

Anxiety and Atopic Dermatitis: Current Evidence on Adolescent Risk

Author: Pranika Senthil (Email: pranikasenthil09@gmail.com)

Mentor: Chloe Z. Wu (Email: chloe.z1.wu@gmail.com)

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Abstract

Atopic dermatitis (AD) is a chronic skin condition with moderate to severe physical symptoms that greatly affect daily life, making it particularly impactful on mental health and social relationships during adolescence, a key formative period. This integrative review compiles current evidence and literature on the association between anxiety disorders and AD in adolescents by examining recent studies addressing the physiological, psychosocial, and daily impacts of AD in young adults and teenagers. The purpose of this study is to synthesize existing research, by analyzing various cross-sectional studies, dermatologic and psychiatric surveys, and literature reviews, to answer how living with atopic dermatitis (AD) may increase the risk of developing anxiety disorders in young adolescents (13-17 years old). Findings indicate that visible symptoms, sleep disturbances, and social isolation contribute to internalized stress and anxious behaviors. Additionally, physiologic factors, including chronic inflammation and hormone dysregulation, may further exacerbate development of anxiety disorders. Early interventions addressing both dermatologic and psychiatric needs of adolescent patients are crucial and should be made mandatory in future prevention methods.

Keywords: Atopic dermatitis (AD), adolescents, anxiety disorder, chronic skin conditions, inflammatory skin conditions, mental health, psychosocial impact, Quality of Life (QoL), self-esteem, stress.

1. Introduction

Atopic dermatitis (AD) is a chronic inflammatory skin condition characterized by persistent dry, inflamed rashes/skin lesions affecting one or multiple areas of the body—such as

skin folds, face, neck, arms, and legs—as well as by intense itching and lichenification. AD most commonly begins in infancy and early childhood but can also develop later in life, impacting approximately 10% to 30% of children and 2% to 10% of adults in developed countries (Ferrer-Bruker & Kolb, 2023). While the exact cause of atopic dermatitis is not fully understood, the condition involves an overactive immune response that is aggravated by a combination of triggers including genetic predisposition (e.g., family history, gene mutation [FLG]), environmental factors (e.g., weather, chemical/fabric irritants, allergens), and psychological factors (e.g., stress, sleep disturbances, emotional distress).

AD is often defined by its physical characteristics, however, the psychosocial impact—especially among teenagers and adolescents—is increasingly being recognized. Adolescence is a period marked by heightened emotional sensitivity and social self-awareness; therefore, the visibility and chronicity of AD, combined with the physical discomfort and social restrictions it brings can significantly decrease one's quality of life (QoL). Such teens—who are still navigating their personal identity and self-image in society—face various obstacles beyond those of their physical symptoms, including issues with personality, trust, and self-esteem.

Emerging studies have shown that the physical and social discomfort associated with AD contributes to an increase of social anxiety and other anxiety symptoms. Yet, despite the increasing awareness of the psychosocial impact of AD, there is limited research that has examined the relationship of AD and anxiety disorders in adolescents. The purpose of this study is to support the advancement of effective psychological interventions for adolescents by synthesizing existing literature on the relationship of atopic dermatitis and anxiety disorders in adolescents (aged 13 to 17). By using these findings to determine if having AD in adolescence

leads to an increased risk of developing one or more anxiety disorders, demographics in need are identified, and approaches to treatment can be tailored.

2. Methodology

In this integrative review, we wanted to compile current knowledge on the prevalence of anxiety-disorders among adolescents with AD and to examine possible underlying factors that may account for this relationship, based on findings from previous studies on this topic. Accordingly, data was analyzed from studies found in the ScienceDirect and PubMed databases through a structured search that was performed in July 2025 to identify English-language peer-reviewed articles between years 2010–2025. To ensure age-relevance, studies were filtered using age parameters relative to children (i.e., birth–18 years) and adolescents (i.e., 13–17 years). Search terms included combinations of the keywords “atopic dermatitis”/“eczema”, “anxiety”/“mental health”, and “adolescent”. Additionally, all selected articles and related references were manually reviewed to assess population characteristics and relevance to the research question. To maintain the adolescent-specific scope of this review, studies that focused exclusively on children and pediatric populations with little to no adolescent data were excluded.

