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Writing Difficulties in Children with Neurodevelopmental Disorders: A Scoping Review

[1]*Fatemah Bahman
[1]Department of Molecular Medicine, Kuwait Ministry of Health, Kuwait.

Abstract

Children with neurodevelopmental disorders frequently experience writing difficulties that impact their academic success, yet these challenges remain insufficiently characterized in the literature. This scoping review aimed to map and synthesize peer-reviewed studies published between 2018 and 2025 on writing difficulties in school-aged children with NDDs, including ADHD, ASD, DCD, and specific learning disorders. Using the PRISMA-ScR framework and the Population–Concept–Context approach, 10 studies were selected from six major databases, Google Scholar, PubMed, Scopus, PsycINFO, ERIC, and Web of Science. The keywords used included ASD, ADHD, DCD, and writing difficulties. The review identified three primary types of writing difficulties: transcription, compositional, and orthographic, often overlapping and influenced by disorder-specific cognitive and behavioral profiles. ADHD was associated with executive function deficits affecting writing fluency, while ASD-related challenges centered on linguistic coherence and task engagement. Assessment tools included standardized measures (e.g., WIAT, DASH) and qualitative observations. Interventions ranged from occupational therapy to teacher-led strategies. The review emphasized the need for multidimensional, individualized assessment and support systems and offers insights to guide future research and inclusive educational practices.

Keywords: Writing difficulties, neurodevelopmental disorders, school-aged children, ADHD, written composition, developmental coordination disorder, learning interventions.

1 Introduction

Writing is a foundational academic skill that plays a pivotal role in children's educational trajectories, influencing their ability to communicate, perform across subjects, and engage in higher-order thinking (Kim & Park, 2019). Proficient writing includes a complex integration of cognitive, linguistic, and motor processes, developing steadily through early childhood and into adolescence. However, for children with neurodevelopmental disorders (NDDs), writing often presents a unique and persistent challenge (Calderoni & Coghill, 2024). Despite the recognized importance of writing proficiency in academic success, the nature and scope of writing difficulties in children with NDDs remain inadequately understood and inconsistently addressed in the literature.

NDDs, such as Attention Deficit and Hyperactivity Disorder (ADHD), autism spectrum disorder (ASD), developmental coordination disorder (DCD), and learning disabilities (LD), are disorders arising in early childhood that affect the developing central nervous system and impact multiple areas of functioning. (Colizzi et al., 2020). Although each disorder comprises different impairments, they often have common difficulties, especially in areas that are crucial for writing. For example, children with ADHD may have difficulties with planning and paying attention to sustain effort, while children with ASD may struggle with narrative coherence and pragmatics. (Baixauli-Fortea et al., 2019). These challenges can be rooted in motor skills (e.g., dysgraphia and poor handwriting), cognitive in nature (e.g., poor executive functioning and poor planning and organizing), or language-based (e.g., sparse vocabulary, grammatical flaws, or violation of proper sentence structure) (Rosenblum, 2018).

The incidence of writing challenges in children with NDDs is high but frequently underdiagnosed. These individuals are at higher risk for chronic and complex writing deficits, which have the potential to contribute to scholastic underachievement and diminished self-worth. (Raoof et al., 2024). Although recognition of the necessity of facilitating writing development in such children has grown, available literature continues to be piecemeal, with considerable methodological variation between

Fatemah Bahman
Department of Molecular Medicine, Kuwait Ministry of Health, Kuwait.
Email: fatemah.bahman.88@gmail.com

studies with respect to assessment methods, tools, and interventions. Additionally, most research that has been done targets a particular disorder or narrowly defined writing disorder, leaving much of the general picture of writing problems within the spectrum of NDDs unclear (Leifler, 2022).

A scoping review is justifiable to systematically chart the scope, range, and nature of the evidence on writing impairment in children with NDDs. In contrast to systematic reviews designed to answer clearly defined questions, scoping reviews are well-suited to explore new fields of study, map the gaps in the evidence base, and facilitate clarification of key concepts and definitions. With both NDDs and writing disabilities being complex and heterogeneous in nature, a scoping strategy provides a generalized and adaptive model for summarizing the range of studies found, including qualitative and quantitative studies, trials of intervention, and theory-building (Khan et al., 2019). This methodology is especially appropriate in light of the limited integration across disciplines, such as psychology, education, occupational therapy, and speech-language pathology, that each contribute to our understanding of writing development.

