

Impact of Anxiety and Depression on Children with Learning Disabilities

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Abstract: *Children with learning disabilities face significant academic challenges that extend beyond the classroom, profoundly affecting their psychological well-being. This paper examines the impact of anxiety and depression on children with specific learning disabilities, synthesizing current research on prevalence, underlying mechanisms, and intervention effectiveness. Evidence indicates that approximately 30% of children with LD experience clinically significant emotional-behavioral problems, with internalizing disorders particularly anxiety and depression predominating over externalizing conditions.*

Keywords: learning disabilities, anxiety, depression, internalizing disorders, social-emotional learning, comorbidity, children

I. INTRODUCTION

Learning disabilities represent a heterogeneous group of neurodevelopmental disorders characterized by persistent difficulties in reading, writing, and/or mathematics skills despite average intelligence and adequate educational opportunities. Affecting approximately 5–15% of the student population, these conditions include dyslexia, dyscalculia, dysgraphia, and other specific learning disorders that interfere with academic achievement and daily functioning. While the cognitive and academic dimensions of LD have received extensive research attention, the profound psychological consequences of these disorders remain inadequately addressed in both clinical practice and educational policy.

The intersection of learning disabilities and mental health represents a critical public health concern. Children with LD face an elevated risk for internalizing disorders, particularly anxiety and depression, which can compound their academic difficulties and impair quality of life across multiple domains. The relationship between LD and psychological distress is complex, involving reciprocal influences: academic failure generates emotional distress, while anxiety and depression impair cognitive resources necessary for learning. This bidirectional relationship creates a downward spiral that, without intervention, can lead to school dropout, unemployment, and persistent mental health problems into adulthood.

Despite the well-documented comorbidity between LD and internalizing disorders, significant gaps remain in understanding the mechanisms underlying this relationship and in developing effective interventions. The present paper synthesizes current research on the impact of anxiety and depression on children with learning disabilities, examining: (1) prevalence rates and patterns of comorbidity; (2) cognitive, emotional, and social mechanisms; (3) moderating factors including age, gender, and comorbidity type; (4) protective factors and resilience; and (5) evidence-based intervention approaches. This comprehensive analysis aims to inform clinical practice, educational policy, and future research directions in this critically important area.

PREVALENCE AND PATTERNS OF COMORBIDITY

1. Epidemiological Evidence

The co-occurrence of learning disabilities and mental health problems is well-established across multiple epidemiological studies. Research indicates that approximately 30% of children with SLD exhibit clinically significant



emotional and behavioral problems. A comprehensive review of prevalence studies reveals that children with LD across all severity levels show substantially elevated rates of internalizing disorders compared to typically developing peers.

Table 1: Prevalence of Mental Health Problems in Children with Learning Disabilities

Condition	Prevalence (%)	Confidence Interval
Any mental health problem	28.75	34.40–63.13
Depression	2.34	0.17–2.50
Anxiety	14.06	0.24–14.30
ADHD	14.61	1.04–15.65
Conduct disorder	11.79	0.61–12.40
OCD	2.7	-
Social phobia	2.52–2.7	-

These prevalence data demonstrate that anxiety disorders (14.06%) represent the most common internalizing condition among children with LD, followed by depression (2.34%). The rate of any mental health problem (28.75%) substantially exceeds that observed in the general pediatric population, underscoring the heightened psychological vulnerability of this group.

2. Internalizing vs. Externalizing Patterns

Research consistently indicates that children with LD exhibit a predominance of internalizing symptoms characterized by anxiety, depression, social withdrawal, and somatic complaints over externalizing problems. This pattern reflects the nature of LD as a "hidden disability" that generates chronic frustration, self-doubt, and social isolation rather than overt behavioral disruption.

A study of 121 children and adolescents with SLD found that approximately half manifested emotional-behavioral problems, with internalizing symptoms significantly outnumbering externalizing presentations. This finding aligns with the broader literature suggesting that the experience of academic failure and peer comparison generates internal distress, including low self-esteem, shame, and anticipatory anxiety about school performance.

3. Comorbidity with Other Conditions

The diagnostic picture is further complicated by high rates of comorbidity between LD and other neurodevelopmental disorders. Attention Deficit Hyperactivity Disorder (ADHD) co-occurs with LD in 25–45% of cases, representing the most frequent comorbid condition. This overlap is clinically significant because ADHD symptoms including inattention, impulsivity, and executive dysfunction can both exacerbate learning difficulties and magnify anxiety and depression.

Table 2: Comorbidity Patterns in Children with Specific Learning Disabilities

Comorbid Condition	Prevalence with SLD (%)
ADHD	25–45
Anxiety disorders	14.06
Conduct disorder	11.79
Depression	2.34
Autism Spectrum Disorder	1.04–10.7

MECHANISMS LINKING LEARNING DISABILITIES TO ANXIETY AND DEPRESSION

1. Cognitive Mechanisms

The relationship between LD and internalizing disorders is mediated by several cognitive mechanisms. Executive functions including working memory, cognitive flexibility, and inhibitory control play a crucial role in both academic



performance and emotional regulation. Deficits in working memory, a core feature of many LDs, have been shown to mediate the relationship between learning difficulties and internalizing symptoms.