In total, five studies met the inclusion criteria. The final selection comprised both cross-sectional studies and narrative reviews investigating the relationship between AD and anxiety in adolescent populations. Among the included studies, Slattery et al. (2011) conducted quantitative data in their quantitative, observational cross-sectional study which examined anxiety, depression, and dermatologic QoL among adolescents aged 13–17 with AD; Muzzolon et al. (2022) contributed a sibling-controlled quantitative, observational, cross-sectional,

prospective study from September 2016 to June 2018 that compared children and adolescents with AD to their healthy siblings; Lugović-Mihić et al. (2025) authored a narrative review that addressed how the psychosocial obstacles that adolescents with atopic dermatitis faced impacted social skill development and self-image, heightening vulnerability for anxiety disorders; while Yang & Kourush (2017) and Vivar & Kruse (2018) also published narrative reviews emphasizing how AD causes several limitations in adolescents lives, severely impacting their QoL.

3. Results

3.1 Prevalence of Anxiety

Slattery et al. (2011) in their quantitative, observational cross-sectional study titled *Depression, Anxiety, and Dermatologic Quality of Life in Adolescents with Atopic Dermatitis*, examines a sample size of 36 adolescents aged 13–17 (15 males and 21 females) with clinically diagnosed AD. Participants were recruited through physician referrals and flyers, and later went through a screening process for eligibility, which measured factors such as treatments, socioeconomic status, and medical history. Participants were then assessed on dermatologic QoL using the Children's Dermatology Life Quality Index (CDLQI) and on diagnoses of anxiety using the Schedule for Affective Disorders and Schizophrenia – Present and Lifetime version (K-SADS-PL). Analysis of data revealed a high prevalence of anxiety disorders within participants, with social anxiety being the most common subtype (14%), and 31% of participants meeting criteria for any anxiety disorder at some point in their lifetime. Other anxiety types, including generalized anxiety disorder and separation anxiety disorder, were observed as well, although less frequently (see Table 1 below).

Table 1

Rates of Current and Lifetime Anxiety Disorders Diagnosed in Adolescents with Atopic Dermatitis (n=36)

Disorder	Current diagnosis	Lifetime diagnosis
Any anxiety disorder	26% (9)	31% (11)
Separation anxiety disorder	0	9% (3)
Specific phobia	11% (4)	11% (4)
Social phobia	14% (5)	14% (5)
Agoraphobia	0	0
Generalized anxiety disorder	3% (1)	3% (1)

Note. Adapted from Slattery et al. (2011), *Journal of Allergy and Clinical Immunology*.

Similarly, a sibling-controlled quantitative, observational, cross-sectional, prospective study by Muzzolon et al. (2022), titled *Mental Disorders and Atopic Dermatitis in Children and Adolescents*, compared a sample of 100 children and adolescents aged 6–14 (45 male and 55 female) with clinically diagnosed atopic dermatitis to their healthy siblings (n=50) aged 6–18 (30 male and 20 female) from September 2016 to June 2018. The risk for mental disorders was determined using the Child Behavior Checklist (CBCL), composed of 113 questions classified into “Anxiety/Depression,” “Isolation,” “Somatic Complaints,” “Rule-Breaking Behavior,” “Aggressive Behavior,” “Social Problems,” “Thought Problems,” and “Attention Problems.” When comparing the two groups, it was found that there was a higher frequency for anxiety/depression disorders in the atopic dermatitis group (ADG) (25%) as compared to their healthy siblings (HSG) (9%). Likewise, behaviors such as isolation and social problems were observed twice as frequently in the ADG as compared to the HSG (see Table 2 below).