Earlier reviews in this area seem to lack range, concentrating on either one disorder, such as dysgraphia, or considering writing only as a part of the general academic skills. Furthermore, the literature lacks interdisciplinary citations, with little cross-referencing within and beyond subtypes of writing disorders. Such balkanization hampers the creation of cohesive diagnostic and intervention frameworks that are multifaceted and nuanced in relation to children with neurodevelopmental disorders (Moran et al., 2024). There is a need for such a review that combines disparate disciplines and provides a holistic synthesis of the evidence.

This review aimed to evaluate the writing deficits among children with NDDs in the existing literature. In addition, its purpose was to describe and categorize the particular writing deficits identified, distinguishing among motor, cognitive, and language deficits. It further looked into the assessment and intervention tools employed in the studies and noted the common use and gaps, including areas for additional investigation. Ultimately, the review intended to consolidate and highlight gaps regarding available evidence to guide practice, teaching, and research for practitioners, educators, and researchers. This research deepened the understanding of how writing difficulties in children with NDDs, as well as the prevailing challenges within the literature, were examined using a scoping review approach. Understanding this is necessary to inform inclusive and effective teaching strategies for all students.

2 Methods

2.1 Eligibility Criteria

This scoping review was conducted in accordance with the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines. The eligibility criteria were determined using the Population–Concept–Context (PCC) framework shown in Table 1, recommended by the Joanna

Table 1. PCC Framework

Population	The review focused on children and adolescents aged 0 to 18 years diagnosed with one or more NDDs. This included, but was not limited to, ASD, ADHD, DCD, and specific learning disorders (SLDs), such as dysgraphia or written expression disorder. Studies that involved mixed populations (e.g., both children and adults) were included only if child-specific data were presented.
Concept	The central concept was writing difficulties. This encompassed a range of impairments, including mechanical aspects of writing (e.g., handwriting, fine motor skills), compositional challenges (e.g., planning and organizing written content), and orthographic issues (e.g., spelling and letter formation). Studies had to explicitly discuss writing difficulties either as a primary outcome or in relation to academic functioning.
Context	Studies were included if they were conducted in educational, clinical, or research settings. No geographical restrictions were applied, but studies had to be published in English to be included. Both qualitative and quantitative studies were eligible, as well as mixed-methods designs.
Types of Sources	Only peer-reviewed journal articles were included to ensure a minimum level of academic rigor. Conference abstracts, dissertations, editorials, commentaries, and unpublished (grey) literature were excluded.

Briggs Institute for scoping reviews.

2.2 Information Sources

To capture a comprehensive view of the literature, we searched major electronic databases including Google Scholar, PubMed, Scopus, PsycINFO, ERIC, and Web of Science. These databases were selected based on their coverage of health sciences, psychology, education, and interdisciplinary fields related to child development and NDDs. The searches were conducted between April and July 2025.

2.3 Search Strategy

A broad search strategy was developed in collaboration with an academic librarian. Key terms were identified based on the population (e.g., "children," "adolescents," "pediatric"), neurodevelopmental diagnoses (e.g., "ADHD," "autism," "ASD," "developmental coordination disorder," "learning disability"), and writing-related concepts (e.g., "writing difficulties," "handwriting," "written expression," "transcription," "composition"). Boolean operators (AND/OR) were used to combine terms appropriately (See Table 2).

Table 2. Search Strategy for Identifying Studies on Writing Difficulties in Children with NDDs

Concept	Keywords / Search Terms
Population	child*, adolescen*, pediatric, youth, student*
Neurodevelopmental Disorders (NDDs)	"autism spectrum disorder" OR ASD OR autism OR "attention deficit hyperactivity disorder" OR ADHD OR "developmental coordination disorder" OR DCD OR "specific learning disorder" OR SLD OR "learning disabilities"
Writing Difficulties	"writing difficulties" OR "written expression" OR handwriting OR transcription OR composition OR spelling OR dysgraphia
Combined Search Query	(child* OR adolescen* OR pediatric OR student*) AND ("writing difficulties" OR "written expression" OR handwriting OR transcription OR composition OR spelling OR dysgraphia) AND ("autism spectrum disorder" OR ASD OR autism OR "attention deficit hyperactivity disorder" OR ADHD OR "developmental coordination disorder" OR DCD OR "specific learning disorder" OR SLD OR "learning disabilities")
Limiters Applied	Language: English Publication years: 2018–2025 Peer-reviewed journal articles only
Databases Searched	PubMed, PsycINFO, ERIC, Scopus, Web of Science

