



## Adverse Childhood Experiences and Anxiety: A Systematic Review

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### ABSTRACT

Anxiety is a common mental health disorder that can affect various aspects of an individual's life, including social, academic, and professional functioning. This systematic review aims to analyze 14 international articles on the relationship between Adverse Childhood Experiences (ACEs) and mental health development, particularly anxiety, across various age groups. ACEs encompass traumatic experiences encountered by children before the age of 18 regarding household dysfunction and childhood abuse/neglect. The results of the systematic review show that the aspects of ACEs are quite diverse; the more ACEs experienced, the higher the reported levels of anxiety. These findings emphasize the importance of early interventions to mitigate the negative effects of ACEs on future mental health.

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## **INTRODUCTION**

Anxiety is a common type of mental disorder that can affect various aspects of an individual's life, including social, academic, and professional functioning (Nowak et al., 2023). According to the World Health Organization report (2023), approximately 301 million people worldwide experienced anxiety disorders that year, with a higher prevalence in females compared to males.

This condition is often characterized by excessive worries about situations or events that have not yet occurred. Nevid et al. (2005) define anxiety as a state of apprehension or worry that serves as a signal that an individual senses a threat or danger. Anxiety itself is marked by various psychological and physical symptoms, such as feelings of restlessness, tension, or excessive fear. Physiologically, anxiety can trigger bodily responses such as rapid heartbeat, excessive sweating, and muscle tension (Kang et al., 2021).

In several countries, the prevalence of anxiety is quite high. In the United States, for example, statistical reports indicate that about 31% of the adult population experiences anxiety disorders at least once in their lifetime (Lawrence et al., 2019). If not managed well, anxiety can worsen, affecting an individual's quality of life in the long term.

Anxiety serves as the body's response to stress, which can be beneficial in certain conditions. However, if it persists without a clear trigger, anxiety can develop into a serious mental disorder. Studies show that individuals with chronic anxiety are at higher risk of experiencing various physical health disorders, such as cardiovascular diseases, hypertension, digestive disorders, and cognitive decline due to excessive activation of the sympathetic nervous system (Lee et al., 2020). Additionally, the psychosocial impact of anxiety is also significant, including social isolation, decreased work or academic productivity, and increased risk of depression and substance abuse (Elmore & Crouch, 2020).

Anxiety is influenced by various biological, psychological, and environmental factors. Biologically, genetic factors play a role in increasing the risk of anxiety, especially in individuals with a family history of similar disorders. Moreover, imbalances in neurotransmitters like serotonin and gamma-aminobutyric acid (GABA) also contribute to increasing an individual's likelihood of experiencing anxiety (Farhane-Medina et al., 2022). From a psychological perspective, negative thought patterns, low resilience levels, and ineffective coping strategies can worsen anxiety conditions (Kwak et al., 2022). Individuals who tend to think pessimistically or struggle to manage stress are more vulnerable to anxiety, especially when faced with stressful situations.

In recent decades, research has identified various risk factors contributing to the emergence of anxiety, one of which is childhood traumatic experiences or Adverse Childhood Experiences (ACEs). ACEs encompass multiple forms of trauma, such as physical violence, emotional abuse, neglect, or living in a family environment with conflict (Shi et al., 2020). Research by Kim et al. (2017) indicates that individuals with a history of ACEs tend to experience higher levels of anxiety compared to those who have not experienced ACEs.

ACEs can have long-term impacts on mental health. Adolescents who experience ACEs tend to develop negative perceptions of the world around them,

viewing their environment as dangerous and untrustworthy. This mindset can lead children to exhibit avoidance behaviors and create maladaptive stress-coping mechanisms in adulthood (Sheffler et al., 2020). Furthermore, ACEs can negatively affect an individual's physical and mental health into adulthood, such as decreased resistance, emotional regulation disorders, increased depressive symptoms, and higher risks of health-risk behaviors (Soni, 2024).

## LITERATURE REVIEW

The impact of ACEs on adolescent mental health is particularly significant because childhood trauma can influence an individual's psychological and emotional development. Adolescents who have experienced ACEs are at a higher risk of developing mental disorders such as depression, anxiety, and behavioral disorders later in life (Pilkington et al., 2021). This has the potential to diminish their quality of life. Depression in adolescents can disrupt social and academic functioning and even increase the risk of suicide. Additionally, untreated anxiety can worsen mental health conditions and lead to issues with self-confidence, adaptability, and social relationships.