Table 2

Frequency of syndromes classified as clinical according to the Child Behaviour Checklist (CBCL) in the Atopic Dermatitis Group (ADG) (n=100) and the Healthy Siblings Group (HSG) (n=50)

Syndromes in CBCL	ADG n (%)	HSG n (%)	P-value
Emotional Reactivity	6 (14.0)	1 (6.3)	0.66
Anxiety/Depression	25 (25.0)	9 (18.0)	0.60
Isolation	16 (16.0)	5 (10.0)	0.60
Somatic Complaints	16 (16.0)	2 (4.0)	0.03
Sleep Problems	26 (60.5)	2 (12.5)	< 0.01
Attention Problems	20 (20.0)	5 (10.0)	0.29
Aggressive Behaviour	20 (20.0)	10 (20.0)	0.62
Social Problems	18 (31.6)	6 (17.6)	0.19
Thought Problems	28 (49.1)	7 (20.6)	0.01
Rule-Breaking Behavior	11 (19.3)	9 (26.5)	0.44

Note. Adapted from Muzzolon et al. (2022), *PubMed Central*.

3.2 Psychosocial Factors Contributing to Anxiety

Lugović-Mihić et al. (2025) through *Mental Health, Psychological Features and Psychiatric Comorbidity of Adolescents with Atopic Dermatitis: A Review*, found a high prevalence of psychiatric comorbidities in adolescents with AD, many frequently showing symptoms of anxiety, chronic stress, sleep disturbances, behavioral problems, internalizing tendencies, and even suicidality in their narrative review. As AD is a chronic condition, adolescents must learn to cope with it throughout this important developmental period. However, Lugović-Mihić et al. (2025) also note that “during this phase, autonomy, personality, self-esteem, trust, intellectual abilities and learning capacities develop, which is very important for patients

who suffer from AD, because AD can affect self-esteem and other related psychological features” (para. 4).

3.3 Impact on Quality of Life (QoL)

A narrative review by Yang & Kourush (2017), titled *Inflammatory Skin Disorders and Self-Esteem*, emphasized how the physical symptoms of inflammatory skin conditions like atopic dermatitis are only one aspect of the condition because social and psychological factors play just as big of a role (para. 19). One survey showed that patients with AD believe their condition impacts the quality of their academic success (Yang & Kourush, 2017, as cited in von Kobyletzki et al., 2017). It was also found that in a study of 336 university students in California with skin diseases, 55 of which had a history of eczema, 21.8% reported being bullied or teased, 29.1% reported being stared at by others, 21.8% had difficulty finding a romantic partner, and 25.5% reported that their eczema affected their social life (Yang & Kourush, 2017, as cited in Roosta et al., 2010).

Similarly, *The Impact of Pediatric Skin Disease on Self-Esteem*, a narrative review by Vivar & Kruse (2018), addressed how pediatric dermatologic disorders—such as atopic dermatitis—manifest into one’s daily life. Vivar & Kruse noted how AD consistently affects older children and teenagers’ QoL, especially for those in whom AD persists and does not clear even after puberty. Adolescents with severe AD often face several limitations in their ability to participate in and enjoy everyday activities, such as sports and outdoor excursions, that their unaffected peers can enjoy without fear of being exposed to environmental triggers (Vivar & Kruse, 2018, as cited in Pallet et al., 2002). Older children also reportedly miss more classes, less frequently participate in social events, and have fewer friends than those without AD (Vivar &

Kruse, 2018, as cited in Brenninkmeijer et al., 2009), further contributing to social exclusion and isolation.

4. Discussion

4.1 *Prevalence of Anxiety*

The increased prevalence of anxiety observed in both Slattery et al. and Muzzolon et al. emphasizes mental health as an integral component of atopic dermatitis in adolescents. Both studies show significantly higher rates of anxiety disorders in adolescents with AD as compared to healthy peers and the general population; Slattery et al. reported that 26% of participants met the diagnostic criteria for an anxiety disorder, while similarly, Muzzolon et al. reported 25% of participants showing signs of anxiety on CBCL. However, while Slattery et al. compared anxiety levels of adolescents to the general population, Muzzolen et al.'s sibling-controlled design allowed for the control of shared genetic and environmental factors, observing that anxiety/depression rates were almost triple the amount in the ADG than in their healthy siblings. This methodological difference strengthens the argument of nature v. nurture, that the elevated levels of anxiety disorders observed in adolescents with AD are not purely due to shared family and environmental factors, but due to the physical and mental difficulties that come with AD.