2.4 Selection of Sources

All records retrieved from the databases were imported into a reference management tool, and duplicates were removed. A total of 10 studies were selected after a two-stage screening process was carried out. In the first stage, two reviewers independently screened titles and abstracts for relevance. In the second stage, the full texts of potentially eligible articles were assessed against the inclusion criteria. Discrepancies between reviewers were resolved through discussion or consultation with a third reviewer when necessary. A PRISMA-ScR flow diagram was used to report the number of studies identified, screened, excluded, and included in the final review.

2.5 Data Charting Process

A standardized data extraction form was developed to ensure consistency and transparency in capturing relevant information from the included studies. The form was pilot-tested on a small subset of five articles to ensure clarity and comprehensiveness. After minor refinements, the final version was independently used by two reviewers to extract data from each study. Regular meetings were held to resolve discrepancies and ensure alignment in coding decisions.

2.6 Data Items

Table 3 below provides data items extracted from each study.

2.7 Synthesis of Results

A descriptive and thematic synthesis approach was used. Data were organized and analyzed by identifying common themes across studies. These themes included types of writing difficulties, disorder-specific findings,

Table 3. Extracted Data Items

Study characteristics	Author(s), publication year, country of origin
Population details	Participant age range, specific neurodevelopmental diagnosis
Writing difficulties	Type(s) of difficulties identified (e.g., mechanical, compositional, orthographic)
Assessments used	Tools or methods for identifying or measuring writing difficulties (e.g., DASH, WIAT-III, teacher reports, observational tools)
Key findings	Summary of relevant results, including prevalence, severity, and associated factors; if applicable, descriptions of interventions or supports provided

assessment tools used, and types of interventions reported. Results were presented in narrative form and summarized in tables for clarity. No meta-analysis was conducted due to heterogeneity in study designs, populations, and outcomes. Where applicable, findings were grouped by NDD (e.g., ADHD vs. ASD), type of writing domain (e.g., transcription vs. composition), and intervention strategy (e.g., occupational therapy, assistive technology).

3 Results

3.1.1 PRISMA-ScR

Figure 1 below shows the number of studies screened, excluded, and included.

