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A Review of Psychological Correlates Associated with Learning Disabilities in Children

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Abstract: *Learning disabilities represent a heterogeneous group of neurodevelopmental disorders characterized by persistent difficulties in academic skill acquisition. While the academic challenges associated with LD are well-documented, emerging research has increasingly focused on the psychological correlates that accompany these learning difficulties. This review synthesizes current empirical evidence on the psychological correlates of LD in children, including internalizing problems, externalizing behaviors, social-cognitive deficits, self-concept disturbances, and comorbid psychiatric conditions.*

Keywords: Learning Disabilities, Psychological Correlates, Internalizing Problems, Self-Concept, Social Cognition, Comorbidity, Children.

I. INTRODUCTION

Learning disabilities are neurodevelopmental disorders characterized by persistent difficulties in the acquisition and use of academic skills, including reading, writing, and mathematics, despite average or above-average intelligence and adequate educational opportunity (American Psychiatric Association, 2013). With estimated prevalence rates ranging from 2% to 15% among school-age children, LD represents one of the most common categories of neurodevelopmental disorders encountered in educational and clinical settings. Historically, research and intervention efforts have predominantly focused on the academic manifestations of LD addressing deficits in phonological processing, numeracy skills, and reading comprehension. However, a growing body of evidence has illuminated the extensive psychological correlates that accompany these learning difficulties, revealing that children with LD face challenges that extend far beyond the classroom.

The psychological correlates of LD encompass a broad spectrum of functioning, including emotional well-being, social competence, self-perception, and psychiatric comorbidity. These psychological dimensions are not merely secondary consequences of academic struggle but may share developmental pathways with learning difficulties and significantly influence long-term outcomes. Children with LD are at elevated risk for internalizing problems such as anxiety and depression, externalizing behaviors, social rejection, low self-esteem, and psychiatric disorders that compound the challenges of their learning difficulties.

The importance of understanding psychological correlates in LD cannot be overstated. These psychological factors contribute substantially to the overall burden of LD, affecting quality of life, academic engagement, treatment response, and long-term mental health trajectories. Moreover, the presence of psychological difficulties may impede academic progress, creating a bidirectional relationship between learning and emotional functioning that complicates intervention efforts. Despite the recognized importance of these psychological dimensions, significant gaps remain in understanding the mechanisms underlying these associations, the moderating factors that influence vulnerability, and the most effective approaches to assessment and intervention.

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METHODS

1. Literature Search Strategy

A systematic search of electronic databases was conducted, including PubMed, PsycINFO, ERIC, Scopus, and Web of Science. Search terms included combinations of the following keywords: "learning disabilities," "specific learning disorder," "dyslexia," "reading difficulties," "mathematics difficulties," "psychological correlates," "internalizing problems," "externalizing problems," "anxiety," "depression," "self-concept," "self-esteem," "social cognition," "peer relationships," "psychiatric comorbidity," "children," and "adolescents." The search was limited to peer-reviewed articles published in English between 2010 and 2026. Reference lists of identified articles and relevant meta-analyses were also examined for additional sources.

2. Data Extraction and Synthesis

Given the breadth of the psychological correlates examined, a narrative synthesis approach was adopted. Key information extracted from included studies included: study design, sample characteristics, LD definition and assessment methods, psychological measures employed, main findings, and identified moderators or mediators. Findings were organized thematically according to the major psychological domains identified in the literature.

RESULTS

1. Internalizing Problems: Anxiety and Depression

A substantial body of research has documented elevated rates of internalizing problems among children with LD. Meta-analytic evidence indicates that children with LD demonstrate significantly higher levels of internalizing problems compared to typically developing peers, with a moderate overall effect size (Hedges' g = -.54) . This pattern has been observed across various types of LD, including reading disabilities, mathematics disabilities, and unspecified learning difficulties.

i. Anxiety Disorders

Approximately 20% of children with specific learning disorders (SLD) meet diagnostic criteria for anxiety disorders, a rate substantially higher than that observed in the general population. Epidemiological studies reveal that children with SLD are more than twice as likely to have anxiety disorders compared to control groups, and youths with childhood-onset anxiety are six times more likely to have a premorbid SLD. These findings suggest a bidirectional or shared developmental pathway between LD and anxiety.

ii. Depression

Depression represents another significant internalizing correlate of LD. Research has consistently shown elevated depressive symptoms and higher rates of depressive disorders among children with LD. A study examining 68 papers on reading disability and mental health outcomes found that reading disabilities were associated with significant elevations on all measures of internalizing symptoms, including depression, which correlated with low self-esteem.