Despite social stigma, the heightened prevalence of anxiety among adolescents with AD may also be explained by the condition's physiological mechanisms and impacts. Individuals with AD face chronic itching and discomfort, naturally becoming a constant stressor. Flare-ups and uncontrollable nighttime itching can also lead to poor sleep quality and disturbances (Muzzolon et al., 2022), which is strongly linked to development of anxiety and mood disorders.

Moreover, systemic type 2 inflammation—the major immune response behind atopic dermatitis flare-ups—leads to the over-production of cortisol, altering stress hormone regulation and further affecting brain regions linked to emotional regulation, stress, and anxiety (Beck et al., 2022).

4.2 Psychosocial Factors Contributing to Anxiety

Adolescence is an extremely vulnerable period due to various cognitive, physical, and psychosocial changes, heightening emotional instability and impulsivity. For those with chronic illness—such as atopic dermatitis—the vulnerability is greater due to added physical discomfort, social challenges, and increased psychological stress (Nightingale and Fischhoff, 2001). As emphasized by Lugović-Mihić et al. (2025), chronic AD can interrupt healthy social skill development around friends and peers, and combined with the visibility of rashes and lesions, it can bring upon feelings such as embarrassment and social withdrawal/isolation—which are well-known precursors to anxiety. Increased feelings of social comparison and stigmatization can also deeply affect self-esteem and identity formation, making one more susceptible to negative self-perceptions and image in a period already marked by increased sensitivity to social standards and judgement. Such self-consciousness can lead to social anxiety and avoidance behaviors, as well as internalized stress and worries, priming general anxiety behaviors and thoughts. The unpredictability of flare-ups also contributes to a constant background of fear and anticipatory stress, feeding into the development of anxiety in both syndromal and subsyndromal forms.

4.3 Impact on Quality of Life (QoL)

Findings from Yang & Kourush (2017) and Vivar & Kruse (2018) draw attention to how atopic dermatitis affects teenagers' quality of life beyond the physical symptoms, highlighting the societal aspects. As studied by Vivar & Kruse (2018), social isolation and exclusion that comes with AD limits opportunities for adolescents to engage in and develop relationships and social connection. Not being able to participate in everyday activities like sports from a young age can increase self-consciousness, cultivating feelings of being less "normal" or less capable than peers and deeply affecting self-esteem.

Such social withdrawal also impedes adolescents' abilities to form and maintain connections with peers and classmates, further limiting their opportunities to develop a personal sense of belonging and acceptance within society. The loss of social connection only exacerbates feelings of loneliness and isolation, increasing vulnerability to internalized disorders such as anxiety.

4.4 Depression, Suicidal Ideation, etc.

While this review primarily aims to understand the growing relationship between atopic dermatitis in adolescents and the development of anxiety disorders, conditions and behaviors such as depression and suicidal ideation are equally significant concerns. In an observational, cross-sectional, population-based study conducted by Lee & Shin (2017), 75,435 students—with and without atopic dermatitis and/or depression—from middle schools and high schools across South Korea who were surveyed using the 2013 Korean Youth Risk Behavior Survey (KYRBS) were analyzed. Results showed that 6.8% of the sample was clinically diagnosed with AD by a doctor, and among those adolescents, individuals with AD were 27% more likely to experience

depressive feelings, 34% more likely to experience feelings of suicidal ideation, 46% more likely to engage in suicide planning behaviors, and 51% more likely to attempt suicide as compared to adolescents without clinically diagnosed AD (Lee & Shin, 2017).

The comorbid presence of depression and suicidality with anxiety may indicate a multifaceted mental health impact in individuals with AD. Shared risk factors like chronic stress, disrupted sleep, social isolation, and negative self-perceptions further contribute to comorbidity. In addition, several studies analyzed in this review also associated anxiety disorders with depression, showing that anxiety isn't isolated as it often co-occurs, or even precedes, other mood symptoms that may worsen the risk. Once more, although this review focuses on anxiety, these overlapping psychiatric symptoms highlight the need for deeper research and studies to be conducted in this population.

