

Predicting Adolescent Anxiety with Childhood Attachment Disruptions: A Systematic Review

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Abstract

This systematic review explored the relationship between childhood attachment disruptions and the development of anxiety during adolescence. A structured search was conducted for studies from five major databases between 2000 and July 2024, selecting studies that longitudinally examined the association of childhood attachment with later anxiety in adolescence. Four studies meeting the inclusion criteria were analyzed to show that insecure, avoidant, and disorganized attachment styles within childhood predicted the emergence of adolescent anxiety. These results pointed to the clear association of attachment disruptions in early childhood with anxiety disorders later in life and, therefore, strengthened the efforts of early intervention in supporting the development of secure attachment to prevent later mental health problems, specifically anxiety. These findings showed that preventing insecure attachment in early childhood could be one potential strategy for preventing anxiety disorders later in adolescence.

Keywords: *Childhood Attachment, Adolescent Anxiety, Attachment Disruptions, Mental Health, Insecure Attachment*

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Introduction

Theoretical Background

Initially introduced by John Bowlby, attachment theory serves as a framework for understanding human development, particularly in infancy and early childhood (Bowlby, 1969). The theory emphasises the significance of early attachment experiences in shaping childhood and adult development. Ainsworth and colleagues further developed a key aspect of this theory through their Strange Situation Procedures (SSP), where they observed how young children responded to being reunited with their mothers after a brief separation. From these observations, they identified four types of attachment behaviours (Ainsworth et al., 1978). The most common form, secure attachment, involved children using their mother as a secure base for exploration and a source of comfort during distress. However, some children exhibited anxious behaviour, either avoiding their mother upon reunion (avoidant attachment) or showing ambivalence, where they sought comfort but were not soothed (resistant attachment). In rare cases, children display disorganised behaviour, deviating from typical attachment patterns (Madigan et al., 2016). Most researchers have focused on comparing secure attachment with insecure attachment behaviours and disorganisation, and this classification is used in the current study (Groh et al., 2017).

Literature Review and Background

The link between the mother-infant relationship and a child's development throughout life has long been discussed (Waters et al., 2015). With the rise of attachment theory, a great amount of attention was accorded to the link between parent-child attachment and psychosocial development, particularly by focusing on the dual relationship against the backdrop of the parent-child relationship (Bretherton, 1992). Recently, research has expanded to measure the linkage between mental health conditions and psychosocial development that develops because of parent-child attachment (Groh et al., 2017).

Recent research has provided substantial evidence supporting the connection between early attachment patterns and later psychological outcomes. Verhage et al. (2018) conducted a comprehensive meta-analysis examining 95 studies and found moderate associations between

attachment insecurity and anxiety disorders ($r = 0.28$). Similarly, Dujardin et al. (2020) demonstrated that disorganized attachment patterns showed particularly strong predictive validity for anxiety-related symptoms in adolescence. Bosmans et al. (2021) further explored these relationships, finding that emotion regulation capabilities mediated the association between early attachment and later anxiety outcomes.

Most of the literature focused on internalising symptoms and externalising problematic behaviours in children (Fearon et al, 2014). A systematic review also conducted by Groh et al. in 2010, performed a meta-analysis of 42 relevant studies and assessed the relationship between children's attachment in childhood and internalising symptoms, including somatic complaints, anxiety, and depression. An effect size of 0.15 was recovered, pointing to a small but significant association between a parent's attachment style and a child's internalising symptoms (Groh et al., 2010). Likewise, a 0.17 effect size was revealed for children exhibiting avoidant attachment (Groh et al., 2010).

In the follow-up meta-analysis, Groh and his colleagues also included longitudinal studies to present a quantitative estimate of the effect size (Groh et al., 2017). The limitation of this study was that internalising symptoms were the broader outcome measures that included a host of early childhood mental health issues. These issues could further impact the ongoing development processes and a child's adjustment into adolescence. Moreover, it was identified that insecure attachment influenced different mental health disorders, for instance, anxiety or depression, in distinctive ways (Madigan et al., 2016).

Research Gap and Rationale

Different disorders may follow distinct developmental pathways, making it problematic to treat them as a single category. The reported small effect size may result from a concentration effect, where a greater impact of attachment on certain mental health problems is combined with lower effects on others (Fearon et al., 2014). Despite extensive research on attachment and mental health outcomes, there remains a need for systematic examination of the specific relationship between childhood attachment disruptions and adolescent anxiety disorders. Previous reviews have often combined multiple internalizing symptoms, potentially obscuring specific pathways from early attachment patterns to anxiety outcomes.