Children with comorbid RDMD appear to be at particularly elevated risk for depression, exhibiting significantly higher levels of depression compared to chronological-age controls. However, research suggests that attention difficulties may contribute to these differences, as group differences in depression between RDMD and control groups were no longer significant after controlling for attention. This finding highlights the complex interplay between learning difficulties, attentional problems, and emotional outcomes.

iii. Mechanisms Linking LD and Internalizing Problems

Several mechanisms have been proposed to explain the elevated rates of internalizing problems in children with LD. The "secondary consequence" hypothesis suggests that repeated academic failure and negative school experiences directly increase vulnerability to anxiety and depression. Alternatively, the "neurodevelopmental continuum" model proposes that LD and internalizing disorders share overlapping etiological factors, including genetic vulnerabilities and common neurocognitive deficits. The role of language deficits in mediating the relationship between LD and internalizing problems has also been emphasized, as language difficulties may impair emotional regulation and social understanding.

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2. Externalizing Problems

While internalizing problems have received more extensive research attention, children with LD also demonstrate elevated rates of externalizing behaviors, including aggressive behavior, conduct problems, oppositional defiance, and rule-breaking. A study of psychiatric comorbidity in 226 children with SLD found that 73.5% had comorbid attention deficit hyperactivity disorder, and disruptive behavior disorders were also highly prevalent.

3. Social-Cognitive Functioning and Peer Relationships

Children with LD face substantial challenges in social-cognitive functioning, including difficulties with emotion recognition, perspective-taking, conflict resolution, and peer relationships. These social difficulties are not merely consequences of academic struggle but appear to be characteristic features of LD that are present prior to formal identification.

i. Theory of Mind and Social Cognition

Recent meta-analytic evidence indicates that children and adolescents with SLD demonstrate poorer theory of mind abilities compared to typically developing peers. ToM, the capacity to understand and attribute mental states to oneself and others, is fundamental to successful social interaction. Children with SLD show particular difficulties with verbal ToM tasks, suggesting that language-related and cognitive demands contribute to lower performance. These findings underscore the importance of considering social-cognitive abilities when understanding the academic and social challenges faced by children with SLD.

Research by Bailey and Im-Bolter (2025) suggests that the language deficits associated with SLD put children at risk for deficits in social cognitive skill. They argue that language serves as the underlying mechanism for social cognitive deficits in children with SLD, as language is essential for recognizing interpersonal conflict, inferring emotion, and generating effective social problem-solving strategies. Children with SLD are 10 times more likely to have social competence deficits compared to children with typical academic achievement and are less likely to be sought out as work or play partners.

ii. Peer Relationships and Social Stigma

Children with LD experience significant difficulties in peer relationships, including fewer friendships, social rejection, and perceived social stigma. A study examining perceived social stigma and friendship skills among elementary school students with LD found a negative correlation between perceived stigma and friendship skills, with boys demonstrating better friendship skills than girls. Students with LD who perceive themselves as stigmatized are less likely to develop and maintain friendships, further compounding their social isolation.

The self-perception of having a learning disability plays a crucial role in psychological adjustment. Research has shown that children with LD who perceive their disability as delimited rather than global, modifiable rather than permanently limiting, and not stigmatizing demonstrate more positive academic self-concept and higher self-esteem. These findings highlight the importance of how children conceptualize their learning difficulties for their psychological well-being.

iii. Language as a Mediating Mechanism

The role of language in social-cognitive development is central to understanding the social difficulties of children with SLD. Comorbidity rates between SLD and language impairments range from 50% to 75%, and language deficits are evident prior to formal education in children who later develop SLD. Early language difficulties, including deficits in phonological awareness, semantics, and syntax, predict later reading difficulties and are also associated with social cognitive problems.