Research examining the structural relationships between executive functions, academic motivation, and mental health in students with LD reveals that executive function deficits directly impact intrinsic and extrinsic motivation, which in turn influences the expression of anxiety and depression. This finding suggests that cognitive inefficiencies create a cascade of academic failure, reduced motivation, and psychological distress.

2. The Multiple Deficit Model

The relationship between LD and emotional-behavioral problems is best understood through the "Multiple Deficit Model," which posits that disorders arise from complex interactions between specific core deficits and shared risk factors. According to this framework:

i. Domain-specific deficits: Unique cognitive weaknesses underlying specific LD types (e.g., phonological processing in dyslexia) directly contribute to academic challenges

ii. Shared risk factors: Common vulnerabilities including processing speed, attention, and memory deficits increase risk for both learning and emotional difficulties

iii. Environmental factors: Academic stress, peer victimization, and inadequate support amplify the impact of cognitive vulnerabilities on mental health

This model explains why children with comorbid reading and mathematics difficulties (RDMD) show particularly elevated levels of anxiety and depression compared to those with single-domain deficits.

3. Bidirectional Relationships

The causal direction between LD and internalizing disorders is bidirectional. Academic failure generates emotional distress through repeated experiences of frustration, failure, and social comparison. Conversely, anxiety and depression impair cognitive resources necessary for learning, including attention, working memory, and motivation. This bidirectional relationship creates a self-perpetuating cycle:

i. Learning difficulties → Academic failure → Reduced self-esteem → Anxiety/Depression

ii. Anxiety/Depression → Impaired attention and memory → Reduced academic performance → Worsening LD symptoms

Research by Willcutt and Pennington found that reading disorders predict later internalizing symptoms, while also demonstrating that anxiety and depression can independently contribute to reading difficulties.

4. Psychosocial Mechanisms

Beyond cognitive factors, psychosocial mechanisms play a critical role in the LD-anxiety/depression relationship. Children with LD often experience peer rejection, bullying, and social isolation, which contribute to internalizing symptoms. The development of negative academic self-concept the perception of oneself as a "bad student" serves as a particularly potent risk factor for depression.

MODERATING FACTORS

1. Gender Differences

Gender significantly moderates the relationship between LD and internalizing disorders. Research consistently demonstrates that females with LD exhibit higher rates of anxiety and depression than their male counterparts, while males show more externalizing problems.

A study of 292 boys and 129 girls with learning difficulties found that girls with dyslexia had lower self-esteem and more anxiety and depression symptoms, whereas boys presented more disruptive and delinquent behaviors. This pattern reflects broader gender differences in the expression of distress, with females more likely to internalize difficulties and males to externalize them.



Societal pressures and gender-specific expectations may intensify the emotional struggles of girls with LD. Female students with SLD face unique challenges related to academic self-concept and social comparison, which contribute to elevated internalizing symptoms.

2. Age Effects

Age represents another significant moderating factor. Older children with LD show greater internalizing problems compared to younger children. This developmental pattern reflects the cumulative impact of academic failure and the increasing importance of academic performance for self-worth and social standing as children progress through school.

Table 3: Age-Related Patterns in Internalizing Symptoms

Age Group	Internalizing Symptom Pattern
Primary school (7–10 years)	Moderate anxiety, emerging self-concept concerns
Secondary school (11–14 years)	Elevated anxiety, declining self-esteem
Adolescent (15–18 years)	Peak depression risk, academic identity consolidation

Early diagnosis and intervention are protective against the development of severe internalizing problems. Children identified later as dyslexic report greater feelings of low self-esteem and fear of judgment, highlighting the importance of early identification.

3. Type and Severity of Learning Disability

The type and severity of LD influence the pattern of emotional-behavioral problems. Children with impairment in a single learning domain typically show internalizing disorders, while those with multiple-domain impairments more frequently exhibit externalizing disorders.

Children with comorbid reading and mathematics difficulties (RDMD) exhibit significantly higher levels of anxiety and depression compared to those with single-domain difficulties and typically developing peers. However, research suggests that attention difficulties may contribute to these differences, with group differences becoming non-significant after controlling for attention.

PROTECTIVE FACTORS AND RESILIENCE

1. Grit and Resilience

Protective factors play a crucial role in buffering children with LD against anxiety and depression. A three-year longitudinal study of 163 participants with reading disorder found that grit and resilience were significantly associated with decreased anxiety ($\beta = -0.4$, $p < 0.001$), decreased depression ($\beta = -0.3$, $p < 0.001$), improved academic performance ($\beta = 0.5$, $p < 0.001$), and improved quality of life.

These findings suggest that personal qualities of persistence, passion for long-term goals, and adaptive coping strategies can significantly buffer against the psychological impact of learning difficulties. Interventions designed to cultivate grit and resilience may, therefore, yield positive mental health benefits in this population.