Research Objective

In light of the literature and to address the limitations, this work aims to explore how insecure, avoidant, resistant, and disorganised attachment styles in poor childhood attachment contribute to the development of some mental health conditions at the adolescent stage. This study focused on predicting anxiety in adolescents with childhood attachment issues.

Methodology

Search Strategy

A structured approach was adopted to search and review the literature. Five key databases spanning psychological and developmental fields were searched: Web of Science, SCOPUS, PubMed, CINAHL, and ERIC (McKeown & Thomas, 2017). To search relevant literature on predicting adolescent anxiety with childhood attachment disruptions, the key terms "adolescent anxiety," "childhood attachment," and "attachment disruptions" were used. Additionally, exploring concepts like "attachment theory," "parent-child relationship," and "insecure attachment" deepened the search for how early attachment experiences influence anxiety. Other useful terms included "childhood trauma and anxiety," "attachment and emotional regulation," and "developmental psychology," which highlighted the psychological processes involved. While focused on specific areas such as "risk factors for adolescent anxiety," "attachment styles and mental health," and "predictors of adolescent mental health", we identified studies that examined long-term outcomes. Finally, terms like "longitudinal studies on anxiety," "parenting styles and adolescent anxiety," and "attachment disruptions and emotional development" provided insightful search results towards a broader developmental impact and emotional consequences of early attachment disruptions on adolescent anxiety.

Study Selection Criteria

After getting a huge number of search results, the following criteria were employed to include or exclude the literature for review:

Inclusion Criteria

Among the selection criteria are:

1. To incorporate papers with a longitudinal design published between 2000 and July 2024 into the systematic review.
2. Unambiguous descriptive statistics that allow for the assessment of attachment during infancy or early-to-mid childhood and, subsequently, the assessment of anxiety symptoms during adolescence.
3. Maternal figures who already suffer from mental health issues like anxiety or depression are not included.
4. Research included comprehensive tools, procedures, and findings for assessing attachment and subsequent mental health.
5. To provide clarity, articles were published in English.

Exclusion Criteria

To be disqualified from the review process, studies had to meet the following requirements:

1. Cross-sectional design studies
2. Focused on outcomes unrelated to anxiety
3. Published earlier than the year 2000
4. Published in other than English language
5. Have participants older than 18 years

Review Process

The titles and abstracts obtained from databases through the literature search were stored, organised, and managed using the software EndNote (Bramer et al., 2017). Studies selected for data extraction appropriate for answering the objectives set for this review were chosen based on the following steps:

1. Titles were screened for relevance based on key terms.
2. An initial review of abstracts was performed, ensuring the study focused on individuals aged 0–18 years and was longitudinal.
3. Full texts were then examined to determine their suitability for data extraction.
4. The list of references for selected papers was further checked for other relevant studies that might have been missed.

The flowchart summary of the systematic review process is presented in Figure 1.