The link between language and social cognition is well-established in both typical and atypical development. Children with SLD demonstrate difficulties in all aspects of structural language, and these language deficits appear to be the foundation for their social cognitive impairments. This has important implications for assessment and intervention, as clinicians should assess language before diagnosing and treating the academic and social difficulties of children with SLD.

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4. Self-Concept and Self-Perception

Self-concept, defined as individuals' perceptions of and attitudes toward themselves, is a critical psychological correlate of LD. Children with LD are particularly vulnerable to negative self-concept development, which can have cascading effects on mental health, emotional regulation, and behavioral outcomes.

i. Dimensions of Self-Concept

Self-concept is multidimensional, encompassing social, competence, academic, family, affect, and physical domains. Children with LD show particular vulnerability in academic and competence self-concept, reflecting their difficulties in school settings and perceptions of their abilities. However, the impact of LD extends beyond academic self-perceptions to affect global self-esteem and social self-concept.

Research indicates that children with LD often develop negative self-perceptions of their disabilities, viewing their difficulties as global, permanent, and stigmatizing. These negative self-perceptions contribute to lower academic self-concept and self-esteem, creating a cycle of negative self-appraisal that impedes academic engagement and emotional well-being. Importantly, these negative self-perceptions persist even when controlling for demographic and academic factors, suggesting that the psychological impact of LD extends beyond objective academic performance.

ii. Developmental Trajectories and Implications

Self-concept development is particularly critical during middle childhood to early adolescence, a period when children become more aware of their academic standing relative to peers and when self-concept becomes more stable. Children with LD who experience repeated academic failure and negative social comparisons during this developmental period are at risk for entrenched negative self-perceptions that persist into adolescence and adulthood.

The relationship between LD and self-concept appears to be moderated by several factors, including the type and severity of LD, the presence of comorbid conditions, and the quality of social support. Teacher-student communication plays a particularly important role in shaping self-concept, with supportive, non-judgmental communication fostering positive self-perceptions. Research has identified 13 communication guidelines for teachers to facilitate child-sensitive communication that supports positive self-concept development in children with LD.

DISCUSSION

1. Synthesis of Findings

This review provides a comprehensive examination of the psychological correlates associated with LD in children, revealing consistent evidence of elevated risk across multiple domains of psychological functioning. Children with LD demonstrate significantly higher rates of internalizing problems, including anxiety and depression; externalizing behaviors; social-cognitive deficits; negative self-concept; and psychiatric comorbidity compared to typically developing peers. These psychological correlates are not merely secondary consequences of academic struggle but reflect complex interactions between learning difficulties, neurocognitive vulnerabilities, social experiences, and developmental processes.

A key finding emerging from this review is the importance of distinguishing between different types and patterns of LD. Children with comorbid reading and mathematics difficulties appear to be at particularly elevated risk for psychological problems, especially internalizing difficulties. The presence of comorbid RDMD is associated with higher levels of anxiety, depression, reading anxiety, and mathematics anxiety compared to children with isolated difficulties. This suggests that multiple academic vulnerabilities compound psychological risk, perhaps through cumulative academic failure and negative social experiences.

The role of language deficits in mediating the relationship between LD and psychological outcomes is another important theme. Language skills are fundamental to both academic achievement and social-emotional functioning, and the high comorbidity between LD and language impairments (50-75%) suggests that language may serve as a common pathway linking learning difficulties to psychological problems. Children with LD who have underlying language deficits may be particularly vulnerable to social-cognitive difficulties, internalizing problems, and negative self-concept.

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2. Theoretical Implications

The findings of this review have important implications for theoretical models of LD and psychological comorbidity. Three main perspectives have been proposed to explain the association between LD and psychological problems:

The Secondary Consequence Model: This model posits that LD directly increases vulnerability to psychological problems through repeated academic failure, negative social experiences, and reduced self-efficacy. While this model has intuitive appeal and is supported by evidence linking academic difficulties to psychological distress, it fails to account for the presence of psychological difficulties in some children prior to formal identification of LD.