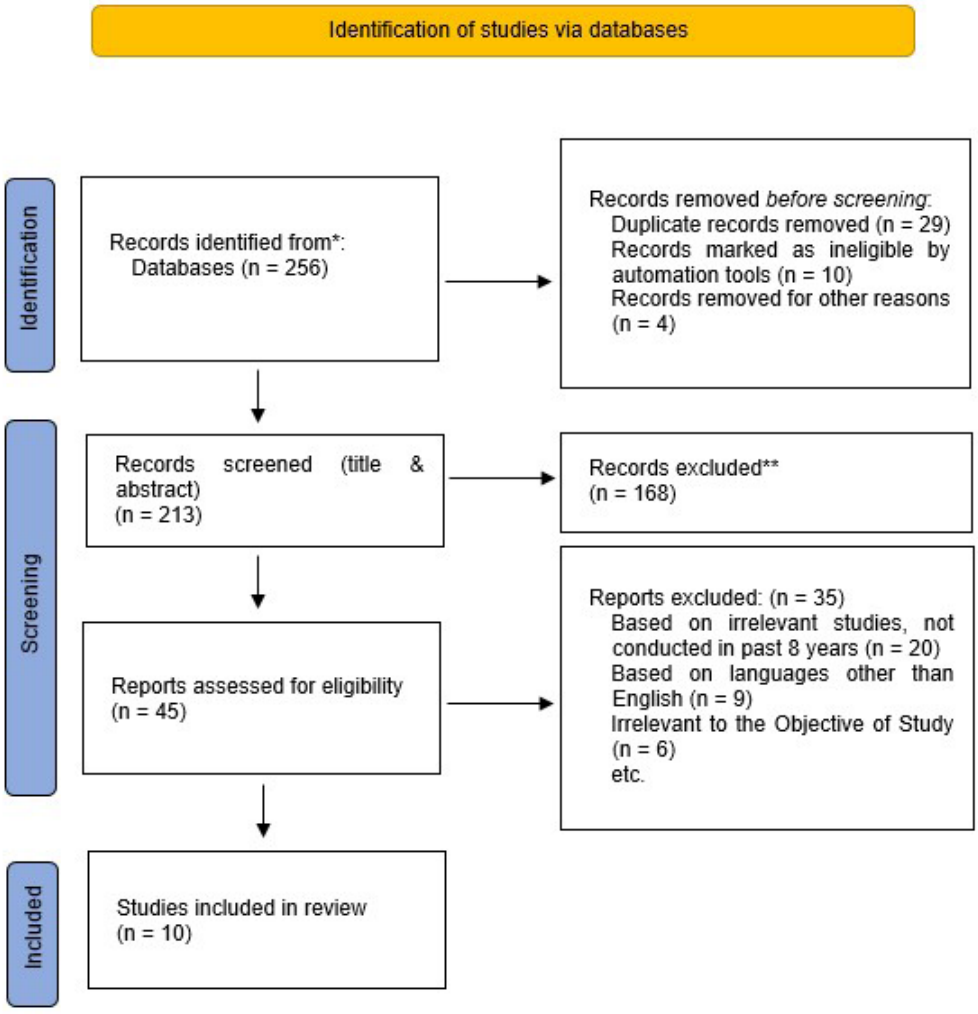

Figure 1. PRISMA-ScR Flow Chart

3.2 Characteristics of Included Studies

Table 4 below elaborates on the key findings of the studies included in this review.

Table 4. Key Findings of Included Studies

Author(s)	Title	Method	Key Findings	Conclusion
Antolini & Colizzi (2023)	Where do neurodevelopmental disorders go? Casting the eye away from childhood towards adulthood	Literature review / Perspective	Highlighted the transition challenges from childhood to adulthood in NDDs	Emphasized the need for adult-focused research and care for NDD populations
Chung, Patel & Nizami (2020)	Disorder of written expression and dysgraphia: definition, diagnosis, and management	Review article	Defined dysgraphia and reviewed diagnosis/ management strategies	Early diagnosis and tailored interventions are crucial for better outcomes
Crisci et al. (2021)	Executive functions in neurodevelopmental disorders: Comorbidity overlaps between ADHD and SLD	Empirical study, neuropsychological assessments	Found executive dysfunction common in ADHD and SLD, affecting academic skills, including writing	Targeting executive functions can improve learning outcomes in comorbid conditions.
Kita, Ashizawa & Inagaki (2020)	Prevalence estimates of neurodevelopmental disorders in Japan	Cross-sectional survey	Provided prevalence rates of NDDs in a community sample	Findings help inform public health policy and early intervention efforts
Mayer-Benarous et al. (2021)	Music therapy for children with ASD and other NDDs: a systematic review	Systematic review	Music therapy shows benefits in communication and emotional regulation	Music therapy is a promising adjunct intervention for children with NDDs
Melogno, Pinto & Vulchanova (2024)	Insights into Oral and Written Competencies in Neurodevelopmental Disorders	Mixed methods study	Identified specific oral and written competency profiles across various NDDs	A comprehensive assessment is important for personalized educational plans
Operto et al. (2021)	Neuropsychological profile, emotional/ behavioral problems, and parental stress in children with NDDs	Cross-sectional clinical study	Emotional and behavioral difficulties correlated with neuropsychological deficits in children with NDDs	Holistic care addressing both cognitive and emotional needs improves quality of life.
Soto et al. (2021)	Executive functions and writing skills in children with and without ADHD	Comparative study	Children with ADHD showed deficits in executive function, impacting writing skills	Executive function training can improve writing outcomes in ADHD.
Van der Merwe, Fourie & Yoro (2020)	Learning support strategies for learners with NDDs: Perspectives of recently qualified teachers	Qualitative interviews	Teachers use a variety of strategies but report needing more training	Professional development is key to improving educational support for learners with NDDs

Cont. Table 4

Author(s)	Title	Method	Key Findings	Conclusion
Zajic et al. (2020)	Task engagement during narrative writing in school-age children with ASD vs. peers	Observational study	Children with ASD showed reduced engagement in narrative writing tasks	Interventions to boost motivation and engagement are needed for children with ASD

3.3 Themes and Categories Identified

Following thematic synthesis of the included studies, four primary categories emerged that characterize how writing difficulties are conceptualized, assessed, and addressed in children with NDDs.