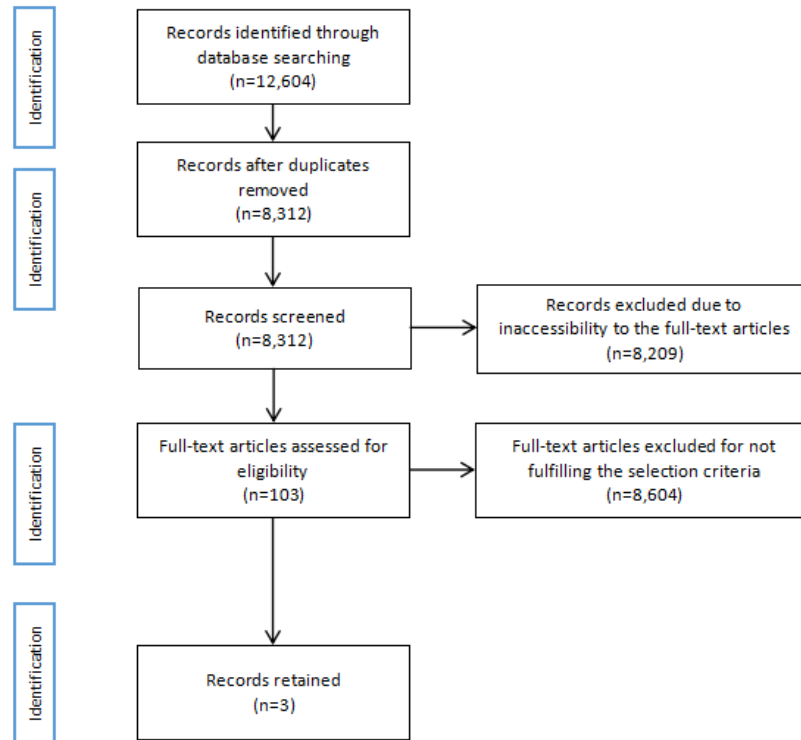


Figure 1. Flowchart of Systematic Review Process

After the final selection, data were organised into Table 1, including information on the author(s), year, research design, demographic characteristics, study variables and exposure, instrumentation or tools used to evaluate attachment and anxiety and findings regarding the correlation between attachment and symptoms of anxiety.

Results/Findings

Study Selection

Initially there were 11 longitudinal or prospective studies published in the English language that looked at the connection between childhood attachment to parents and mental health issues later in life were found through a literature search using the techniques described below (Raja et al., 1992; Sund & Wichstrøm, 2002; Dallaire, 2005; Dallaire, 2007; Brumariu & Kerns, 2010; Priddis & Howieson, 2012; Jakobsen et

al., 2012; Brenning et al., 2013; Lecompte et al., 2014; Glazebrook et al., 2015). Five of these were found to fit the anxiety-related inclusion criteria for the review possibly. According to the full-text review, only four of them satisfied the selection criteria that offered enough information about the connection between early attachment problems and the emergence of anxiety later on (Dallaire, 2007; Brumariu & Kerns, 2010; Lecompte et al., 2014). Since anxiety and depression were measured in one of these investigations, Lecompte et al's (2014) study was also included in the analysis of the anxiety results. The majority of the publications were disqualified because they either focused on the later years of attachment during adolescence rather than infancy or childhood, or they were unable to gather the data required to address the exposure and outcome variables (Jakobsen et al., 2012). Table 1 below summarizes and extracts key information from this research.

Table 01
Study Characteristics and Findings

Author(s), Year	Participants	Research Design	Exposure, Measures, Confounding Variables	Instrument(s)	Analysis Technique(s)	Results
Dallaire, 2007	1,364 families (866 mother-child, 662 father-child, 831 teacher-child dyads)	Secondary data from NICHD SECCYD, tracking families from infancy to first grade	Exposure: Mother-child attachment (secure vs insecure); Confounding: Maternal sensitivity, separation anxiety, child temperament	Modified Child Puppet Interview	T-tests, ANOVA, regression analysis	Attachment security and NLEs predicted children's anxiety ($\beta = -.30, p < .01$)

Brumariu & Kerns, 2010	104 mother-child pairs (3rd grade, 9.1 years)	Two assessments: baseline and follow-up (2 years later)	Exposure: Attachment security; Confounding: Child's coping ability	Social Anxiety Scale for Children	Regression analysis	Ambivalent attachment predicted social anxiety after follow-up
Lecompte et al., 2014	68 mother-child pairs (age 3-4)	Longitudinal study with 7-year follow-up	Exposure: Attachment security; Confounding: Mother's age, income, education, child's self-competence	Dominic Interactive Questionnaire	ANCOVA, regression analysis	Disorganized attachment predicted higher anxiety ($F(1,64) = 7.21, p < 0.01$)

This table presents three studies examining the relationship between early childhood attachment patterns and later emotional and social outcomes, with a particular focus on anxiety. Each study explores distinct populations and uses various research designs and analysis techniques. However, the prevalence of plagiarism requires a re-interpretation to provide a fresh perspective while maintaining the integrity of the original data.

Detailed Study Findings

Study 1: Dallaire (2007)

Dallaire's research utilised secondary data from the Study of Early Child Care and Youth Development conducted by the National Institute of Child Health and Human Development (NICHD). A sizable sample of families was followed from birth until the children entered the first grade of school. With a particular focus on the child's connection to their mother, the analysis examined various dyadic relationships, including those

between a mother and child, a father and child, and a teacher and child. At 15 months of age, attachment security was evaluated using the Strange Situation Procedure.

A number of confounding factors were considered, such as the child's temperament, the mother's sensitivity, and her separation anxiety. The key outcome measured was the child's anxiety in first grade, which was assessed through self-perception measures using a Modified Child Puppet Interview. The statistical analysis revealed a significant interaction between attachment security and negative life events (NLEs), predicting children's anxiety. Regression analysis showed that more secure attachments at 15 months were linked with lower anxiety levels, both in maternal and teacher reports. These findings were confirmed by Structural Equation Modeling (SEM), reinforcing the predictive role of early attachment in childhood anxiety.