4.5 Limitations

This integrative review is, however, subject to several potential limitations that should be taken into account when interpreting its results. Firstly, due to the lack of research conducted on specifically anxiety disorders and atopic dermatitis in adolescents, no longitudinal studies were considered into the making of this review, making it difficult to identify potential causal links between anxiety disorders and AD. Due to the minimal amount of research performed on this population, studies that did address anxiety and AD frequently examined anxiety with depression, rather than as distinct outcomes, reducing clarity regarding anxiety disorders' individual association with AD. However, studies that did collect data on anxiety and AD relied heavily on self-reported surveys, making results subject to potential response bias and

exaggeration. Furthermore, there remains equally limited research focusing exclusively on anxiety in adolescents with AD, contributing to inconsistencies in age ranges across studies.

5. Conclusion

Overall, findings indicate that adolescents with atopic dermatitis experience significant psychological challenges, increasing susceptibility to anxiety disorders. Adolescence is an extremely vulnerable stage due to the varied neurobiological, social, and identity-related transitions, which may escalate the psychological burden of AD. The interaction of visible AD symptoms with increased social sensitivity and stigma can exacerbate feelings of scrutiny and self-consciousness, leading to social isolation and withdrawal—strong risk factors for anxiety. Moreover, the ongoing maturation of brain regions responsible for emotional regulation, combined with sleep disturbances and chronic stress caused by AD, increases difficulty of developing healthy coping mechanisms for such negative feelings, further priming anxiety behaviors and thoughts. In addition, AD-induced inflammation and dysregulated cortisol production interfere with mood regulation, thereby facilitating anxious thoughts and distress. These intersecting factors elucidate the complex relationship between physiological and psychosocial factors in adolescent AD, highlighting the necessity for further research to better understand their role in anxiety development.

In future studies, longitudinal studies with large sample sizes, studying anxiety specifically, will be necessary to further explore long-term mental health trajectories. Additionally, current interventions over-prioritize symptom management while overlooking the psychological burden; holistic treatment options that focus on both dermatologic and psychiatric

patient-centered care should be adopted to better support the challenges faced by adolescents with atopic dermatitis.

References

Beck, L. A., Cork, M. J., Amagai, M., De Benedetto, A., Kabashima, K., Hamilton, J. D., & Rossi, A. B. (2022). Type 2 Inflammation Contributes to Skin Barrier Dysfunction in Atopic Dermatitis. *JID Innovations: Skin Science from Molecules to Population Health*, 2(5), 100131. <https://doi.org/10.1016/j.xjidi.2022.100131>

This narrative review addresses the type of inflammation that affects the skin barrier in atopic dermatitis flare-ups, emphasizing byproducts and cortisol overproduction resulting from type 2 systemic inflammation. This review's publication in a highly reputable academic journal, combined with the expertise of the authors in the field, enhances the validity of its findings. This source was utilized to provide evidence of the physiologic factors of atopic dermatitis that may contribute to the development of anxiety disorders.

Kolb, L., & Ferrer-Bruker, S. J. (2023). Atopic Dermatitis. PubMed; StatPearls Publishing.

<https://www.ncbi.nlm.nih.gov/books/NBK448071/>

This StatPearls chapter on atopic dermatitis provides a complete overview of the condition, including epidemiology, physiology, and treatment of AD. This article is published on the well-known *NCBI Bookshelf* and is written and peer-reviewed by medical experts. This article was used to gather statistics to highlight the prevalence of AD in children and adults in developed countries. It was also used to clarify common physical symptoms and characteristics of AD.