3.3.1 Types of Writing Difficulties

Writing difficulties in children with NDDs can be broadly divided into three interconnected domains: transcription skills, compositional skills, and orthographic and fine motor challenges. Transcription difficulties were commonly identified across multiple studies, especially in relation to children with ADHD and SLD (Crisci et al., 2021). Transcription refers to the mechanical process of handwriting and converting thoughts into written symbols. For instance, Soto et al. (2021) found that children with ADHD exhibited reduced handwriting fluency and accuracy due to impairments in executive function, such as planning and motor control (Soto et al., 2021). Similarly, Crisci et al. (2021) highlighted transcription issues among children with comorbid ADHD and SLD, with handwriting speed and consistency being significantly affected (Crisci et al., 2021).

3.3.2 Disorder-Specific Findings

All forms of NDDs were associated with writing difficulties, albeit disorder-specific patterns emerged, which suggested specific cognitive and behavioral factors influenced these difficulties. In the case of ADHD, writing deficits were associated with attention, working memory, and the self-monitoring framework. Soto et al. (2021) showed that executive dysfunction has an important role in impacting the fluency and organizational structure of writing (Soto et al., 2021). Attentional focus deficits paired with the need to manage several steps within a task lead to incomplete sentences, rampant errors, and chaotic, disorganized prose. Furthermore, Crisci et al. (2021) documented that ADHD-related executive dysfunctions worsen the SLD (Crisci et al., 2021). In ASD, the writing difficulties were more focused on language, narrative flow, and pragmatic expression. Melogno et al. (2024) and Zajic et al. (2020) studied the mechanical transcription processes in children with ASD and found that some of these children can mechanically transcribe text, but often fail to construct contextually and socially relevant, appropriate written material (Melogno et al., 2024; Zajic et al., 2020). The difficulty is a result of impaired theory of mind, lack of cohesive linguistic reasoning, and diminished motivation, particularly in endeavors where scaffolding is minimal, such as narrative construction.

Dysgraphia and SLDs had an identifiable profile with marked motor and orthographic deficits. As cited in Chung et al. (2020), children with these difficulties may have average to above-average verbal IQ. However, their written output tends to be inconsistent, often due to fine motor planning challenges. Such difficulties are more likely to endure relative to a balanced ratio of verbal expression or reading abilities (Chung et al., 2020). In the more comprehensive studies focusing on NDD and the broader population, there was often documented overlap of other disorders. There were many children who displayed combined characteristics of ASD, ADHD, and SLD, making it difficult to resolve writing difficulties to one diagnosis (Mayer-Benarous et al., 2021; Operto et al., 2021). These studies emphasize individual diagnosis requirements and accentuate the importance of collective explanations such as executive dysfunction, emotional regulation, and writing capabilities.

3.3.3 Assessment Tools Used

The assessment of writing difficulties diverged across studies regarding methods used and writing domains evaluated. Empirical research often relied on standardized tests. Crisci et al. (2021) applied the Wechsler Individual Achievement Test (WIAT) along with other neuropsychological batteries for evaluating positive written expression and related executive functions (Crisci et al., 2021). The composition instruments usually have spelling, sentence writing, and essay-writing subtests, which yield norm-referenced scores useful for diagnostic distinction. Tools such as the Detailed Assessment of Speed of Handwriting (DASH) have been used in clinical

and occupational settings to assess transcription skills (Mayer-Benarous et al., 2021). These instruments measure fine motor output and the speed and legibility of writing, all of which are important for diagnosing dysgraphia.

Qualitative assessment and observational techniques were reported as well, particularly in regard to student engagement or difficulties reported by the teacher. Zajic et al. (2020) used engagement observational coding during writing activities to provide insight into motivation and attention (Zajic et al., 2020). Van der Merwe et al. (2020) conducted teacher interviews aimed at identifying support and difficulties that were perceived within the classroom. They included broader developmental and functional communication or learning readiness tools, but not writing (Van der Merwe et al., 2020). This shows that there is a gap in NDD-sensitive writing assessments that measure the intricate relationship between motor function, cognitive processes, and language in a wide range of populations.