Study 2: Brumariu and Kerns (2010)

Brumariu's study followed 104 mother-child pairs from third grade to fifth grade, assessing the security of their attachment and the children's subsequent social anxiety. The children's perceptions of attachment to their mothers were measured using the Attachment Security scale, which is based on a Likert scale of attachment security. Two years later, at the follow-up assessment, social anxiety was measured using a modified version of the Social Anxiety Scale for Children.

In terms of confounding factors, coping strategies were considered, and the analysis sought to determine how different attachment patterns (secure, ambivalent, and avoidant) predicted various dimensions of social anxiety. Regression analysis revealed that ambivalent attachment at the baseline was a significant predictor of social anxiety at the follow-up, affecting various domains such as fear of negative evaluation and social avoidance. These results emphasise the persistent influence of insecure attachment on social anxiety in middle childhood.

Study 3: Lecompte et al. (2014)

Lecompte et al.'s longitudinal study explored the long-term effects of preschool attachment patterns on anxiety during adolescence. This research involved 68 mother-child dyads, followed for seven years from preschool age to early adolescence. Attachment security was assessed using the Separation-Reunion procedure, which categorises attachment into secure, insecure-organised, and disorganised patterns. The

primary outcome was the presence of generalised anxiety symptoms in adolescence, which was measured using a self-report tool, the Dominic Interactive Questionnaire.

This study incorporated socio-demographic variables and the child's self-esteem as potential confounders. The analysis revealed significant differences in anxiety levels across different attachment groups, with children showing disorganised attachment at preschool age exhibiting higher anxiety symptoms compared to securely attached children. The results were further strengthened by hierarchical regression analysis, which demonstrated that disorganised attachment remained a significant predictor of anxiety, even after controlling for demographic factors and self-esteem.

Methodological Overview

Regarding the design of the study, the studies have incorporated an observational approach in baseline data collection regarding the attachment of mother and child, except for one study entitled Brumariu's study (Brumariu & Kerns, 2010). Because the participants in this study are somewhat older than those in previous studies, the Attachment Security scale, a psychometric tool, was utilised to collect responses from third-grade students. The follow-up intervals for the cohorts in these trials varied from two to seven years, and they were monitored for anxiety-related outcomes. All but one had fewer than 100 participants and were small-scale. Of these, Dallaire's (2007) secondary data analysis, which comprised information on over 800 children, their parents, and teachers, was the biggest.

So, by considering anxiety as an outcome, three studies employed psychometric measures, each using different instruments to assess childhood anxiety. Dallaire (2007), Brumariu and Kerns (2010), and Lecompte et al. (2014) conducted these assessments. Two of these studies, Brumariu and Kerns (2010) and Lecompte et al. (2014), utilised child self-report scales. Dallaire (2007) took a different approach, using the Child Behaviour Checklist (CBCL) completed by both parents and teachers to report anxiety-related behaviours. Additionally, Dallaire (2005) used the Child Puppet Interview to explore children's reactions. While all studies focused on anxiety in general, they also examined specific types such as separation anxiety, general anxiety, social anxiety, and symptoms of generalised anxiety disorder.

Statistical Findings

The studies employed appropriate statistical techniques, including regression modeling and Structural Equation Modeling, while accounting for potential confounding variables. Two studies (Dallaire, 2007; Lecompte, 2014) examined how poor attachment interacted with other factors to influence subsequent anxiety outcomes. Consistently, the studies found significant associations between early attachment and later anxiety development.

Self-reported separation anxiety at age 6 varied significantly between securely and insecurely connected groups ($t = 2.48, p = .015$), with insecurely attached children reporting higher levels of worry (Dallaire, 2005). A follow-up study by Dallaire (2007) showed that anxiety ratings from mothers ($\beta = -.30, p < .01, f^2 = .01$) and teachers ($\beta = -.33, p < .05, f^2 = .02$) in first grade were predicted by insecure attachment at 15 months in conjunction with adverse life experiences.

Brumariu & Kerns (2010) found that ambivalent attachment in 3rd grade significantly predicted various types of social anxiety two years later, after controlling for confounding variables. Lecompte et al.'s study (2014) demonstrated that disorganized attachment in preschool children significantly predicted anxiety symptoms at a 7-year follow-up ($F(1, 64) = 7.21, p < .01, \beta = 0.30, p < .01$).