The Shared Vulnerability Model: This model proposes that LD and psychological problems share underlying etiological factors, including genetic vulnerabilities, neurocognitive deficits, and environmental risk factors. The neurodevelopmental continuum model, which suggests that neurodevelopmental conditions and psychiatric disorders may exist on a continuum with overlapping etiological factors, aligns with this perspective.

The Language-Mediated Model: This model emphasizes the role of language deficits in linking LD to psychological problems, particularly social-cognitive difficulties and internalizing problems. Language is essential for emotional regulation, social understanding, and academic learning, and deficits in language may represent a common pathway that increases vulnerability to both LD and psychological difficulties.

It is likely that no single model fully accounts for the complex relationships observed between LD and psychological correlates. Instead, a multiple pathways perspective that incorporates elements of each model may best explain the heterogeneity observed in the psychological outcomes of children with LD. Individual differences in the nature and severity of LD, the presence of comorbid conditions, language abilities, environmental factors, and developmental timing likely influence the specific psychological correlates that manifest in individual children.

3. Clinical Implications

The findings of this review have significant implications for clinical practice, particularly in the areas of assessment, intervention, and prevention.

i. Assessment: Comprehensive assessment of children with LD must extend beyond academic skills to include evaluation of psychological functioning. Clinicians should routinely assess for internalizing problems, externalizing behaviors, social functioning, self-concept, and psychiatric comorbidity. The high prevalence of psychiatric comorbidity (81.4%) in children with SLD underscores the importance of systematic mental health screening in this population. Assessment should be multi-informant and multi-method to capture the full range of psychological functioning.

ii. Intervention: Treatment approaches should address both academic and psychological needs in an integrated manner. For children with LD and co-occurring anxiety or depression, interventions that combine academic support with cognitive-behavioral strategies may be more effective than either approach alone. The importance of addressing domain-specific anxieties suggests that intervention should target the specific areas of academic difficulty that trigger anxiety, rather than treating anxiety as a general condition.

iii. Prevention: Early identification of LD is critical for preventing or mitigating psychological difficulties. Children with LD who receive early, effective academic intervention may be less likely to develop the negative psychological correlates associated with chronic academic failure. Similarly, early identification of language deficits may prevent both academic and social-emotional difficulties.

iv. Teacher Communication: The role of teacher communication in shaping self-concept and psychological outcomes highlights the importance of teacher training in supportive communication strategies. Teachers can significantly influence children's self-perceptions through their language and interactions, and training in child-sensitive communication may be an effective, low-cost intervention for promoting positive psychological outcomes in children with LD.

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II. CONCLUSION

This review provides compelling evidence that children with learning disabilities face significant challenges beyond academic difficulties, including elevated rates of internalizing problems, externalizing behaviors, social-cognitive deficits, negative self-concept, and psychiatric comorbidity. The psychological correlates of LD are not merely secondary consequences but reflect complex interactions between learning difficulties, neurocognitive vulnerabilities, social experiences, and developmental processes. The high prevalence of psychological difficulties in this population underscores the importance of comprehensive assessment and integrated intervention approaches that address the full range of children's needs.

The findings of this review have important implications for clinical practice, including the need for routine mental health screening in children with LD, integrated treatment approaches that address both academic and psychological needs, and preventive interventions delivered early in development. Teacher communication and supportive educational environments play a crucial role in promoting positive psychological outcomes, and training in child-sensitive communication may be an effective strategy for supporting children with LD.

Future research should employ longitudinal designs to examine developmental trajectories, investigate the mechanisms linking LD to psychological outcomes, examine the effectiveness of integrated interventions, and explore the psychological correlates of LD in diverse populations. By advancing understanding of the psychological correlates of LD, research can inform the development of more effective approaches to supporting the academic, social, and emotional development of children with these conditions.

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