This is also supported by research conducted by Samji et al. (2024) which indicates that adolescents with a history of one or more ACEs report more severe symptoms of anxiety and depression, lower levels of mental well-being, as well as decreased life satisfaction compared to those without a history of ACEs.

This Systematic Review analyzes the relationship between Adverse Childhood Experiences (ACEs) and anxiety. This study also provides insights into the groups of individuals most vulnerable to the effects of ACEs. In addition, a better understanding of this relationship can contribute to the development of more effective prevention and intervention programs for individuals who have experienced ACEs, thereby reducing future anxiety risks.

## METHODOLOGY

This study employs a systematic literature review method to analyze various literature based on specific criteria (Creswell & Creswell, 2018). The literature review method began with systematic planning, where the author formulated the research question using the SPIDER framework (Sample, Phenomenon of Interest, Design, Evaluation, Research Type). The question posed in this review is how Adverse Childhood Experiences (ACEs) can affect the level and risk of anxiety. Subsequently, the author determines search terms and designs appropriate search protocols.

During the literature search phase, the author identifies relevant search terms. The terms used for the search include ACEs, adverse childhood experiences, and anxiety. Searches were conducted in academic databases such as Scopus and Publish or Perish, which are widely recognized in health and psychology research. In the subsequent phase, after obtaining 1,174 articles, the author uses Rayyan to check for duplicates and filter articles based on titles and abstracts. This process results in 14 relevant journals discussing the relationship between ACEs and anxiety, which are further analyzed based on their full versions.

In the literature analysis, the author applies a systematic method to organize information from various sources. Each selected article is summarized highlighting the main findings and methodologies used, as well as how the results contribute to the understanding of the relationship between ACEs and anxiety. The author also synthesizes by grouping similar results and comparing findings from various studies to identify patterns and gaps in the existing literature.

A flowchart of the journal selection can be seen in Figure 1. The author defines literature selection criteria to ensure the relevance and quality of the articles included in the review, namely: (1) journals discussing the direct relationship between ACEs and anxiety, (2) both quantitative and qualitative research types, (3) articles published in English, (4) research published between 2020 and 2024. Journals not included in the criteria are: (1) journals that do not discuss anxiety, focus on specific anxieties, or involve mediator and moderator variables, (2) articles that are literature reviews, meta-analyses, reports, or books and research whose methodologies are not clearly described, (3) articles published in languages other than English, (4) research published before 2020.

