicates that treatment should focus on prevention of severe atopic dermatitis”
Does age influence the quality of life in children with atopic dermatitis?	“The aim of this study was to assess their QoL with special emphasis on age differences”	“Regardless of disease severity, treatment and counseling of children suffering from AD should be tailored specifically to their age”

Source: the authors, 2021

#### 4 DISCUSSION

The atopic dermatitis' incidence has grown considerably in recent decades, resulting today's important public health problem, especially in industrialized countries (Rios et al. 2021).

Thus, considered as one of the most prevalent childhood dermatological disease, atopic dermatitis in Brazil has a 5 to 10% incidence in children under their 12 years old, depending on the studied area (Pires et al. 2017). In this context, it is noticed that the atopic dermatitis prevalence in Brazil may vary, both related to region and age group analyzed, with north and northeast regions having slightly higher cases number (Zanandréa et al. 2020).

Durovic et al. (2019) in his study showed that the children's life quality ends up being affected in different ways according to their age group, and the most affected group, according to his studies, were children between 5 to 9 years old, followed by children aged 10 to 16 years old and subsequently those from 0 to 4 years old. The study also showed that the analyzed children's life quality worst effect were: mood changes, itching, school/holidays/hobbies related problems and leisure (Durovic et al. 2019).

Atopic dermatitis is a chronic, recurrent and very pruritic inflammatory skin disease in which may be associated with a skin barrier failure and immune system dysregulation at genetically susceptible host's skin (Graziani et al. 2019). These skin barrier changes are associated with gene mutations and increased colonization by *Staphylococcus aureus*, in some cases, which results in an exacerbated immune response, sensitization to allergens, eosinophilia and high IgE levels (Silva et al. 2020).

Children with atopic dermatitis can have any part of their body affected but it's more common at arms, knees back, face and cheeks area (Bianchi et al. 2019). In some patients with atopic dermatitis, itching is uncontrollable and constant, resulting in reduced life quality for these patients and their families (Silva et al. 2020).

Thus, this corroborates the study by Carvalho et al. (2017), which showed that itching was the most reported symptom in 91% of analyzed patients, with a dominant and potentially limiting symptom, the daily routine becomes a impairment for the patients, causing sleepiness loss of these children and indirectly affecting people of their direct contact.

The study by Campos et al. (2017) showed that children with atopic dermatitis has life quality impairments but it ends up influencing the family dynamics more than the child's own life quality, simply because the child easily abstracts the disease related difficulties. Jirakova et al. (2012) stated that when the child's sick, all the people in their immediate environment also gets sick.

Atopic dermatitis brings a significant amount of baggage to health care resources and the patient's life quality and there are factors that adds to family stress, including sleepiness deprivation, financial costs and even the time spent with the disease itself (Santos et al. 2021).

In this context, the study by Affoson et al. (2020) interviewed 123 caregivers, and found out that 90.4% of them were woman, suggesting that moms, in general, ends up taking the family caregiver position while the male figure takes care of work.

Gunduz et al. (2017) brings to their study that children with atopic dermatitis needs 2 to 3 hours a day of caring and parents can still end up wasting time and having consequences like: work related problems and financial losses.

Atopic dermatitis has an unfavorable impact at the children's social relationships, emotional state and daily activities due to the stigma and lesion appearance (Campos et al. 2017).

The atopic dermatitis diagnosis is clinical and mainly based on morphology, skin lesions distribution and symptoms like pruritus, plus other informations, such as age, personal and family atopies history (Carnauba e Nunes 2019).

The atopic dermatitis treatment includes the use of medications associated with general care, therefore, it's necessary to always keep the skin hydrated (Pires et al.2017), that's why atopic dermatitis patients should take quick warm water showers and always apply an emollient after bathing (Silva et al. 2020).

The brazilian study by Amaral et al. (2012) brings the atopic dermatitis treatment as one of the most cited items due to it's expenses, which reflects the reality of other studies in Brazil. In contrast, the study by Dias et al. (2017) shows that atopic dermatitis ends up requiring important care to avoid situations that causes skin dryness and sweating.

Following the treatment context at children's care, the study by Nina et al. (2017) shows that high temperatures, extreme cold, intense sweating, sudden temperature changes and low air humidity ends up being poorly tolerated by children with atopic dermatitis. This fact was demonstrated at the study by Xu et al. (2019) which shows that the disease severity is significantly related to the children's life quality, and this information is reported by the study patients and caregivers.

In the past, there were only a few studies related to neurological consequences caused by atopic dermatitis and hyperactivity and attention deficit disorder were the first to be reported in children with atopic dermatitis (Zanandréa et al. 2020). This fact corroborates the study by Yaghmaie et al. (2013), who showed that a child with atopic dermatitis has a higher probability of developing attention deficit disorder, behavior problems, hyperactivity,



depression and anxiety than children without atopic dermatitis. The behavior changes increase and the children's life quality decrease causes, mostly, sleepiness loss, which is quite common in children with atopic dermatitis (Delgado et al. 2017). Thus, children with atopic dermatitis tends to be tired and irritated during daytime periods due to the lack of sleep or sleepiness loss because of symptoms like intense itching and others (Santos et al. 2021).

The study by Xu et al. (2019) shows that the caregiver's mental and physical health is directly affected by their child's health, considering that a poor life quality on children with atopic dermatitis can lead to physical and mental consequences at their caregivers.

Therefore, considering atopic dermatitis as a prevalent disease that ends up having negative life quality impacts on pediatric patients and caregivers, it's essential to provide simple and clear information to reduce the negative life quality impact on the family (Pires et al. 2017), because of the knowledge lack, caregivers' anxiety ends up increasing and the child's own adherence to treatment decreases, interrupting a essential aspect for therapeutic success (Silva et al. 2020).

## 5 CONCLUSIONS

The atopic dermatitis negatively interferes with the daily life of pediatric patients and their caregivers. The discomfort caused by the itchy eczema leads to sleepiness loss and affects the children's development at school, social and familiar areas plus financial costs and impairment of the family dynamics. The worst of this disease is related to the lowest life quality index.

With careful follow-up, a multidisciplinary team and a better understanding of atopic dermatitis' impact, the routine handling and therapeutic strategies would decrease the caregivers' anxiety and increase the children's treatment access.

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