3.3.4 Interventions and Educational Strategies

Occupational therapy was often suggested for transcription problems associated with dysgraphia or DCD (Kita et al., 2020). These interventions often focus on improving fine motor skills, the legibility of handwriting, and stamina for writing through task-specific and sensorimotor methods. More attention has been devoted to non-structured educational approaches, particularly qualitative work. Van der Merwe et al. (2020) noted differentiated instruction, writing with structured aids, and teaching through multiple senses as central to teaching literacy. Freshly trained teachers stated that they applied graphic organizers, broke processes down into steps, and provided extra time, but they felt that more training was needed to adequately support learners with NDDs (Van der Merwe et al., 2020).

Assistive technologies were mentioned as particularly useful for learners with severe movement and executive functioning difficulties. While not elaborated in the included studies, speech-to-text, typing, and visual organizer software are more frequently used in individual education plans (IEPs) (Operto et al., 2021). These tools assist students in being more productive by minimizing the mental and physical workload, which allows content creation to become the primary focus. Indirect psychosocial supports have been discussed in relation to motivation and engagement, as well as behavioral challenges. Operto et al. (2021) suggested that emotional regulation, anxiety, and task avoidance mesh with writing performance. Addressing these factors with cognitive-behavioral therapy or social-emotional learning programs is likely to improve writing skills, especially among those with ASD and ADHD (Operto et al., 2021). There is a broad range of described interventions, but very few include longitudinal or controlled studies. Most interventions were observationally reported or based on correlational findings, indicating a lack of experimental research on writing interventions in neurodevelopmental disorder populations (Antolini & Colizzi, 2023; Kita et al., 2020).

4. Discussion

For one to become skilled in writing, intricate motor skills, thoughtful planning, use of vocabulary, and managing emotions must come together. DCD is often associated with difficulties in handwriting, which is considered a fine motor skill. LDs encompass a broad range of difficulties, including but not limited to spelling, grammar, writing, organization of ideas, and expression of thought (Crisci et al., 2021). This scoping review covered children with NDDs such as ADHD, ASD, dysgraphia, SLDs, and even broader developmental conditions with specific attention to their writing difficulties. While divergent in focus, methodology, and population, the studies build up an understanding of the presence, assessment, and management of writing challenges in children with NDDs. There is a shared consensus that children with neurodevelopmental disorders face greater challenges with writing when compared to their neurotypical peers (Zajic et al., 2020). Regardless of a child's diagnosis, there is strong evidence to suggest that writing, due to its complex nature, is a system under strain and a multifaceted challenge. Be it executive dysfunction (as in ADHD), social-pragmatic communication skills (as in ASD), or fine motor skills (dysgraphia), the literature is unified in documenting that writing is impaired across this population (Kita et al., 2020).

The impact of coexistence has also been documented consistently across studies. Many children with NDDs, for example, present with a mix of symptoms such as ADHD with SLD, or ASD with some attentional problems. This makes it rather impossible to pinpoint one single factor that contributes to their writing difficulties. Crisci et al. (2021) explicitly discuss the interplay of ADHD and SLD, noting the impact of deficits in executive functioning on the overload of academic tasks (Crisci et al., 2021). In the same way, Zajic et al. (2020) noted that attentional problems in children with ASD affected their participation

in narrative writing activities, implying some common core of dysfunction beyond the various diagnoses (Zajic et al., 2020). Other studies have emphasized the role of emotional or behavioral difficulties in writing performance. Both Operto et al. (2021) and Mayer-Benarous et al. (2021) note that children with NDDs often experience anxiety and frustration or behavioral unrest that are incompatible with writing, especially in competitive environments (Mayer-Benarous et al., 2021; Operto et al., 2021). This further reinforces the point that difficulties with writing are not always the result of solely cognitive or motor skills; rather, they may be intricately associated with emotions.

However, these studies are similar in their perspective systems; they differ in focus, which represents the diversity within NDDs and writing disorders. For instance, Soto et al. (2021) concentrate on children with and without ADHD. They report that children with ADHD face considerable difficulties in organizing and maintaining sustained written output because of weakened executive functioning. This study quantified these deficits by linking particular executive functions, such as working memory and inhibition, to writing (Soto et al., 2021). On the other hand, Melogno et al. (2024) analyzed the oral and written skills of children with ASD and other language NDDs from a more holistic cognitive and linguistic angle. They found that many children with writing difficulties struggle with organizing words and constructing coherent thoughts, especially children with ASD (Melogno et al., 2024).