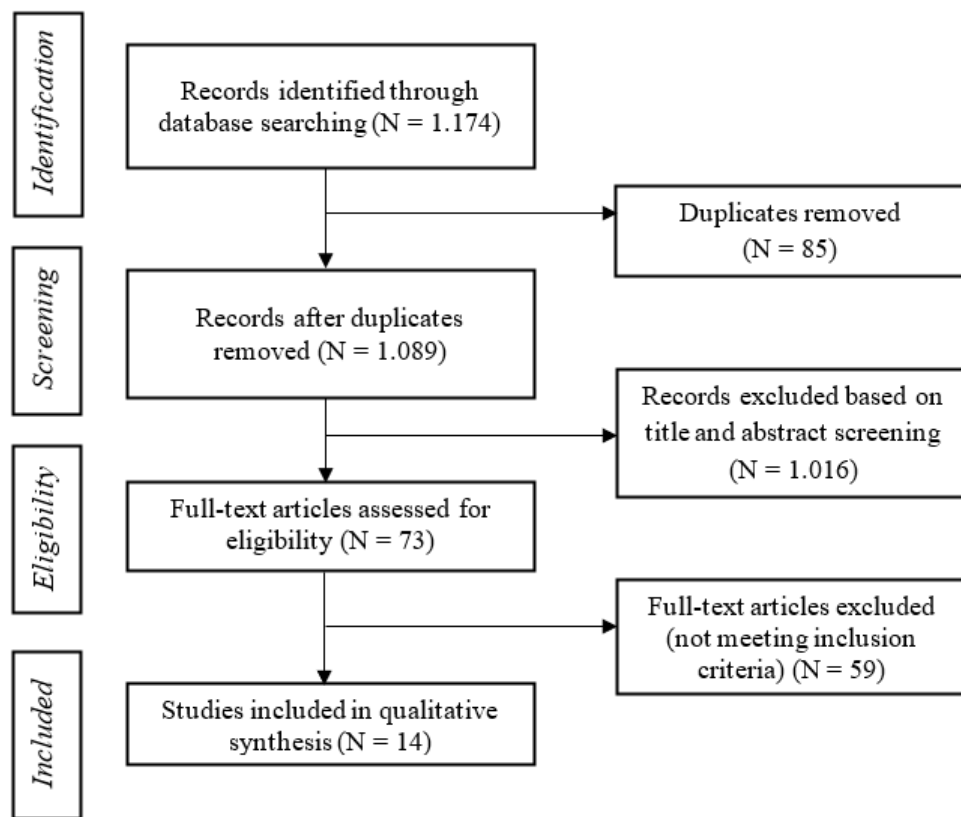


Figure 1. PRISMA Flow Diagram for Journal Selection Process

## RESULT AND DISCUSSION

Anxiety is a blend of feelings of fear and concern about the future without a specific reason. Anxiety can manifest as mild chronic fear, overwhelming worry, or learned avoidance responses (Chaplin, 2008). Freud explains that

anxiety is an unpleasant feeling accompanied by physical sensations as a warning of impending danger. This feeling often feels vague and difficult to define. Furthermore, anxiety is viewed as an ego mechanism responding to threats (Feist et al., 2017).

Adverse Childhood Experiences (ACEs) refer to traumatic experiences encountered before age 18. ACEs encompass various forms of trauma such as physical or sexual violence, emotional or physical neglect, witnessing domestic violence, parental separation, or substance abuse by parents (O'Neill et al., 2023). According to reports from the Centers for Disease Control and Prevention (CDC), more than 60% of adults report having experienced at least one ACE, and nearly 1 in 6 have experienced four or more ACEs (Merrick et al., 2019). ACEs have been shown to contribute to mental health disorders such as anxiety throughout the life cycle (Dhondt et al., 2019; McLaughlin et al., 2017). ACEs are stress-inducing events in childhood and impact mental and physical health later in life, whether in adolescence, adulthood, or old age.

The relationship between ACEs and anxiety is very complex. Children who experience ACEs, physical, emotional, or sexual violence, as well as neglect and instability in the family, tend to have higher levels of anxiety than those who do not experience them (Berent & Wojnar, 2024; Samji et al., 2024; Soni, 2024). These adverse experiences can create a view that the environment and people around them are dangerous and untrustworthy. This perspective can trigger avoidance behaviors and create maladaptive stress coping in adulthood (Sheffler et al., 2020). In this systematic review, several types of ACEs trigger anxiety across different age groups. In this section, every statistical test you conducted must be explained thoroughly. This part is very critical to elaborate on the employed stated research methodology. Every statistical finding must be summarized and presented in tables or graphs; instead of a mere copy-paste from your statistical tools.

Table 1. List of Adverse Childhood Experiences that Affect Anxiety

No .	Author	Subject	Aspect ACES	Instrument	Result
1	Elmore & Crouch (2020)	Children and adolescents aged 8 to 17 years.	Parental separation/ divorce, household dysfunction, exposure to violence and economic hardship	National Survey of Children's Health (NSCH)	Children with 4 or more ACEs are more likely to experience anxiety.
2	Lee et al. (2020)	11,437 adolescents .	Income hardship, divorce, death, jail, domestic violence,	National Survey of Children's Health (NSCH)	Adolescents exposed to multiple ACEs, especially in the Multiple

			neighborhood violence, mental health, drug and discrimination		High-Risk class, are more likely to experience anxiety problems.
3	Damian et al. (2021)	Millennials, Generation X, and Baby Boomers (total n = 4,392).	Childhood abuse/neglect and household dysfunction.	Patient Health Questionnaire -9 (PHQ-9)	Over 30% of adult mental health challenges, including anxiety, are attributable to adverse childhood experiences.
4	I. Kim et al. (2021)	Adolescents aged 12 to 17 years.	Income hardship, neighborhood violence, living with a mentally ill family member, and racial discrimination	National Survey of Children's Health (NSCH)	Each one-unit increase in cumulative ACE score increases the odds of being in the anxiety group by 1.25 times.
5	Lim et al. (2021)	Children and adolescents aged 8–19 years.	General, physical, emotional, and sexual adversities	Screen for Child Anxiety Related Disorders (SCARED)	There is an association between anxiety symptoms and childhood adversities, especially in the non-ADHD group; not significant in the ADHD group.
6	Hedrick et al. (2021)	409 college students.	physical, emotional, and sexual abuse; neglect; and	DASS-21 (Depression, Anxiety, and Stress Scales)	High ACE scores ( $\geq 4$ ) are associated with higher anxiety levels.