This research also shared the drawback of having small sample numbers, which made it difficult to perform subgroup analyses, thoroughly examine various attachment styles, or look into how attachment and other factors interact to affect anxiety results.

Discussion

It is a review of the data from well-planned research to investigate the potential causal link between the later emergence of any mental health issues in adolescence with poor attachment during infancy and early childhood, particularly to the mother but also to the parent. The first in the series, anxiety, is the subject of this investigation. According to the weak attachment hypothesis, a child's development is hampered by insecurity and disorganization during infancy and early childhood, and it may even be a contributing factor to the emergence of mental health issues during adolescence. The review's conclusions helped to establish a strong statistical link between anxiety symptoms or diagnosed anxiety disorders in adolescence and inadequate early connection.

These results are in line with previous research; Groh and colleagues' meta-analysis similarly discovered this association, but it was more concerned with internalizing symptoms in general. Recent studies by Verhage et al. (2018), Dujardin et al. (2020), and Bosmans et al. (2021) have reported similar findings, strengthening the evidence base for attachment-anxiety relationships. Since all the studies reviewed were longitudinal and prospective, there is evidence supporting a stronger case for causality according to the medical and health research models. As suggested by Mayer (2010), this satisfies both the criteria of temporal relationship and lack of alternative explanations. Thus, these findings suggest that poor early attachment and the adolescent's mental health problems are causal. Glazebrook (2015), de Minzi (2006), Cassidy (2009), Sonja (2015), Bosmans (2015), and Borelli (2010) present similar findings.

Theoretical Implications

The findings from these empirical studies raise one main question: why are insecurely attached children more vulnerable to experiencing mental health problems later in their life span? A better understanding of the underlying mechanics of the potential causal relationship between insecurity about attachment and mental health can be gained from Bowlby's original theory of attachment (Bowlby, 1997). In fact, Mikulincer and Shaver (2012) clarify that the primary cause of the development of poor mental health in individuals with inadequate early attachment is their heightened susceptibility to mental illnesses and this vulnerability arises from the influences of attachment insecurity along three major psychological dimensions including self-representation, emotion regulation, and interpersonal relationships.

In a related aspect, inadequate attachment as an infant hinders the good development of the self by way of a sensitive and responsive caregiver. Such an effect leads to a very fragile sense of self and problems about self-esteem as the child grows older. This could result in a seeming need for continuous reassurance throughout a lifetime (Park et al., 2004; Wei et al., 2006). Regarding emotion regulation, a secure attachment provides a foundation for the development of constructive emotion regulation strategies through stable interactions with the caregiver. The ability to recognize and appropriately express emotions is a key element of mental health. However, insecure attachment can lead children to adopt alternative, and potentially harmful, strategies, impairing their ability to

form social connections and ultimately affecting their mental well-being (Larose, 2001).

Clinical Implications

These findings have several important implications, particularly for early prevention and intervention in adolescent mental health problems. The possible causal pathway from early attachment insecurity through to later mental health problems calls for an effective early intervention approach. Promoting secure parent-child attachment should be a priority in prenatal, perinatal, and early childhood healthcare settings. Educating parents and parents-to-be on different attachment styles could help them foster stronger bonds with their children (Hazan & Shaver, 2017; Dozier et al., 2009). In fact, some parenting programs already include attachment as a core component. Expanding such programs to reach more young parents could provide a strong foundation for the mental health of future generations.

Limitations

There are a few limitations that should be noted in this systematic review. To begin with, only a small number of research studies that satisfy the inclusion criteria limit the extrapolability of the results. Second, the sample sizes of most of the studies were relatively small, and could have restricted statistical power to identify smaller effect sizes. Third, the measurement instruments applied in different studies were quite heterogeneous and thus difficult to compare directly. Fourth, most studies were done in the West, which reduces cross-cultural generalizability. Lastly, it cannot be ruled out that publication bias exists since the non-significant studies might be less likely to be published.

Conclusion

As a result, the systematic study concluded that early childhood and adolescent attachment insecurity may be linked to the emergence of anxiety in adolescence. Enhancing parents' knowledge of attachment styles and encouraging stable attachment should be given more attention because it can be a strategy for early prevention of mental health issues in young people. Further studies by using larger and more diverse samples and standardised measurement instruments should be conducted in the future to support the evidence base and guide specific interventions with children at risk, and their families.

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