Lee, S., & Shin, A. (2017). Association of atopic dermatitis with depressive symptoms and suicidal behaviors among adolescents in Korea: the 2013 Korean Youth Risk Behavior Survey. *BMC Psychiatry*, 17(1). <https://doi.org/10.1186/s12888-016-1160-7>

In this cross-sectional study, Lee & Shin (2017) analyze a large sample from a nationwide adolescent population survey to assess the relationship between adolescent atopic dermatitis and depression symptoms. The authors' strong methodology and sample size, as well the study's publication in the reputable journal *BMC Psychiatry* strengthens the reliability of the findings. This research helps add perspective on the broad mental health impact of AD, considering how anxiety only represents a small portion of the associated psychological burden.

Lugović-Mihić, L., Bukal, D., Dolački, L., Zanze, L., Barac, E., Tomašević, R., & Vilibić, M. (2025). Mental Health, Psychological Features and Psychiatric Comorbidity of Adolescents with Atopic Dermatitis: A Review. *Pediatric Reports*, 17(2), 50.

<https://doi.org/10.3390/pediatric17020050>

Lugović-Mihić et al. (2025) in their narrative review analyze how atopic dermatitis can affect the social life of adolescents, further impacting their mental health and risk of developing anxiety disorders. Backed by peer-review, this review is written by experts in the field of dermatology and psychiatry, supporting the source's reliability. The findings of this review were used to strengthen arguments stating why AD has a stronger impact on adolescents' mental health.

Muzzolon, M., Baggio Muzzolon, S. R., Lima, M., Canato, M., & Oliveira Carvalho, V. (2021).

Mental disorders and atopic dermatitis in children and adolescents. *Advances in Dermatology and Allergology*, 38(6), 1099–1104.

<https://doi.org/10.5114/ada.2021.112280>

Muzzolon et al. (2021) investigates how atopic dermatitis impacts the mental health of children and adolescents as compared to their healthy siblings through their

cross-sectional study. Its publication under *Advances in Dermatology and Allergology*, a well-established journal, and being peer-reviewed and indexed in several scholarly databases like PubMed, contributes to the credibility of this study. The findings of this study were used to emphasize the nature vs. nurture aspect of this topic, controlling for environmental and genetic factors of AD.

Slattery, M. J., Essex, M. J., Paletz, E. M., Vanness, E. R., Infante, M., Rogers, G. M., & Gern, J. E. (2011). Depression, anxiety, and dermatologic quality of life in adolescents with atopic dermatitis. *Journal of Allergy and Clinical Immunology*, 128(3), 668-671.e3.

<https://doi.org/10.1016/j.jaci.2011.05.003>

This cross-sectional study by Slattery et al. (2011) examines various anxiety levels of adolescents with atopic dermatitis to assess psychological quality of life impacts of the condition. This source's frequent citations in related studies, and publication in the reputable *Journal of Allergy and Clinical Immunology*, establishes its reliability. Results observed in this study provided important statistics to further strengthen the claim of this review.

Vivar, K. L., & Kruse, L. (2018). The impact of pediatric skin disease on self-esteem. *International Journal of Women's Dermatology*, 4(1), 27–31.

<https://doi.org/10.1016/j.ijwd.2017.11.002>

This narrative review by Vivar and Kruse (2018) synthesizes existing evidence on the role of various psychosocial factors in the quality of life of adolescent patients with atopic dermatitis. Being a narrative review authored by experts in this field, as well as its publication in peer-review journals and accessibility through ScienceDirect, this work's findings are extremely reliable. The study's findings were used to support arguments

related to psychosocial development risks in adolescents with AD, that may further exacerbate the risk of developing anxiety disorders.

Yang, C. Y., & Kourosh, A. S. (2017). Inflammatory skin disorders and self-esteem. *International Journal of Women's Dermatology*, 4(1), 23–26.

<https://doi.org/10.1016/j.ijwd.2017.09.006>

Yang & Kourush (2017) highlight how skin conditions such as atopic dermatitis affect self-esteem and social behaviors through their narrative review. The study's publication in the *International Journal of Women's Dermatology*, a peer-reviewed journal, and its authors being recognized experts in this field, as well as their synthesis of well-known literature in this topic, further validates this source's claims. Statistics and references to several other studies strengthened the foundation of our review's argument that AD affects adolescents' quality of life and psychological well-being, increasing susceptibility to anxiety disorders.