2. Social-Emotional Learning

Social-emotional learning programs directly target protective factors by teaching core competencies including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. A quasi-experimental study of 32 fourth- to sixth-grade students with SLD found that a 12-session SEL intervention significantly reduced psychological distress ($p < 0.001$, $\eta^2 = 0.661$) and emotional dysregulation ($p < 0.001$, $\eta^2 = 0.717$).

These substantial effect sizes indicate that SEL interventions can account for 66–72% of the variance in psychological outcomes, demonstrating their potential as powerful protective interventions for children with LD.



Table 4: Effectiveness of Social-Emotional Learning Program

Outcome	F Value	p Value	Effect Size (η^2)
Psychological Distress	56.623	<0.001	0.661
Emotional Dysregulation	73.389	<0.001	0.717

INTERVENTION APPROACHES

1. Social-Emotional Learning Interventions

As detailed above, SEL programs demonstrate substantial efficacy in reducing anxiety, depression, and emotional dysregulation in children with LD. These programs address the psychosocial mechanisms linking LD to internalizing disorders by:

- Enhancing self-awareness and emotional regulation
- Building social skills and peer relationships
- Developing coping strategies for academic stress
- Fostering growth mindsets about learning

2. Mindfulness-Based Interventions

Mindfulness-based interventions (MBIs) represent a promising approach for reducing internalizing symptoms in children with LD. A pilot study of 14 elementary school students with severe LD found that an 8-week MBI significantly reduced self-reported anxiety (partial $\eta^2 = 0.34$) and depression (partial $\eta^2 = 0.34$), as well as teacher-reported aggression (partial $\eta^2 = 0.39$) and conduct problems (partial $\eta^2 = 0.62$).

The mindfulness approach teaches children to attend to present-moment experiences without judgment, breaking the cycle of rumination and worry that characterizes anxiety and depression. Effect sizes for these interventions ranged from large to very large (partial $\eta^2 = .31-.61$), suggesting substantial clinical utility.

Table 5: Mindfulness Intervention Outcomes in Children with Learning Disabilities

Outcome	Informant	Pretest Mean (SD)	Posttest Mean (SD)	F	Partial η^2
Anxiety	Student	13.80 (7.00)	11.00 (6.60)	6.80	.34
Depression	Student	7.35 (4.40)	5.78 (5.30)	6.73	.34
Conduct Problems	Teacher	4.28 (4.50)	1.57 (1.50)	21.10	.62

$p < 0.05, p < 0.01$

3. Integrated Educational and Mental Health Approaches

Effective intervention for children with LD requires integrated approaches addressing both learning and mental health needs. The Developmental Psychopathology perspective emphasizes that cognitive and emotional factors are inextricably linked in the development of LD and internalizing disorders.

Clinical guidelines recommend:

- Multidisciplinary assessment addressing both cognitive and emotional functioning
- Educational accommodations that reduce academic stress
- Psychological interventions targeting anxiety, depression, and self-esteem
- Parent and teacher training in supporting children's emotional needs

CLINICAL AND EDUCATIONAL IMPLICATIONS

1. Early Identification and Intervention

The evidence strongly supports early identification and intervention for both LD and associated mental health problems. Children who receive early diagnosis and support show better psychological outcomes, with reduced internalizing symptoms and more positive self-concept. Universal screening for both learning difficulties and emotional distress should be implemented in schools.



2. Integrated Service Delivery

Mental health and educational services for children with LD must be integrated. Traditional approaches that separate learning support from mental health treatment fail to address the bidirectional relationship between academic difficulties and psychological distress. Collaborative models involving educators, psychologists, and families are essential.

3. Strengths-Based Approaches

Interventions should capitalize on protective factors including grit, resilience, and social-emotional competencies. Building on children's strengths rather than focusing exclusively on deficits promotes positive mental health and academic engagement.

II. CONCLUSION

The impact of anxiety and depression on children with learning disabilities represents a significant public health concern requiring urgent attention. Evidence demonstrates that approximately 30% of children with LD experience clinically significant internalizing disorders, with anxiety affecting 14% and depression affecting 2–24% of this population. The relationship between LD and internalizing symptoms is bidirectional and mediated by cognitive factors including executive functions, working memory, and academic self-concept.

Gender, age, and comorbidity type moderate this relationship, with females and older children showing greater vulnerability to internalizing disorders. Protective factors including grit, resilience, and social-emotional competencies buffer against adverse mental health outcomes, while targeted interventions including SEL and mindfulness programs demonstrate substantial efficacy in reducing both psychological distress and emotional dysregulation.

Integrated approaches addressing both learning and emotional needs are essential for improving outcomes in this vulnerable population. Early identification, multidisciplinary assessment, and comprehensive intervention that incorporates educational accommodations, psychological support, and family involvement represent the standard of best practice. As research continues to elucidate the mechanisms linking learning disabilities to anxiety and depression, there is growing opportunity to develop more effective, personalized interventions that can break the cycle of academic failure and psychological distress, enabling children with LD to achieve their full potential.

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