Focusing on the more clinical aspects, Chung et al. (2020) focused on dysgraphia as a disorder of written expression and its associated clinical diagnostic criteria, alongside handwriting legibility and the motoric output of writing (Chung et al., 2020). This differs from the work of Van der Merwe et al. (2020), where they looked from a more educational and functional perspective. Instead of focusing on the writing, the research focuses on the perception and the relation of newly trained teachers to children with NDDs in their classrooms (Van der Merwe et al., 2020). This contributes by addressing the bridging gap of teaching that is not tackled in more clinically or experimentally oriented papers.

Contrasts also emerge in the kinds of methodology used in different studies. Soto et al. (2021) relied on quantitative, empirical data to compare writing performance across diagnostic groups (Soto et al., 2021). However, Van der Merwe et al. (2020) employed observational or qualitative methods to understand children's behaviors and teachers' perspectives (Van der Merwe et al., 2020). The differences in approaches to studying writing underscore the complexity of the construct.

The studies differ the most in their approaches to intervention. Support is recognized as a need in all the studies, but only a few provide concrete details. For example, Chung et al (2020) suggested occupational therapy along with specialized teaching techniques for children with dysgraphia. It indicates the need for some linguistically motivated and informative strategies, in particular for children with ASDs (Chung et al., 2020). In contrast, Mayer-Benarous et al. (2021) proposed music therapy as a potentially beneficial adjunct treatment, even though it's not writing-focused (Mayer-Benarous et al., 2021). These approaches also demonstrate that a single intervention cannot be effective for all students, and more sophisticated targeted studies are necessary to devise effective methods for various kinds of writing impairment.

The results from this study supported a writing deficiency in children with NDDs as being complex in nature. While there is a unique profile for each disorder, writing skills deficiency is seldom confined to one domain. It is most often a blend of motor, linguistic, cognitive, or other domains working together in a system. Moreover, the range of approaches and emphasis in the study highlights fragmented research where the clinical, educational, and psychological spheres are not always blended. One important takeaway is the lack of an overlap fusion which requires an interdisciplinary two or more fields assessment. Standardized tests dominate diagnostics in the majority of the studies, while observational and contextual assessment frameworks, like those conducted in classrooms, have unique value in studying child functioning in real-life settings (Crisci et al., 2021; Van der Merwe et al., 2020).

3.4 Strengths and Limitations

The most notable strength of this review was including a wide array of NDDs alongside a variety of writing difficulties, ranging from mechanical to compositional skills. The transparent and systematic approach ensures clarity in study selection and data extraction, which adds reliability to the review. Limitations include the focus on English publications only, which risks excluding relevant studies and adding language bias. There may also be publication bias since studies with non-significant results may be underreported. With these limitations acknowledged, the review still stood as a useful synthesis of literature for highlighting key gaps in existing research.

3.5 Future Directions

Targeted approaches for particular writing challenges within different neurodevelopmental disorders require further research focus. Having standardized writing skill assessment tools will enable consistency across evaluations in different studies. Culture-specific research is also crucial in understanding, describing, and interpreting the complexities of writing difficulties among various populations. The evolution and enduring impacts of these difficulties can be more accurately tracked through longitudinal research focused on the progression of writing skills over time. With these approaches, it is possible to develop effective evidence-based practices and refined support strategies customized to individual needs for children with neurodevelopmental disorders (NDDs) across the globe.

4 Conclusion

This scoping review underlined how the challenges of writing for children with NDDs are complex. The findings reveal specific difficulties within the mechanical and compositional writing skills, deeply related to cognitive and motor functions as well as emotional factors. Through different methodologies, all the studies reviewed seem to align on one underlying issue, which is the lack of recognition and sufficient focused assistance. There is still an urgent need for more precise criteria with refined diagnostic frameworks, bespoke evaluation frameworks, customized intervention models, and comprehensive, tailored approaches. Filling these gaps would significantly enhance support for children with NDDs academically and advance equitable access to educational opportunities.

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