			family dysfunction		
7	Whitaker et al. (2021)	5,834 adults.	Emotional abuse, physical abuse, sexual abuse, household alcohol or substance abuse, and parental divorce or separation	Composite International Diagnostic Interview Short Form (CIDI-SF)	Exposure to 3 to 5 ACE categories is associated with increased prevalence of anxiety disorders.
8	Ikram et al. (2022)	889 mothers in Pakistan.	Neglect, family psychological distress, domestic violence, and community violence	Generalized Anxiety Disorder-7 scale (GAD)	Higher total ACE scores are associated with increased anxiety symptoms.
9	Davies et al. (2022)	858 young adults.	Emotional abuse, physical abuse, sexual abuse, neglect, parental mental illness, incarceration of a household member, substance abuse in the household, domestic violence and discrimination	Generalized Anxiety Disorder 7-item scale (GAD-7)	Students with greater ACE exposure tend to report higher levels of anxiety.
10	Wong et al. (2024)	Adolescents aged 12-18 years.	Abuse, neglect, household dysfunction,	General Anxiety Disorder-7 (GAD-7).	High ACE scores ( $\geq 4$ ) are significantly

			bullying, domestic violence, community violence, food insecurity and housing insecurity		associated with depression and anxiety.
11	Sahle et al. (2024)	3,089 children under 18 years.	Bullying and Parental Psychological Distress	Children's Anxiety Scale (CAS-8)	About 47% of anxiety symptoms at age 16-17 are attributable to bullying, and approximately 17% to parental psychological distress experienced between ages 4-15.
12	Lian et al. (2024)	2,551 older adults.	Parental dysfunction, parental mental illness, household alcohol or substance abuse, witnessing household abuse, household conflict, poverty, and parental divorce	Goldberg Anxiety Scale (GAS)	The mean anxiety score among the high-ACEs group was 6.8 (out of 9), compared to 2.1 in the low-ACEs group.
13	Matthews et al. (2024)	Children and adolescents	abuse, financial stress, and household dysfunction	A single question addressed to parents or caregivers	Children exposed to one, two, or three ACE factors had higher anxiety than those



					with no ACE exposure.
14	Wang et al. (2024)	Young adults (n = 10,811), middle-aged adults (n = 14,072), and older adults (n = 5,171).	Emotional abuse, physical abuse, sexual abuse, material over flow, mental illness, violent treatment of mother or stepmother component, and criminal behavior in the family.	Generalized Anxiety Disorder Scale-7 (GAD-7)	Verbal abuse or humiliation by parents was the most severe early adversity contributing to adult anxiety.

Table 1. shows some aspects of Adverse Childhood Experiences that influence anxiety as seen from the 14 reviewed articles. Twelve articles used aspects of household dysfunction and childhood abuse/neglect as a reference to analyze the level of an individual's ACEs. Childhood abuse/neglect includes verbal abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Household dysfunction encompasses parental separation, witnessing domestic violence, household substance abuse, household mental illness or suicidal ideation, and household incarceration (Damian et al., 2021).

One of the most researched aspects of ACEs is Household dysfunction, including the death of one or both parents (Lee et al., 2020), parental separation or divorce (Elmore et al., 2022), and domestic violence (Davies et al., 2022; Ikram et al., 2022; Wong et al., 2024). Additionally, living with a family member who is addicted to alcohol or drugs, a family member in prison, or a family member suffering from depression or other mental health issues also triggers ACEs (Davies et al., 2022; I. Kim et al., 2021; Lee et al., 2020; Whitaker et al., 2021). Children raised in dysfunctional family environments often lack attention, affection, and support, which can disrupt their emotional development (Lian et al., 2024).

Elmore & Crouch (2020) and Lim et al. (2021) found that children experiencing four or more ACEs had a higher risk of anxiety. Lee et al. (2020) also highlighted that diverse ACE experiences, especially those involving family environments, increase the likelihood of anxiety disorders because they can create an unstable environment for children.

Childhood abuse/neglect can also be ACE experiences, such as physical violence, emotional violence, sexual violence, emotional neglect, and physical neglect. First, physical violence is intentionally inflicted upon children (Strathearn et al., 2020). Physical violence is reported more often by males than females (Whitaker et al., 2021). Second, emotional violence encompasses actions

that damage a child's self-esteem or emotional health (Han et al., 2023). Third, sexual violence involves any form of unwanted or forced sexual activity that can affect emotional pressure cycles and one's ability to form intimate relationships in the future (Fonseca et al., 2021). Fourth, emotional neglect occurs when a child's emotional needs are neglected, making the child feel worthless and incapable (Serasinghe, 2021). Fifth, physical neglect occurs when a child's basic needs, such as food, shelter, and medical care, are not met (Serasinghe, 2021). In some studies, physical neglect is also defined by income hardship, which is defined as difficulty in meeting basic needs such as food or shelter due to family income (I. Kim et al., 2021; Lee et al., 2020).

Another ACE aspect affecting anxiety is bullying and community violence. Bullying refers to the experiences of children who are targeted by aggressive behaviors from peers, which can include intimidation, exclusion, or physical and verbal violence (Sahle et al., 2024). Victims of bullying often feel isolated from their peers and may develop low self-esteem and a sense of helplessness, increasing the risk of anxiety (O'Hara, 2020). Individuals who grow up or live-in environments filled with violence tend to experience greater mental health issues. Exposure to violence in their surrounding environment occurring within certain communities or social groups can make children feel scared and unsafe. This can increase the risk of PTSD, anxiety, depression, and difficulties in socialization (O'Hara, 2020). Based on a review by Ikram et al. (2022), rising levels of anxiety among mothers are related to experiences of violence in the community.

The patterns of the relationship between ACEs and anxiety also vary among different age groups. Sahle et al. (2024) found that approximately 47% of anxiety symptoms in adolescents aged 16-17 could be attributed to bullying experiences, while 17% could be attributed to parental psychological distress. In the adult context, Damian et al. (2021) showed that over 30% of mental health challenges, including anxiety, could be associated with adverse childhood experiences. Research by Whitaker et al. (2021) emphasizes that exposure to three to five categories of ACEs is related to the increased prevalence of anxiety disorders among adult participants. This indicates that the impact of ACEs is not limited to childhood but continues into adulthood.

The findings from Ikram et al. (2022) indicate that higher total ACE scores are associated with increased anxiety symptoms, where each additional point in ACE scores is correlated with increased anxiety scores. This statement is supported by Davies et al. (2022), who investigated students, and Marini et al. (2024), who researched adolescents, highlighting that the more ACEs experienced, the higher the levels of trait and state anxiety reported. This suggests that the relationship between ACEs and anxiety is linear, where the more adverse experiences one encounters, the higher the level of anxiety felt. These findings are corroborated by research conducted by Moore & Stoddard (2024), revealing that increased numbers of ACEs experienced by individuals are significantly associated with increased anxiety. Statistically, increased ACE scores are significantly linked to exacerbated anxiety symptoms.

Several studies indicate differences in anxiety levels based on demographic subject characteristics. Marini et al. (2024) found significant gender differences, where adolescent females reported higher anxiety levels compared to males. Similarly, studies by Lim et al. (2021) show that the impact of ACEs on anxiety is more significant in non-ADHD groups than in those with ADHD. This difference emphasizes the importance of considering comorbid conditions when analyzing the impact of ACEs.

Overall, this analysis demonstrates that ACEs significantly impact the development of anxiety across various age groups. Cumulative exposure to ACEs, especially those involving parental separation, violence, bullying, and neglect, contributes to increased anxiety risk. This is an important issue that needs further attention. Further research is needed to understand the underlying mechanisms of this relationship and to develop effective intervention strategies. Given the long-term impacts of ACEs on mental health, health professionals and educators must collaborate in creating supportive environments for at-risk children and adolescents.

## **CONCLUSIONS AND RECOMMENDATIONS**

Anxiety can be influenced by several types of Adverse Childhood Experiences (ACEs), such as physical violence, sexual violence, emotional neglect, physical neglect, the presence of family members with alcohol or drug addiction, incarcerated family members, family members experiencing depression or other mental health issues, experiences of parental separation or loss, bullying, and community violence. ACEs impact the anxiety levels of individuals across different age groups. Traumatic experiences encountered during childhood not only affect mental health during childhood but also persist into adulthood. The more ACEs individuals experience, the more they report higher anxiety levels, which can disrupt their future lives.

Moreover, the results of this study emphasize the need for better intervention and prevention programs aimed at individuals who have experienced ACEs. Providing appropriate support can help mitigate the negative effects of ACEs and improve individuals' mental health. Better mental health policies and appropriate intervention programs are needed to support individuals affected by ACEs, enabling them to lead healthier and more productive lives.

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## **FURTHER STUDY**

This study still has limitations so that further research is still needed on the topic "Adverse Childhood Experiences and Anxiety: A Systematic Review".

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